2014-2015

Aircraft Spruce & Specialty Co.

Worldwide Distributor of Certified and Homebuilt Aircraft Supplies

Aircraft Spruce & Specialty Co.
SINCE 1965

Welcome!

Aircraft Spruce & Specialty Company turns 49 years old in 2014, and we've come a long way since Flo and Bob Irwin started shipping orders for aircraft grade spruce from the basement of our family home in Fullerton.

Back in 1965, Aircraft Spruce had one full time employee (Flo) and one product; aircraft spruce. Over the years, every type of aircraft part and pilot product has been added to our inventory, and the company catalog has grown to over 900 pages and over 80,000 products. The one employee has increased to over 170 today. From the day Flo opened the doors in 1965, to 1980 when we took the helm, all the way to 2014, the goal of our company is to offer the best price on the products we sell and the best service in the industry.

Our growth over the years has been made possible by the support of our customers worldwide, and every member of the Aircraft Spruce team is committed to living by our Mission Statement on every order, every day.

We hope that you will enjoy using this latest edition of the Aircraft Spruce catalog to locate the aircraft parts and pilot supplies you need. You can also shop on-line at our new and improved website at www.aircraftspruce.com. Place your orders by phone with our knowledgeable, friendly sales agents, fax your order to our 24 hour fax line, or order online through our easy-to-use website.

Our thanks to all of our customers worldwide for their patronage over the past 49 years; we look forward to serving you soon.

Jim & Nanci Irwin
Aircraft Spruce & Specialty Co.

Our Mission Statement . . .

At AIRCRAFT SPRUCE & SPECIALTY, we recognize that the CUSTOMER is #1. We will do everything in our power to make sure the customer is satisfied with their experience with Aircraft Spruce & Specialty.

At AIRCRAFT SPRUCE & SPECIALTY, we will sell only the highest quality products at the lowest price.

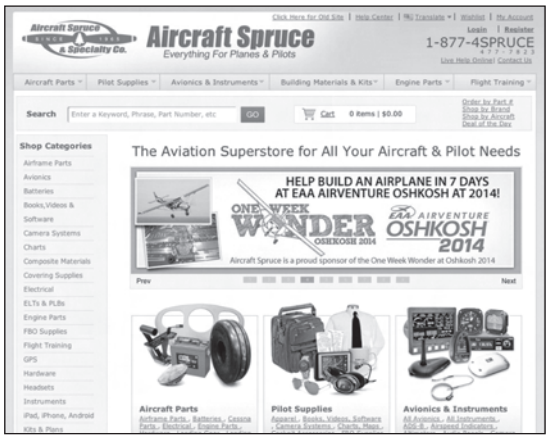
At AIRCRAFT SPRUCE & SPECIALTY, it is our goal to provide everything for airplanes for our customers. We either carry or can special order the items our customers want or need.

At AIRCRAFT SPRUCE & SPECIALTY, we will ship every order taken for in stock products the same day. We are committed to doing whatever is necessary to ship our customers orders accurately, completely, and on time.

At AIRCRAFT SPRUCE & SPECIALTY, we will solve our customers' problems quickly, fairly, and efficiently, on the customer's FIRST call.

At AIRCRAFT SPRUCE & SPECIALTY, we will work together as a team to reach our goal: 100% customer satisfaction.

Aircraft Spruce Online



There has never been an easier way to access thousands of aviation products than visiting www.AircraftSpruce.com. The Aircraft Spruce website provides easy access to information on all of the products contained in this catalog 24/7. Place your order online and confirm the order in real time as they are processed. View backorder status and product availability.

Our 900+ page Parts Catalog is available for download in pdf format online 24 hours a day.

Customers can also get up to the minute account and order status anytime of the day. You have real time access to your account information when you want and need it. Open order status and your filled order history is always available and updated daily. Our partnership with our freight carriers, like UPS provide you with up to the minute shipping information including package status, scheduling, and delivery.

Try our new "Shop by Aircraft" parts guide. We have compiled the application data for a number of common general aviation aircraft so our customers can easily find their applicable standard replacement parts.

UPS FedEx

• Fast, Easy, Convenient! • Check order status! • 24-hour access to all of our products!

www.aircraftspruce.com

QUICK INDEX

A complete and detailed index can be found at the back of this book.

NAME: _____

CUSTOMER #: _____

TOLL-FREE ORDER LINE / CUSTOMER SERVICE

877-477-7823 • 800-861-3192

ORDER DESK HOURS (PST)

Mon. - Fri.: 5:00am - 6:00pm, Sat.: 7:00am–3:30pm

TOLL-FREE FAX LINE

800-329-3020

SHOP ON-LINE

www.aircraftspruce.com

info@aircraftspruce.com

AVIONICS SALES TEAM

800-826-3160

THREE REGIONAL WAREHOUSES

AIRCRAFT SPRUCE WEST

ADMINISTRATION & WESTERN DISTRIBUTION CENTER

225 Airport Circle, Corona, CA 92880-2527

Phone: (951) 372-9555 • Fax: (951) 372-0555

CUSTOMER SERVICE HOURS (Pacific Time)

Mon. thru Fri.: 5:00am–4:00pm • Saturday: 7:00am–3:30pm

AIRCRAFT SPRUCE EAST

EASTERN REGIONAL DISTRIBUTION CENTER

452 Dividend Drive, Peachtree City, GA 30269

Ph: (770) 487-2310 • Fax: (770) 487-2308

CUSTOMER SERVICE HOURS (Eastern Time)

Mon. thru Fri.: 8:00am–7:00pm • Saturday: 10:00am–6:30pm

AIRCRAFT SPRUCE CANADA

150 Aviation Ave., Brantford Municipal Airport,

Brantford, ON N3T 5L7

Ph: (519) 759-5017 • Fax: (519) 759-8964

STORE HOURS

Mon. thru Fri.: 8:00am–5:00pm • Saturday: 8:00am–3:00pm

www.aircraftspruce.ca • email: info@aircraftspruce.ca

CAN'T FIND WHAT YOU NEED? LET US HELP!

While we try to offer everything you might need for your aircraft, there are some products that you may not find listed in this catalog. Let us help! Just give our Sales Department a call on our Toll Free number and provide our Sales representative with as much information as possible on the parts you need. They will source the product for you and provide a quotation and lead time for the product as quickly as possible.

NOTICE! Many parts in this catalog are NOT FAA approved.
Unless our catalog specifically indicates a part has a PMA (Parts Manufacturers Approval), that part may not be certified or approved for aviation use. The selling of a part should not be construed as a representation that the part is certified or approved for aviation use, nor can Aircraft Spruce & Specialty Co. include instructions for use or warnings unless provided by the manufacturer or distributor. Any concerns the purchaser may have about the suitability of a part for aviation use, instructions for use or warnings, should be promptly directed to the manufacturer.

WAIVER OF LIABILITY AND INDEMNIFICATION AGREEMENT

In as much as Aircraft Spruce & Specialty Co. has no opportunity to supervise the manufacture, installation or maintenance of the parts supplied by it, nor any opportunity to participate in the design or manufacture of the various certificated and homebuilt aircraft in which its parts are utilized, the purchaser by placing this order and accepting said merchandise from Aircraft Spruce & Specialty Co. agrees that all materials purchased will be used solely at purchaser's risk and that purchaser will indemnify and hold Aircraft Spruce & Specialty Co., its owners and employees, free and harmless from all loss, liability or damage resulting from claims brought by reasons of any alleged failure or defect of any part or parts supplied by Aircraft Spruce & Specialty Co.

COMPOSITE MATERIALS (CM) 19–43 Pg.
Glass Cloth, Resins, Foams, Tools, Safety Equipment, Kevlar, Graphite

WOOD PRODUCTS (WP) 44–50 Pg.
Spruce, Balsa, Plywood, Glues

METALS & PLASTICS (ME) 51–62 Pg.
4130 Steel, Aluminum, Tubing, Sheet, Rod, Bar, Angle, Hinge, Copper Tubing, Firewall Metals, Trailing Edge, Channel, Plastics, Plexiglas, Lexan, Nylon, Phenolic & Acrylic Tube Rod

HARDWARE (HA) 63–111 Pg.
Bolts, Nuts, Washers, Screws, Fittings, Fasteners, Rivets, Nails, Rivnuts

AIRFRAME PARTS (AP) 112–263 Pg.
Rubber Goods, Grommets, Hose O-Rings, Shock Mounts, Shock Cords, Channels, Control System Components, Fuel Supplies, Bearings, Tie Rods, Throttles & Controls, Propellers, Spinners, Cowlings, Windshields, Seat Belts & Harnesses

LANDING GEAR (LG) 264–303 Pg.
Wheels & Brakes, Tires & Tubes, Axles, Tailwheels

ENGINE PARTS (EP) 304–403 Pg.
Magnetos, Carburetors, Starters, Generators, Alternators, Spark Plugs, Ignition Harnesses, Engines, Exhaust Stacks, Engine Mounts, Air & Oil Filters

COVERING SUPPLIES (CS) 404–475 Pg.
Fabric, Tapes, Inspection Rings, Grommets, Paint Brushes, Dopes, Thinners, Finishes, Chemical Products, Registration Stencils, Placards, Decals

INSTRUMENTS (IN) 476–548 Pg.
Vacuum Pumps, Pitot Tubes, Shock Mounts, Instrument Overhaul, Tachometer Cables

ELECTRICAL (EL) 549–624 Pg.
Batteries, Lights, Strobes, Electrical Wire & Terminals

AVIONICS (AV) 625–720 Pg.
Custom Panels, Radios, Antennas, ELT'S, Encoders, GPS, Headsets, Intercoms, Accessories

TOOLS (TO) 721–821 Pg.
Tubing Benders & Cutters, Rivet Guns, Wire Twisters, Spray Guns, Welding Equipment, Spark Plug Tools, Safety Equipment

PILOT SUPPLIES (PS) 822–940 Pg.
Oxygen Equipment, Tiedown Kits, Goggles, Sun Glasses, Videos, Charts, Flight Cases, Tow Bars, Parachutes.

BOOKS & VIDEOS (BV) 941–980 Pg.
Construction & Aviation Videos, Instructional Materials, Pilot Guides, Log Books, Aircraft Manuals, General Aviation Books, E-Books

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ON THE COVER:

Photo by Jim Lawrence, of Roger Dubbert, Zenith Aircraft demo pilot, in the Zenith CH 750 Cruzer light sport kit aircraft.
Our catalog cover features the popular Zenith CH 750 which is the One Week Wonder aircraft being built at AirVenture 2014.

AIRCRAFT SPRUCE & SPECIALTY CO.

A COMPANY HISTORY

Bob and Flo Irwin

201 West Truslow Ave, Fullerton CA.
Home of Aircraft Spruce from 1973 to 1997

Present Home of Aircraft Spruce West
(225 Airport Circle, Corona, CA.)

Present Home of Aircraft Spruce East
(452 Dividend Drive, Peachtree City, GA)

The foundation for what is now Aircraft Spruce & Specialty Co. dates to the summer of 1956 when Flo and Bob Irwin founded Fullerton Air Parts at Fullerton Municipal Airport in Southern California. Bob, born and raised in Kansas City, MO., a pilot since the 1940's and active in the CAP and other aviation groups, knew airplanes and the parts that were needed to keep them flying. Flo, a native of Rochester, New York, had no aviation background but learned the business quickly and knew what it would take to keep customers coming back... fair prices and good service. Fullerton Air Parts grew into one of the largest retail aircraft parts suppliers in the western states during the next nine years.

In 1965, Bob and Flo Irwin sold the business and founded another one which sold only one product, aircraft grade spruce lumber for aircraft construction and restoration. Aircraft Spruce Co. quickly added more products to its small catalog and adopted the name Aircraft Spruce & Specialty Co., with a goal to offer everything pilots and aircraft builders need. As Aircraft Spruce served more customers and more and more products were added, staff grew from 2 in 1965 to over 150 today.

Jim Irwin, Bob and Flo's older son, grew up in the business, working in jobs such as cutting metal and spruce, pulling and shipping orders, and managing kit programs such as the Vari-Eze back in 1975 while still in college. Graduating from California State University at Fullerton in 1978 with a degree in business administration (marketing), Jim acquired the company and became president in 1980. Jim's wife Nanci, who graduated with an accounting degree from the University of Southern California in 1977, is vice-president and works full time managing the company's accounting and data processing departments. Jim Irwin has logged over 4000 hours as a multi-engine, instrument rated pilot since 1976 and Nanci Irwin is a licensed private pilot as well. They fly the company Cessna 425 extensively on business throughout the Southwest. Jim and Nanci Irwin have four children: Mike, Krissy, Jeff, and Rob, who are all members of the Aircraft Spruce management team. Mike and Jeff are pilots and fly the company's Navion Rangemaster.

Flo and Bob Irwin, along with Jim's younger brother John, moved to Lake Havasu City, Arizona in the fall of 1983 and founded ACS Products Co., which manufactures a line of products which is distributed by Aircraft Spruce. Flo Irwin passed away on June 10, 1989, but the legacy of this warm, outgoing, and talented businesswoman lives on in the businesses she founded and built to serve the aviation community. John Irwin, his wife, Frances, and Bob Irwin now manage the ACS Products Co. operation. Bob Irwin is an instrument rated pilot with more than 2000 hours logged and based his 1968 Navion Rangemaster at Lake Havasu City until May 2000 when Bob retired as a pilot, after fifty years of flying, and moved the Navion to Chino Airport for his grandchildren to fly. Prior to acquiring the Rangemaster in 1976, Bob owned a Vultee BT-13B and a 1949 Ryan Navion.

Aircraft Spruce was housed in downtown Fullerton, CA. from its founding in 1965 until late 1997. The last 24 years in Fullerton the company was operated in a historic Fullerton former citrus packing house, which we eventually outgrew. In the fall of 1997, Aircraft Spruce moved to a new, 62,000 square foot facility in Corona, California. In the Spring of 2004, Aircraft Spruce East moved to a new 56,000 Sq. Ft. facility in Peachtree City, GA from its old home in Griffin, GA. Aircraft Spruce Canada was opened in Toronto in December 2006, and moved to a new facility at Brantford Airport in Ontario in late 2008. We are proud of the tradition of our company that now dates back some 50 years, and are pleased to have had the opportunity to help aviators around the world build the plane of their dreams. Our growth, from a single room in 1965 to 120,000 square feet in three facilities that we have today, has been a direct result of the loyalty and patronage of our customers. Our goal is to continue to provide the very best in products, prices, and customer service to our friends in the years to come.

CELEBRATING 49 YEARS OF SERVICE TO AVIATION!
1965 – 2014

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRCRAFT SPRUCE WEST
CORONA, CALIFORNIA

Aircraft Spruce West was located in a 27,000 split level packing house in downtown Fullerton, CA. from 1973 until 1997. Built in 1924 by the Union Pacific Railroad, the Building was known as the Elephant Packing House named after the original lease holder operating a citrus packing operation there. In 1996, Aircraft Spruce acquired a 5 acre parcel near the airport in Corona, CA. Construction for the new home of Aircraft Spruce West began in March 1997. In September of 1997, the new 62,000 sq. ft. facility was completed and operations were moved from Fullerton to Corona. The Corona facility features 10,000 sq.ft. of office space, a large, automated warehouse, separate workshops for preparation of metal and wood orders, and a huge retail store for fly-in and drive-in customers. Visitors are always welcome at Aircraft Spruce West.

Phone: (951) 372-9555

email: info@aircraftspruce.com

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GEORGIA

Aircraft Spruce East is located on Falcon Field (FCC) in Peachtree City, GA. 20 miles southwest of Atlanta. Aircraft Spruce East was formally located in a 27,000 sq.foot building in Griffin, GA which was the former home of Alexander Aeroplane Co., prior to the acquisition by Aircraft Spruce in January 1996. The new facility in Peachtree City is 56,000 sq. ft. and became the new home of Aircraft Spruce East in March of 2004. Aircraft Spruce East ships hundreds of orders each day to customers worldwide and features a fully stocked aircraft parts and pilot supply store. Be sure to visit Aircraft Spruce East any time you are in the Atlanta area.

Phone: (770) 487-2310

email: info@aircraftspruce.com

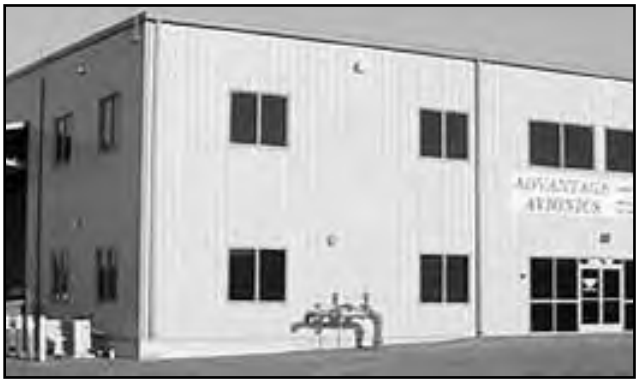
AIRCRAFT SPRUCE CANADA
BRANTFORD, ONTARIO

Aircraft Spruce Canada is located at the Brantford Municipal Airport in Brantford, Ontario, about an hour drive south from Toronto. A retail store is available to customers who fly or drive to the Brantford Airport to purchase aircraft parts, avionics, and pilot supplies. Aircraft Spruce Canada also provides same day shipping to customers throughout Canada from our 12,000 square foot facility. Aircraft builders and owners in Canada have full access to products sold by Aircraft Spruce in the United States at competitive prices and shipping rates. Shipping options include Canada Post, UPS, FedEx, DHL, Dicom, and Purolator. Make plans to visit Aircraft Spruce Canada anytime you are in the Greater Toronto Area.

Phone: (519) 759-5017

email: info@aircraftspruce.ca

ADVANTAGE AVIONICS
CHINO AIRPORT, CHINO, CA



Aircraft Spruce Avionics opened in September 1993 as a full service avionics installation and repair facility at Fullerton Airport. In 1995 Aircraft Spruce Avionics moved to Chino Airport and operated there through December 2003, at which time it merged with Advantage Avionics, also located at Chino Airport. Advantage Avionics is now the avionics installation and repair facility of Aircraft Spruce, and is an authorized factory dealer for Honeywell, Garmin, Magellan, Icom, S-Tec, Century, Chelton, and many other leading avionics manufacturers.

For information on your avionics requirements and for installation of avionics in your aircraft, call the avionics specialists at Aircraft Spruce at (800) 826-3160.

KCNO Chino Phone: (909) 606-0220

email: fly@AdvantageAvionics.com

AIRCRAFT SPRUCE INTERNATIONAL REPRESENTATIVES

Aircraft Spruce & Specialty Co. serves our customers worldwide through International Representatives in over 55 countries. These countries include: Argentina, Australia, Austria, Belgium, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Estonia, Finland, France, Germany, Guatemala, Hungary, India, Ireland, Israel, Italy, Japan, Korea, Lithuania, Luxembourg, Madagascar, Malaysia, Mexico, Netherlands, New Zealand, Norway, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovak Republic, South Africa, Spain, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Turkey, Ukraine, United Kingdom, Uruguay, Venezuela.

For complete contact information for any of our Aircraft Spruce International Representatives, please call 1-877-4-SPRUCE or visit our website at www.aircraftspruce.com

THE AIRCRAFT SPRUCE MANAGEMENT STAFF

JIM IRWIN
President

NANCI IRWIN
Vice President

TOM MARRACCI
Director of Operations - West

DON ARRINGTON
Director of Operations - East

MIKE IRWIN
Purchasing Manager

JEFF IRWIN
Operations Manager

ROB IRWIN
Brand Development Manager

DESIREE CZAPLINSKI
Marketing Manager

TOM GLAZE
Sales Manager—West

CAROLYN LEON
Customer Service Manager

DEBBIE MOSS
Accounting Manager

CHUCK JONES
Warehouse Manager—West

TIM KREIDER
Store Manager - East

TAMMY SHORT
Warehouse Manager—East

RYAN DECK
Avionics Sales Manager

SCOTT ROBERTSON
Shop Manager – West

JOSH SOLIS
Product Support Manager

DAVE PUSKAS
General Manager - Canada

ANTHONY GARCIA
International Sales Manager

VERONICA BELTRAN
International Customer Service Manager

JACK SAMUELS
Outside Sales Manager

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRCRAFT SPRUCE TEAM...

COMMITTED TO CUSTOMER SATISFACTION

AIRCRAFT SPRUCE WEST STAFF - JUNE 2014

AIRCRAFT SPRUCE EAST STAFF - JUNE 2014

AIRCRAFT SPRUCE CANADA STAFF - JUNE 2014

FRIENDLY, FAST, & EFFICIENT ORDER PROCESSING..... THAT'S THE AIRCRAFT SPRUCE WAY!

At Aircraft Spruce & Specialty Company, we handle every order with the same care and diligence that we did our first order back in 1965. Here is a glimpse of some of the many departments that process thousands of orders each week and ship them to our customers around the world.

Orders may be placed by mail, FAX, email, and online at www.aircraftspruce.com, or as most customers prefer, by phone with one of our friendly, helpful sales persons. Your order is quickly input into our computer system and printed immediately in the warehouse.

Our large staff of order pickers receive the orders in the warehouse, fill the order and pass it along to the shipping department for careful packaging and shipment. We carry over 60,000 different inventory items!

Warehouse inventory is carefully arranged in computer part number sequence for fast and accurate order completion. As your single source supplier, Aircraft Spruce stocks lumber, plywood, metals, composites, hardware, instruments, tools, covering supplies, avionics....and everything in between! Walk-in customers are invited to visit our stores located at our warehouses in Corona, CA and Peachtree City, GA, and Brantford Canada.

Orders for specially cut steel and aluminum tubing, sheet, bar and plate are no problem here, and are processed on a daily basis. Aircraft Spruce furnishes raw materials to large end users in huge quantities at volume discounts, as well as cut pieces as small as one foot to homebuilders. Whatever you need, we've got it!

Hand selected aircraft grade spruce lumber was our very first product, and remains one of our specialty products today. All of our spruce is certified to MIL-S-6073 and is custom milled, inspected and packaged according to customer specifications.

An average of 2000 packages per day leave the Aircraft Spruce warehouses in Corona, CA, Peachtree City, GA, and Brantford ON, Canada via UPS, Parcel Post, Federal Express, air freight or sea freight on their way to our customers throughout the United States and worldwide. Our state-of-the-art in-house computer systems with complete order tracking capability make Aircraft Spruce & Specialty Company the smart choice as your complete supplier for aviation materials and components.

AOPA & EAA SPONSORSHIPS

EAA CREDIT CARD DISCOUNT PROGRAM

Aircraft Spruce has been a major sponsor of EAA for many years, providing donations and materials for EAA SportAir Workshops, AirVenture Forums and Workshops, EAA Webinars, Young Eagles, and many regional and local EAA events.

Aircraft Spruce provides discounts on orders placed by EAA members using the EAA credit card. The discount varies on every product, and there are certain products on which discounts are not permitted by the manufacturer. The maximum discount is 10%, and the price with discount applied can be provided by the Aircraft Spruce sales agent or online. When you use the EAA Platinum Visa credit card our system recognizes the card and applies applicable discounts to each product.

AOPA CREDIT CARD POINTS PROGRAM

Aircraft Spruce & Specialty has been a major sponsor of AOPA for many years, and in 2012 became the first aviation supply company to join AOPA as a Strategic Partner. This partnership provides funding and support for the many AOPA programs that are essential to the growth of general aviation.

AOPA BankAmericard Cash Rewards™ Visa® Credit Card

· 1% cash back on every purchase (including aviation fuel)

· 2% cash back on groceries

· 3% cash back on gas (automotive)

· Grocery and auto gas bonus rewards apply to the first $1,500 in combined purchases in these categories each quarter

ORDERING INFORMATION

THE AIRCRAFT SPRUCE CATALOG FREE ON REQUEST

We want all aviators to have access to the wide range of products and services offered by Aircraft Spruce. Just give us a call on our toll free order line, send us a request for a catalog by fax, mail, or e-mail, and we'll have a complimentary copy of our catalog on the way to you the same day. Our catalog is also available on CD, or for download in pdf format at www.aircraftspruce.com. If you know of someone who needs a catalog, please let us know.

Note: Free Shipping on catalogs shipped within the USA (including Alaska + Hawaii). Canadian and international catalog orders will incur a $15 freight charge via Bulk Mail. Additional items may incur additional freight charges. Expedited shipping will incur additional freight charges.

Print Catalog ..... P/N 01-38400 ..... FREE
CD Catalog ..... P/N 01-00612 ..... FREE

VISIT THE AIRCRAFT SPRUCE STORES

Stop by one of our stores to view and purchase the many items listed in the Aircraft Spruce catalog. The Aircraft Spruce West store is open Monday thru Friday 8:00am to 6:00pm, and Saturday 7:00am to 3:00pm. The Will Call store at Aircraft Spruce East is open Monday thru Friday 8:00am to 6:00pm, and Saturday 8:00am to 4:00pm. The Aircraft Spruce Canada store is open Monday thru Friday 9:00am to 5:00pm, Saturday 9:00am to 3:00pm. Call either office ahead of time to place your order and we will have it ready for pick-up upon your arrival. The staff at Aircraft Spruce West, East, and Canada welcome your visits.

SPRUCE ONLINE

Aircraft Spruce Online provides customers with up to the minute account and order status utilizing their own personal computers. The Aircraft Spruce Web Site provides information on many of the products contained in this catalog, real time access to account information, open order status and filled order history available daily. Confirm order on line in real time as they are processed, and view backorder status and product availability. In addition, our partnership with UPS provides you with up to the minute shipping information including package status, scheduling, and delivery exception.

www.aircraftspruce.com

CUSTOMER COMMENT CARDS

Your satisfaction is our number one priority. This is why we include a Customer Comment Card in every order we ship. Please take a moment to complete the few questions on the card and give us any comments or suggestions you might have. Simply drop the postage paid card in the mail to return to our California headquarters. Your response helps us monitor our level of service and ensure that we are performing well for you.

SHIPPING TIME

Orders placed by 4:00 pm EST and 4:00 pm PST Monday-Friday for "off-the-shelf", in-stock items are normally shipped same day from the respective location (Peachtree City, GA or Corona, CA).

Although we stock the vast majority of the items in our catalog, we cannot assure that they will all be on hand at all times. We ship every order as quickly as possible, and in the event of a delay, be assured that we are working hard to get your order shipped promptly. Due to order volume during holidays, we cannot guarantee that all orders placed can ship on the day after the holiday closure.

Orders for spruce, tubing and other special cut products may take a few days to ship depending on order volume. Special order products ship base on the lead times of each manufacturer.

Note: Special Instructions may delay shipment of your order.

OUR BIODEGRADABLE PACKING PEANUTS

The packing "peanuts" that we use to fill product boxes for protection during shipping are 100% biodegradable, clean and hygienic, non-static, odorless, recyclable and non-polluting. They are a starch mixture made from potato or wheat and are water soluble; just dispose of them in the sink with water, hose them away, put in a garbage disposal, or flushed down a drain or toilet. They do not pollute groundwater. This material is the best we have found as an economical way to insure maximum protection of the contents of our shipping boxes.

CLOSING THE TRANSACTION

For our customer's convenience we enclose a copy of the invoice covering the order with each order shipped except those shipped to a third party.

If the order is paid by check and the check did not cover the full amount of the invoice, the amount of underpayment will be sent C.O.D. for the balance due plus C.O.D. fee of $10.50 rather than delay the order.

If you have overpaid by check, the overpayment will be credited to your account or refunded. C.O.D. shipments are considered "paid" as soon as we receive payment from UPS, and credit card orders are paid automatically at time of shipment. We look forward to your next order!

WHEN YOU RECEIVE YOUR ORDER

Upon receipt, the package should be opened promptly and material checked against the packing slip enclosed. Items out-of-stock at time of shipment will be marked as "back-ordered – to follow." These items will not be charged on the invoice enclosed with the package and will be forwarded as soon as delivery is received from our suppliers. The back-ordered items will not be charged until shipped. About 90% of the items featured in our catalog are carried in stock. Special items of hardware, bearings, unusual fittings and slow moving items are special ordered as required. However, even with the large inventory we carry, it is not uncommon to "come up short" on some items. If an item is missing and not marked "backordered", please advise us immediately by mail or call our Customer Service Dept.

BACKORDERS

Backorder are shipped from the warehouse
(WEST OR EAST) that receives stock first.

Although we make every effort to ship all orders "complete," it is often necessary to backorder one or more items if we are out of stock. When the partial order is shipped and invoiced, you are not charged for the backordered item(s) until these items are shipped. You are billed only for what is shipped. A backorder is created and shipped as soon as the items arrive. The backorder is then invoiced and any overpayment from the first invoice is applied to it. If you do not wish to have any items backordered, or wish to cancel an existing backorder, just let us know. We will do so immediately if the backorder has not been shipped. We are working continuously to keep all items in stock to preclude backorders. If a backorder is necessary, we do appreciate your patience. Aircraft Spruce pays the shipping costs within the 48 contiguous United States by surface shipping on backorders when the backordered items could have been shipped via UPS inside the first package at no additional freight cost. Except when the backordered items are oversize, hazardous, contain one gallon or larger, or COD shipments. We will continue to strive to maintain stock of all our products to keep the necessity for backordering parts to a minimum.

RETURNED MERCHANDISE

Merchandise may be returned for credit or refund within 30 days from date of purchase if received in resalable condition—packed in original manufacturer's box, complete with instructions and all components (if applicable). A copy of the original order showing purchase or information stating the invoice number and date of purchase, with reason for return must accompany the article. Do not mail purchase information in letter form under separate cover. Do not return any products C.O.D. as it cannot be accepted by our warehouse. All returns must be made to Aircraft Spruce West in Corona, CA. Certain items may not be eligible for return (e.g. books, videos, DVDs software, special order items, cut materials, etc). Call first for a return authorization number and instructions to retun the product.

Call Aircraft Spruce EAST or WEST customer service for a
RMA Number Before Returning any Product

DAMAGE OR SHORTAGE

Open and examine all packages promptly. Notify the Aircraft Spruce Customer Service Department of any discrepancies in the order. If the merchandise is received in damaged condition or the carrier fails to deliver the entire shipment as shown on the Bill of Lading covering motor freight delivery, make note of the damage or shortage on the Bill of Lading and ask the driver to sign it. Then call the terminal office of the carrier and institute a claim for the loss or damage. If a package delivered by UPS arrives damaged, report this to the driver immediately. UPS will issue a report on the damage to Aircraft Spruce at which time a replacement shipment can be made.

AIRCRAFT SPRUCE WILL NOT BE UNDER SOLD!

Aircraft Spruce works hard to bring you the lowest prices on every product we carry. If you have found a better price for an item at another authorized dealer, we will do everything possible to beat that price. Our Lowest Price Guaranteed is only applicable to identical conditions of sale. The item must be in stock at the other authorized dealer (not a floor sample, "open box" item, refurbished or demo piece). This offer applies to new purchases only.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

ORDERING INFORMATION

OPEN ACCOUNTS

Aircraft Spruce has long served many companies, schools and government agencies on an open account basis. Established companies can apply for an open account by submitting a credit application including all company data and at least three business references and bank information. Credit application forms available on request. Open account terms are net 15 days after invoice date.

DEALER/OEM DISCOUNTS

We have offered discounts to our regular dealers and FBO's for many years for resale purposes, and we welcome the addition of new dealers to best serve aviation consumers worldwide. Due to the very competitive and low margin nature of most of the prices shown in this catalog, all discounts are based on volume purchasing. Discounts for many items are shown below the product in the catalog. Discounts for items with discounts not shown in the catalog or for larger quantities than those listed can be quoted by mail, phone, or FAX upon request. You can be assured, as an aviation dealer, that you will receive the best possible net prices from Aircraft Spruce on all product lines that we carry. If you ever find a lower current advertised price on any product, just let us know and we'll beat it. Call for an Aircraft Spruce dealer application if interested in becoming a dealer for our covering supplies, hardware, or Microflight products.

PRODUCT INFORMATION

For all products, call our main sales lines at 877-4-SPRUCE. Our sales representatives will consult with other staff members or call the manufacturer of the product to get you the answer you need as quickly as possible. We are here to help!

SPECIAL ORDERS

Over the years, one of the services that our company offers that seems to be most appreciated by our customers is our willingness to research and provide quotations for special items. Other supply firms tend to discourage special requests due to the time and effort it takes to find these items, and request that customers order "catalog items" only. We have always taken a different approach and welcome requests for non-catalog items. Call or write and provide as much information as possible including make, model, serial number of aircraft and exact part number or product you need, plus your credit card number. Within 24 hours if at all possible, we will advise you of the price and delivery time on the item, at which time you can place your order if acceptable. Once an order is placed for a special order item, it cannot be cancelled or returned and must be paid in advance. If we cannot drop ship your special order, then freight charges from the factory to our warehouse will be added to your invoice. Our goal is to provide you with everything you need - if you do not find it in this catalog, let us know and we'll find it for you!

PRODUCT WARRANTY

In cooperation with the manufacturers we represent, Aircraft Spruce & Specialty Co. warrants for a period of one year (on most products) from the date of original purchase its products to be free from defects in material and workmanship. Aircraft Spruce & Specialty Co.'s obligation under this warranty is limited to repair or replacement of the purchased product only, and under no circumstances shall Aircraft Spruce & Specialty Co. be liable for any loss, damage, injury, cost of repair or consequential damages of any kind in connection with the sale, use or repair of any product purchased from Aircraft Spruce & Specialty Co. Products sold are subject to manufacturer's warranty policy. Defective merchandise or out of box failure of product is repaired or replaced at manufacturer's option. Avionics, electrical, instruments, or similar products that are defective are subject to manufacturer's warranty only, and will not be replaced immediately from Aircraft Spruce inventory.

WAIVER OF LIABILITY AND INDEMNIFICATION AGREEMENT

Inasmuch as Aircraft Spruce & Specialty Co. has no opportunity to supervise the manufacture, installation or maintenance of the parts supplied by it, nor any opportunity to participate in the design or manufacture of the various certificated and homebuilt aircraft in which its parts are utilized, the purchaser by placing an order and accepting said merchandise from Aircraft Spruce & Specialty Co. agrees that all materials purchased will be used solely at purchaser's risk and that purchaser will indemnify and hold Aircraft Spruce & Specialty Co., its owners and employees, free and harmless from all loss, liability or damage resulting from claims brought by any reason of any alleged failure or defect of any part or parts supplied by Aircraft Spruce & Specialty Co.

INTERNATIONAL CUSTOMERS

Aircraft Spruce is recognized as the leading source of materials for aircraft builders, owners and pilots around the world. Over the past 45 years we have developed a family of customers in every part of the globe. Our International order dept. is more than happy to assist you in placing and processing your order for international shipment. Please note the following guidelines for placing an international order.

You may place your order with any of our international representatives or directly with our USA, Corona facility. Correspondence should be sent in English or Spanish to expedite service.

Requests for quotation are processed within 72 hours, unless additional research is required on a product. All prices quoted and invoiced by Aircraft Spruce West are FOB Corona, CA and by Aircraft Spruce East are FOB, Peachtree City, GA. A quotation is processed as a proforma invoice for all overseas customers. A proforma invoice is not considered an order until funds are received to process the order. Actual freight charges may differ from a freight quote or estimate provided by a freight carrier.

First time orders are preferably received by fax or e-mail to insure correct notation of name and billing and shipping information. Please note the information on 8130 forms in the following paragraphs. If 8130 forms are required, we must be notified at the time the order is placed so that we may special order the documentation.

To economize on the shipping costs, International orders are generally shipped complete unless otherwise advised by the customer. We utilize DHL, UPS, Fed-Ex and Air Parcel Post for most international shipments. Shipments by DHL, UPS and Fed-Ex are highly recommended because of the excellent traceability of the shipments. Parcel post traces are very time consuming and unreliable. We cannot be responsible for shipments made by Parcel Post. Our international dept. also utilizes the services of many other air and sea carriers. Should the services of a freight forwarder be necessary we can work with one who is familiar with our service or with one of your choice to meet all of your shipment requirements. All freight, duty and customs charges are the responsibility of the customer.

HAZMAT SHIPMENTS – A fee of $50 is charged on all international shipments containing hazardous materials. This fee covers special packaging, documentation, and certification requirements that apply to hazmat orders shipping to customers outside the United States.

Preferred methods of payment are credit cards (American Express, Visa, Mastercard, Discover) and by bank transfer. There is an additional $20 service charge for bank transfers. When making a bank transfer please fax a copy of your transfer along with your order request to ensure accurate allocation of funds. Please note that if payment is made by bank transfer there is an approximate 7 day delay before funds are confirmed and allocated.

A complete listing of Aircraft Spruce international representatives can be found on our website. Always remember to furnish your complete communications information on your correspondence so that we may respond to your requests promptly. We welcome your orders and look forward to being part of your team during your entire project.

CERTIFICATE OF CONFORMANCE AND FORM 8130 (EXPORT)

Aircraft Spruce provides you with its own Certificate of Conformance for our products at no charge. This is noted on every invoice. Factory certification and test reports are available on some items and Form 8130 are available on FAA approved products. A cost of $100 per product is charged to secure these forms. Please inquire at time of order if test reports are available for the items you are ordering. If available, the forms must be requested at time of order and the product must be special-ordered from the factory with the forms. These forms cannot be furnished after you receive the product. Anticipate shipping delays if Form 8130 is requested. Do not order products using catalog part number if you require form 8130, as you will receive standard parts without the form. Simply describe the part and specifically request Form 8130. Due to delays and costs involved in furnishing these forms, we strongly suggest that you check to see if the Aircraft Spruce Certificate of Conformance will be acceptable in lieu of Form 8130.

AIRCRAFT SPRUCE GIFT CARDS

Do you want to give an aircraft builder or pilot a gift from Aircraft Spruce for a birthday, holiday, or another special occasion and don't know what to get? Let them decide. Give one of our sales representatives a call at (877) 4-SPRUCE and order an Aircraft Spruce Gift Card for any dollar amount you want. The cards are valid indefinitely and can be used toward the purchase of any products sold by Aircraft Spruce. These cards are very popular and are a gift that is sure to please any aviator. Available in any denomination. If selecting USPS First Class Mail, we'll ship any gift card only order prepaid within the United States. Gift Cards are valid at all Aircraft Spruce locations.

SHIPPING INFORMATION

UNITED PARCEL SERVICE (GROUND)

Unless otherwise specified, all shipments will be made by UPS (size and weight permitting).

Weights & Limits - Maximum weight per package for shipment to any destination served by UPS is 150 lbs. with no other weight restrictions applicable. If a shipment exceeds 80 lbs. a motor freight shipment is usually more economical. A UPS C.O.D. fee of $11.00 is charged for each C.O.D. parcel. Ground shipments larger than 1728 cubic inches and all air shipments will rate at the greater of actual or dimensional weight.

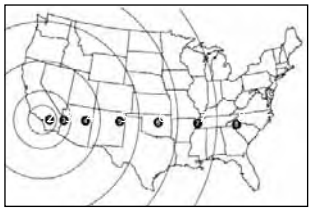
Maximum Size per Package - 130" in length and girth combined (once down and once around the parcel). Packages over 130" length & girth or over 108" long are rated at a minimum 90 lbs and assessed an additional charge of $55. Packages over 60" long are subject to an additional $8.00 handling fee. Charges subject to change by UPS and FedEx.

Territory Served - Regular UPS service (surface) available to all 48 states, parts of Hawaii and Alaska, and Canada. All points in Hawaii, Alaska, and Canada are served by UPS "Next Day Air" or "2nd Day Air". Flammable and corrosive material restricted. There is a $3.00 additional rate charge for residential shipments to rural zip codes. UPS Surface serves some points in Alaska, Hawaii, and Canadian Provinces of Alberta, British Columbia, Manitoba, Ontario, Quebec & Saskatchewan.

Insurance - Each parcel carries $100.00 insurance against loss or damage. Additional insurance coverage added as required per parcel. Maximum insurance allowable - $10,000 per package. A street address with zip code is required. C.O.D. shipments acceptable with money order or certified funds on first order. United Parcel Service will leave a parcel without signature if so authorized by the shipper. Orders of significant value will require a signature at time of delivery. If purchaser is willing to accept responsibility for delivery, ask that the instructions "OK to leave without signature" be added to the shipping label. However, these instructions will release Aircraft Spruce of liability for loss or damage.

Delivery Time - One to seven days depending on the zone and destination zipcode.

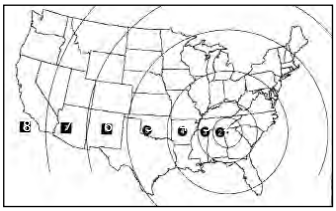
Shipment Of Hazardous Materials - Shipment of items such as dopes, primers, and many other liquid products require extensive, precise documentation and specially constructed cartons that comply with DOT regulations. Each flammable or hazardous product must be packed in a separate package and cannot be shipped with non-hazardous materials. In many cases, motor freight shipments may be more economical for multiple package orders of hazardous materials due to the fees charged by UPS. A hazardous shipping charge of $27.50 will be added to UPS Ground shipments, $37.50 will be added to Air Shipments. Some hazardous items in small volume can ship ORMD and the hazardous shipping charge will not apply. Hazardous items shipped overseas require special handling and must ship by freight service. Call for details and current pricing.



From Corona, CA

Method	Zone 2	Zone 4	Zone 6	Zone 8
UPS Red	$31.24	$72.61	$84.79	$91.98
UPS Next Day Air Saver	$27.77	$66.36	$80.48	$84.95
UPS Blue PM	$15.23	$22.42	$45.15	$50.56
Fed Ex Priority Overnight	$31.92	$72.03	$88.99	$93.98
Fed Ex Standard Overnight	$27.51	$64.00	$77.60	$81.95
Fed Ex Econo 2nd Day	$18.59	$22.68	$44.60	$50.03
USPS Priority Mail	$9.79	$10.84	$12.02	$14.42
UPS Ground	$10.29	$15.45	$23.60	$31.05

- Rates for comparison purposes only. Based on 10lb. package shipped to each listed zone.
- Rates do not include insurance, oversize, hazardous, COD etc. Subject to change without notice.



From Peachtree City, GA

UNITED PARCEL SERVICE (AIR)

Weight and Limits are the same as outlined for UPS Surface delivery to all areas served. See above for more details on shipment of flammables and other hazardous items.
Delivery Time - Three days (3rd Day Air) and two days from California (2nd Day Air) or next day (via Next Day Air).
Areas Served - Shaded states on map above, with limited service to some as noted.

FEDERAL EXPRESS

In addition to UPS, we also provide delivery via Federal Express Priority, Economy, and Ground service. Federal Express charges are competitive with UPS and the same weight, size, and hazardous limits will apply. Hazardous materials shipping by Fedex Express Air service are subject to a $100 dangerous goods charge. As an added advantage, Federal Express does offer Saturday delivery, and almost all deliveries are made before noon. Federal Express Home Delivery is a residential ground service with deliveries Tuesday through Saturday.

DHL COURIER SERVICE

Aircraft Spruce receives special shipping rates from DHL for international shipments, and these savings are passed along to our customers overseas. Specify DHL for the most economical and fastest shipment of your small package orders shipped overseas.

MOTOR FREIGHT

The charge for motor freight delivery is based on the commodity being transported, the weight of the shipment and the distance it will travel. The rate for a shipment of steel tubing, for instance, may be $5.00 Cwt. as compared to $15.00 Cwt. for foam. The steel tubing is a heavy commodity taking up a small space whereas the foam is very light but the volume is large and takes considerable space in the trailer. The rates reflect these factors in addition to the susceptibility to damage of the shipment. All truck shipments are insured for full value. It is good practice to include a phone number on the order which can be shown on the Bill of Lading. This enables the carrier personnel to advise of the arrival of the shipment and arrangements can be made for delivery. No C.O.D shipments for truck delivery. Consignee must inspect shipment on arrival and note any shortages or damage on freight bill to file claim for loss. Any claims for lost or damaged merchandise will be denied if the customer receives the shipment free and clear.

US POSTAL SERVICE

Priority Mail parcels may not exceed 70 lbs. or 108" in length and girth combined. We will utilize a Priority Mail Flat Rate Box if your items will fit in the box and the postage will cost less. Packages less than 13 ounces may ship First Class Mail. Maximum allowable insurance via Post is $400 per package. No shipments made without adequate insurance coverage. Packages destined for overseas will ship the cheaper of First Class or Priority Mail and must not exceed 44 lbs. (with exception to certain countries) or 72 inches in length and girth combined and must not be longer than 42". No hazardous materials or C.O.D. orders may be shipped by Post. Please provide adequate time for delivery. Claims for lost or damaged packages must be made within 60 days of shipment.

CANADA

What are my shipping options? From Canada (Brantford warehouse): Canada Post, UPS Canada, FedEx Canada, Purolator, or Can Par. Hazardous materials can only be shipped Purolator. From the U.S. (California or Georgia warehouse): Mail (USPS to border/delivery by Canada Post), *Customer will pay duties and taxes directly to Canada Post *For delivery duty paid via Canada Post, order must ship from Canada, UPS, FedEx. *Customer will choose their own broker for customs clearance.

AIRCRAFT KITS

COZY MARK IV

The Cozy MK IV is a high-performance, four-seat canard aircraft which is comfortable, efficient, and economical to build. It has a range of about 1,000 miles and a top speed of 200 mph. When constructed according to plans and operated within the approval C. G. range, the canard configuration makes it highly resistant to stalls or loss of position control. The MK IV features full dual control and two-axis trim. The composite construction is very strong, resistant to corrosion and fatigue, and offers better protection to the occupants than other types of construction. Aircraft Spruce acquired the Cozy design rights in January 2004 and is now the sole source for Cozy plans and info packs.

- Cozy Mark IV Plans with Newsletters on CD ..... P/N 01-00178 ..... $500.00
- Cozy Mark IV Info Pac ..... P/N 01-00566 ..... $16.95
- Cozy "M" Drawings* ..... P/N 01-00570 ..... $49.95
- Cozy Newsletters on CD ..... P/N 01-00569 ..... $20.00
- Cozy Owners Manual* ..... P/N 01-00565 ..... $6.25
- Cozy Mark IV DVD "Award Winning" ..... P/N 01-00982 ..... $14.95

* Can only be sold to a builder, must provide plans # to order.

FREE INSTRUCTIONAL DVD WITH PLANS

Building the Rutan Composites – This step-by-step instructional program features Burt Rutan and Mike Melvill proceeding through the complete foam-epoxy-fiberglass composite construction procedure as used on the VariEze, Long-EZ, Quickie, Q2, Dragonfly, Sea Hawk, and other composite aircraft. Also included is a formation flight by the Long-EZ, Defiant & VariViggen. 1hr, 36 mins ..... P/N 13-04809 ..... $26.95

COZY MKIV MODEL

This high quality model of the Cozy MKIV looks great in any office or home.

P/N 13-11321 ..... $150.00

COZY MATERIALS KITS

SECTION 1 KITS

	Part #	Price
Foam Kit	01-01410	$3,001.68
Fiberglass Kit	01-01415	$3,247.85
Wood Kit	01-01420	$164.34
Hardware Kit	01-01430	$244.83
Metal Kit	01-01425	$262.52
Misc. Mats	01-01440	$4,602.19
Tools Kit	01-01435	$508.85
Fuel Fittings	01-01431	$79.51
Epoxy Kit	01-38201	$515.00

SECTION II KITS

	Part #	Price
Bolts	01-01505	$36.35
Screws	01-01510	$34.37
Washers	01-01515	$21.57
Nuts	01-01520	$87.98
Nutplates	01-01525	$57.80
Rivets	01-01540	$35.73
Fittings	01-01535	$152.54
Foam	01-00297	$439.15
Expoxy	01-01545	$196.95
Metal	01-01530	$189.61
Misc	01-01560	$1,943.12
Fiberglass	01-00298	$413.50

CHAPTER KITS

	Part #	Price
Chapter 4 Fuselage Bulkhead	01-00256	$539.00
Chapter 5 Fuselage Sides	01-00257	$420.79
Chapter 6 Fuselage Assy	01-00259	$313.09
Chapter 7 Fuselage Exterior	01-00260	$214.55
Chapter 8 Headrest, Heatduct, Seatbelt	01-00261	$564.92
Chapter 9 Main Gear-Brake	01-00263	$2,354.28
Chapter 10 Canard Construction	01-00264	$711.33
Chapter 11 Elevators	01-00266	$64.99
Chapter 12 Canard Installation	01-00267	$3.27
Chapter 13 Nose Gear	01-00268	$1,706.24
Chapter 14 Center section Spar	01-00271	$671.33
Chapter 15 Firewall Accessories	01-00272	$286.41
Chapter 16 Control System	01-00273	$518.37
Chapter 17 Pitch-Roll-Trim	01-00275	$93.93
Chapter 18 Canopy	01-00277	$777.87
Chapter 19 Wings & Ailerons	01-00280	$2,941.05
Chapter 20 Winglets & Rudders	01-00282	$180.75
Chapter 21 Strake-Fuel-Baggage	01-00283	$1,168.90
Chapter 22 Electrical	01-00285	$1,381.00
Chapter 23 Engine-Prop Installation	01-00286	$1,634.10
Chapter 24 Covers Fairing	01-00291	$281.35
Chapter 25 Finishing	01-00292	$616.70

AIRCRAFT SPRUCE ADDS COZY BUILDER SUPPORT TEAM - Aircraft Spruce has contracted with Marc Zeitlin, and experienced builder, to provide technical builder support to Cozy builders who can contact Marc by email at marc_zeitlin@alum.mit.edu or by phone (978) 502-5251. In addition, Aircraft Spruce has contracted with Burrall Sanders of Free Flight Composites to have a Cozy aircraft on display and to answer builder questions at AirVenture, Sun N Fun, and other selected fly-ins. Burrall can be contacted by email at composite craftsman@freeflightcomposites.com or by phone at (719) 660-8650.

CHRISTAVIA MK-1/MK-2 & MK-4

Aircraft Spruce & Specialty Co. has acquired the design rights to the popular Christavia MK1, Christavia MK2, and Christavia MK4 homebuilt aircraft from the designer, Ron Mason of Elmwood Aviation in Canada. The Christavia was designed in 1982 as a mission field workhorse. Design requirements were short take-off and landing, small engine (low fuel consumption), low stall speed, good cruise speed and rate of climb, large cabin area, low maintenance and high safety factor. The Christavia is easy to fly, and the large cabin makes long flights very comfortable. Over 1000 sets of the plans have been sold for the MK1 (two place tandem), MK2 (two place side-by-side), and Christavia MK4 (four place). Aircraft Spruce has plans available for these aircraft at $225 per set as well as an information pack for $10. Complete materials packages for construction of the aircraft are available from Aircraft Spruce.

Christavia MK-1/MK-2 Info Pack P/N 01-00662 ..... FREE

CHRISTAVIA MK-1 KIT PRICE LIST

MK-1/MK-2 Info Pack	01-00662	FREE	Spruce Kit for MK-1	01-39810	$865.00
MK-1 Plans	01-00663	$375.00	Plywood Kit (MK-1)	01-39820	$499.40
MK-2 Supplement	01-00664	$57.50	MK-1 Alum. Sheet Kit	01-39830	$592.09
MK-2 Plans Complete	01-00692	$289.95	MK-1 4130 Tube Kit	01-39840	$3,971.09
MK-1 4130 Sheet Kit	01-39850	$291.69			
MK-1 Hardware Kit	01-39860	$136.54			
MISC Kit for MK-1	01-39870	$6,417.75			
MK-1 Spruce Kit	01-39880	$865.00			

CHRISTAVIA MK-4 KIT PRICE LIST

MK-4 Info Pack	01-00683	FREE	MK-4 Plans	01-00665	$275.00
MK-4 Misc. Kit	01-00675	$10,140.35	MK-4 4130 Sheet Kit	01-00676	$597.48
MK-4 Aluminum Kit	01-00678	$3,572.06	MK-4 Hardware Kit	01-00679	$291.55
MK-4 4130 Tube Kit	01-00674	$4,398.93			
MK-4 Plywood Kit	01-00677	$585.05			

AIRCRAFT KITS

STARDUSTER TOO SA 300

The Starduster Too was built to fill a need for a reasonably sized, 2-place, open sport biplane. Stability is good and the light wing loading makes slow landing and short-field operation outstanding. The main structure of the aircraft is built of 4130 steel tubing and sheet stock and has no machined fitting or other complicated bends. The wings have spruce spars and the ribs are made of 1/4" plywood. Construction of the plane has been kept as simple as possible. The Lycoming 0-360 (180 hp or 200 hp) is the best size engine for the aircraft.

Plans.....P/N 01-00424..... $250.00
Info Pack.....P/N 01-00596.....FREE

ACRODUSTER TOO SA 750

This two-place biplane is about 10% smaller than the Starduster Too. It is a very strong machine designed to +/-9 G. It is a high performance machine meant for minimum of 180 and up to 360 horsepower. The roll rate is spectacular with four ailerons and symmetrical wings.

Plans.....P/N 01-00427.....$125.00
Info Pack.....P/N 01-00443.....FREE

STARLET SA 500

A low-horsepower, single-place parasol, this is a fun machine. Easy to build and easy to fly, it is the best of both worlds. Engines in the 65 to 125 HP range work best. Excellent visibility and a pretty design keep your excitement high.

Plans.....P/N 01-00428.....$125.00
Info Pack.....P/N 01-00463.....FREE

V-STAR SA 900

This is an exciting, single place biplane. Rated for +/-6 G, this machine will keep you smiling. With stall speed approaching 35 mph and horsepower in the 75 to 85 range, fun flying is not slowed at the gas pump.

Plans.....P/N 01-00429 ..... $195.00
Info Pack.....P/N 01-00471 .....FREE

STARDUSTER ONE SA 100

This is the single place biplane designed by Lou Stolp back in 1964 that started it all. It as a very easy aircraft to fly, powered by engines in the 125 horsepower range - A fun machine! Constructed with a 4130 steel fuselage, wood spars and ribs, and covered with fabric. The Starduster One can only classified as "classic".

Plans.....P/N 01-00425.....$115.00

STARDUSTER KITS & COMPONENTS

PART NO	DESCRIPTION	PRICE
01-00436	STARDUSTER TOO AILERON FILLETS	$298.00
01-00437	STARDUSTER TOO COCKPIT COWLING	$344.95
01-00438	STARDUSTER TOO SA300 NOSE BOWL	$88.75
01-00439	STARDUSTER TOO TDECK W/ HDREST	$317.50
01-00440	STARDUSTER TOO WHL PNTS 600X6	$197.95
01-00978	STARDUSTER / ACRODUSTER DVD	$14.95
01-00485	STARDUSTER TDECK SA300 & SA750	$250.00
01-00491	O-235-N2C ENGINE 4 STARDUSTER	$27,310.00
01-00494	O-320-D1A ENGINE 4 STARDUSTER	$21,874.00
01-00495	IO-320-D1B ENGINE 4 STARDUSTER	$27,163.00
01-00496	O-360-A1A ENGINE 4 STARDUSTER	$24,981.00
01-00502	STARDUSTER AILER FILLET LEFT	$74.50
01-00503	STARDUSTER AILER FILLET RIGHT	$74.50
01-00560	STARDUSTER TOO COBANE STRUTS	$475.75
01-00561	STARDUSTER TOO I STRUTS	$670.89
02-08200	STARDUSTER SINGLE PLACE SPAR	$591.90
02-08300	STARDUSTER TOOSPAR KIT	$890.00
03-15700	STARDUSTER TOO 4130 TUBING KIT	$3,459.64
05-01081	STARDUSTER CANOPY CLR 2-PLACE	$595.00
05-01084	STARDUSTER TOO SA300 TAILWHEEL	$319.00
05-01086	STARDUSTER TLWHL CONN. SPRG KT	$60.75
05-01087	STARDUSTER LNDG GEAR MATER. KT	$657.74
05-01090	STARDUSTER TOO HORIZ TAIL ASSY	$788.38
05-01091	STARDUSTER TORQUE TUBE ASSY	$1,428.00
05-01092	STARDUSTER TOO FUSEL. MAT. KIT	$856.67
05-01096	STARDUSTER TOO MAT. KIT WINGS	$3,660.00
05-01103	STARDUSTER AILERON HINGE ASSY	$121.85
05-01104	STARDUSTER AILERN DRV HRN ASSY	$101.35
05-01112	STARDUSTER AILRN SLV STRT HRN	$140.65
05-01142	STARDUSTER TOO SA300 GRAY BUBL	$167.75
05-01211	STARDUSTER TOO TIE ROD SET W/T	$2,983.00
05-19700	FUEL TANK STARDUSTER I (MAIN)	$514.00
05-19710	FUEL TANK STARDUSTER I -INVERT	$613.00
05-19720	FUEL TANK STARDUSTER I (WING)	$437.95
05-19800	FUEL TANK STARDUSTER II (MAIN)	$$925.00
05-19810	FUEL TANK STARDUSTER II INVERT	$824.00
05-19820	FUEL TANK STARDUSTER II (WING TANK)	$870.00
06-00173	STARDUSTER TOO BUNGEE CORD	$23.25
06-00177	STARDUSTER TOO STEEL LNDG GEAR	$1,996.00
06-00179	STARDUSTER 500X5 WELD-ON AXLE	$9.70
06-03935	STARDUSTER II LANDING GEAR*	$1,795.00
08-00897	STARDUSTER TOO STD ENG MOUNT	$2,368.00
08-00898	STARDUSTER TOO SA300 FRWL GALV	$631.00
08-00901	STARDUSTER EXHAUST SYSTEM 6CYL	$630.00
08-00966	STARDUSTER TOO FIREWALL SS	$629.00
08-00967	STARDUSTER TOO FIREWALL GALV	$606.00
13-02417	STARDUSTER TECHNICAL TIPS	$35.00
13-02434	1 STARDUSTER PIN	$10.50
13-02436	STARDUSTER PATCH SMALL	$8.75
13-02676	STARDUSTER DECAL	$14.95
01-00468	SUPERSTARDUSTER BLDG THE GOLD6	$25.00
05-03381	VITON 75 41 X 2 MM O-RING	$1.45

*Note: This Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

ORDER PLANS, COMPLETE MATERIAL KITS AND REQUEST FREE KIT LISTS FOR ALL STARDUSTER AIRCRAFT DIRECT FROM AIRCRAFT SPRUCE.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRCRAFT KITS

WITTMAN TAILWIND

Introduced at the first EAA fly-in 1953, Tailwind was designed and built by legendary designer and air racer Steve Wittman. This high performance homebuilt is constructed with a steel tubing fuselage, wood wings, and fabric covering. It offers exceptional cruising speeds and is economical to operate and maintain. Aircraft Spruce acquired the rights to the Tailwind in January 1996 and is currently the exclusive distributor for plans and materials kits. Complete information package and materials list is available.

W-10 SPECIFICATIONS

Length: 19' 6" Wing Span: 24' Wing Area: 90 Sq. Ft.
Engine: Cont. 85, 90, 100 or 145 HP - Lyc. 108-160 HP
Cruising Speed (Vc): 150 to 190 MPH

Wittman Tailwind Info Pk/Kit Price List	P/N 01-10003	FREE
Wittman Tailwind Plans	P/N 01-10007	$195.00*
Wittman Olds V-8 Eng. Conversion Plans	P/N 01-10002	$39.95
Wittman V-Witt Racer Plans	P/N 01-10009	$95.00*
Wittman VW Prop Shaft extension	P/N 01-10006	$19.95

TAILWIND / V-WITT KITS

Tailwind 4130 Tube kit	P/N 03-15800	$2,361.23
Tailwind Complete Spruce Kit	P/N 02-06500	$962.00
Tailwind Spruce Spar Kit	P/N 02-08500	$396.00
Tailwind Ply Wood Kit	P/N 02-00122	$916.00
Tailwind Landing Gear	P/N 06-00139	$931.00
Tailwind Tailspring	P/N 06-00140	$118.95
V-Witt Spar Kit	P/N 02-08600	$337.00

*Ask about prefabricated parts available for the Tailwind

BABY GREAT LAKES, SUPER BABY LAKES, AND BUDDY BABY LAKES

BABY GREAT LAKES MATERIALS REQUIREMENTS

Kit #1	Spruce and Plywood Kit	P/N 02-03910	$1,023.41
	Complete Spruce Kit Only	P/N 02-03900	$782.51
	Spar Kit only	P/N 02-06700	$541.50
Kit #2	Wing Metals Package Includes finished parts requiring machining	P/N 01-10020	$1,307.00
Kit #3A	Wing Hardware Kit (Baby Great Lakes)	P/N 01-10030	$71.04
Kit #3B	Wing Hardware Kit (Super & Buddy)	P/N 01-10035	$66.84
Kit 4130	Steel Tubing and Sheet Kit Baby Great Lakes Kit-4A	P/N 03-14300	$1,461.47
	Super Baby Lakes Kit-4B	P/N 03-14310	$1,544.07
	Buddy BabyLakes Kit-4C	P/N 03-14320	$1,722.87
Kit #5	Landing Gear/Brakes Kit	P/N 01-10040	$3,402.31
Kit #6	Wing Alignment Materials Package	P/N 01-10050	$9.70
Kit #7	Fuel Tank and Installation Package	P/N 01-10060	$71.90
Kit #7A	Fuel tank Installation Kit	P/N 01-10070	$71.90
Kit #8	Flying Controls Materials Package	P/N 01-10080	$999.34
Kit #9	Fairings, Firewall, Instrument & Fuselage Panels w/Hardware	P/N 01-10090	$755.51
Kit #10	Poly - Fiber Materials Package	P/N 01-10095	$2,295.35
Baby Great Lakes Top Nose Cowl		P/N 05-02883	$349.00
Baby Great Lakes Bottom Nose Cowl		P/N 05-02884	$398.00
Seat for Buddy Great Lakes		P/N 05-02885	$250.00
Baby Great Lakes Fuel Tank (Standard 10 Gal.)		P/N 05-03058	$943.00
Baby Great Lakes Feul Tank(3" Longer 11 Gal.)		P/N 05-03059	$992.00

ASK ABOUT THE MANY PRE-FABRICATED PARTS AVAILABLE FOR BABY GREAT LAKES AIRCRAFT.

The Baby Great Lakes (one place) and Buddy Great Lakes (two place) aircraft are well proven designs which are easy to construct and fly, provide classic good looks, and are aerobatic. Construction is of wood and steel tubing and plans are well presented for the first time builder. Aircraft Spruce & Specialty Company acquired all rights to these designs in May, 1996 and now offers info packs, plans, raw materials kits, and pre-fabricated kits for these fine aircraft. Contact Aircraft Spruce for information on info packs and plans.

Baby Great Lakes Info Packs	P/N 01-10013	FREE
Plans for Baby Great Lakes	P/N 01-10010	$295.00
Plans for Super Baby Lakes	P/N 01-10011	$295.00
Plans for Buddy Baby Lakes	P/N 01-10012	$275.00

ACROLITE

Aircraft Spruce & Specialty is the exclusive supplier of plans and materials packages for Ron Wilson's aerobatic aircraft design, the single seat Acrolite. Complete construction material packages, 16 in total, for the Acrolite can be purchased for under $10,000.

The Rotax 912 engine is used in the prototype. The Acrolite can also be built with the Rotax 532-618.

Acrolites are designed to be a quick, easy build for beginners. The biplane cruises at 110 mph, has a range of 250 miles, takes off and lands in 500 feet and has a service ceiling of 12,000 feet. Empty weight is 495 lbs. and gross is 750. The airplane stands six feet tall, is 17' long and has 133 square feet of wing area. It is designed for sportsman aerobatics.

The Acrolite was chosen as one of two finalists in the Scratchbuild Design Contest which was sponsored by Aircraft Spruce & Specialty.

ACROLITE KITS

Info Pack,	P/N 01-20005	FREE
Plans,	P/N 01-20090	$300.00

Plans Kit includes Plans, Builders Manual, Maintenance Manual and Photo Set.

MATERIALS REQUIREMENTS

Kit #1	Aluminum Tube Kit,	P/N 01-20010	$380.04
Kit #2	4130 Tube Kit,	P/N 01-20015	$1,044.91
Kit #3	Aluminum Sheet and Bar Kit,	P/N 01-20020	$429.54
Kit #4	4130 Sheet and Bar Kit,	P/N 01-20025	$537.55
Kit #5	Aluminum Wing Kit,	P/N 01-20030	$1,774.73
Kit #6	Misc. Wood Kit,	P/N 01-20035	$168.88
Kit #7	Wood Wing Kit (Optional),	P/N 01-20040	$2,214.68
Kit #8	Fastener kit,	P/N 01-20045	$216.95
Kit #9	Control System Kit,	P/N 01-20050	$1,031.58
Kit #10	Fuel System Kit,	P/N 01-20055	$492.44
Kit #11	Misc Hardware Kit,	P/N 01-20060	$94.66
Kit #12	Wheels and Brakes ,	P/N 01-20065	$249.75
Kit #13	Misc. Accessories Kit,	P/N 01-20070	$381.13
Kit #14	Basic Instruments Kit,	P/N 01-20075	$1,410.70
Kit #15	Covering Kit,	P/N 01-20080	$951.23
Kit #16	Cowl Kit,	P/N 01-20085	$177.90

WITTMAN BUTTERCUP

We all want to fly fast and land slow. Sylvester "Steve" Wittman solved the problem. Wittman built two types of airplanes: Racing machines and Travel machines. The ancestors of these two blood lines were Chief Oshkosh and Buttercup.The Buttercup was built as a utility hauler, and there was only one made - in 1937. He flew it all over the western hemisphere, from Alaska to Bermuda, Florida to Oregon. The Buttercup almost made it into production (cancelled due to WWII) coming to the interest of Fairchild as a four-place project, called the 'Big X'. One plane was built for them by "Witt" - a 4-place, 6 cylinder, 130 HP Franklin powered prototype. The real genius of the Buttercup design is Wittman's claim of 38 - 40 mph (indicated) slow-flight speed and a near 150 mph top speed, and all on 85 hp! The high speed is vintage Wittman, the low speed is due to an ingenious flap-coupled, retracting lead edge design (seen in today's airliners). Earl Luce of LuceAir, Inc. has 'revived' the Buttercup, featured in the April, 2003 issue of Sport Aviation. Kits and fabricated assemblies for the Buttercup are available from Aircraft Spruce. For info and plans contact:

LuceAir • 35 Beverly Dr. • Brockport, NY 14420
Ph: (585) 637-5768 • www.luceair.com • e-mail: earl@luceair.com

Buttercup Retrack Lead Edge Kit	P/N 01-00474	$321.91
Buttercup Fuselage Sides Kit	P/N 01-00475	$441.60
Buttercup Fuselage Completion Kit	P/N 01-00476	$368.15
Eppenage Vert-Hort Stabilizer Kit	P/N 01-00477	$352.16
Buttercup Wing Wood Kit	P/N 01-00478	$268.32
Buttercup Wing Metal Kit	P/N 01-00479	$797.88
Buttercup Flaps & Ailerons Kit	P/N 01-00480	$280.65
Buttercup Lift Strut Kit	P/N 01-01055	$868.35
Buttercup Engine Mount-Land Gear	P/N 01-00482	$128.03
Buttercup Controls & Finishing	P/N 01-00483	$224.14
Buttercup Covering Kit	P/N 01-00571	$2,277.30

PAZMANY PL-9 STORK

Pazmany PL-2

Pazmany PL-4a Part of the LSA class.

The original German Luftwaffe Fieseler F-156 Storch was an outstanding WWII airplane, designed to take off and land in extremely short distances. The Storch had a take off ground roll of 131 feet and a landing roll of 36 feet with 13 miles per hour head wind.
The Pazmany PL-9 Stork is a 3/4 replica. With the same flying and handling characteristics as the original German Aircraft. The PL-9 Stork is a professionally designed STOL aircraft. It has a well proven aircraft configuration designed for a number of functions such as fish spotting, forest fire detection, farm work, missionary work etc. It features a welded chrome alloy steel tube fuselage and aluminum sheet metal/fabric covered wings and empenage. The PL-9 Stork has a cruise speed of 104mph with a standard Lyc.O-320/150 hp engine. Aircraft Spruce is a major supplier of materials for the PL-9 Stork.
For more information, info pack and plans, contact:

Pazmany Aircraft Corp.
P.O. Box 80051 • San Diego, CA 92138
Phone: (619) 224-7330 • Fax: (619) 224-7358
info@pazmany.com • www.pazmany.com

PAZMANY PLANS

PL-9 Plans	P/N 13-01505	$550.00
PL-2 Plans	P/N 13-01506	$425.00
PL-2 Homebuilding Profile	P/N 13-01509	$12.00
PL-4A Plans	P/N 13-01507	$375.00

(Now part of the LSA class)

SONEX

Unique in design, the Sonex is a basic and economical all metal two-place monoplane. Both taildragger and tri-gear versions are available. The Sonex is 17.5 ft. in length and has a 22 ft. wing span. It features easily removable wings for transport and storage. Designed to meet the needs of both European and domestic aviators, it can incorporate various lightweight contemporary engines of 80-120hp (under 200 lbs. firewall forward). Suggested engines include the 2180 VW and 80-120hp Jabiru engines. Outstanding performance is achieved through its clean aerodynamic shape and simple, lightweight construction.

SONEX KIT BUILDERS

Wing Hardware Kit	P/N 01-00005	$241.75
Sonex Tri-Gear Hardware Kit	P/N 01-00006	$49.47
Sonex Fuselage Hardware Kit	P/N 01-00008	$405.19
Sonex Tail Dragger Hardware Kit	P/N 01-00009	$16.24
Sonex Controls Hardware Kit	P/N 01-01082	$170.95
Quickbuild Sonex Wing Hardware Kit	P/N 01-01234	$132.23
Quickbuild Sonex Fuselage Hardware Kit	P/N 01-01235	$212.74

XENOS BUILDERS

Xenos Fusalage Hardware Kit	P/N 01-00601	$672.55
Xenos Tail Hardware Kit	P/N 01-01296	$57.71
Xenos Control Hardwared Kit	P/N 01-01297	$256.33
Xenos Wing Hardware Kit	P/N 01-01298	$585.13

WAIEX BUILDERS

Waiex Fuselage Hardware Kit	P/N 01-01130	$612.26
Waiex Control Hardware Kit	P/N 01-01131	$225.54
Waiex Wing Hardware Kit	P/N 01-01132	$214.95
Waiex Taildragger Hardware Kit	P/N 01-01165	$54.95

ONEX BUILDERS

Onex Airframe Hardware Kit	P/N 01-01192	$905.36
Onex Nosewheel Hardware Kit	P/N 01-01189	$48.27
Onex Solid Rivet Kit	P/N 01-01190	$25.60
Onex Tailwheel Hardware Kit	P/N 01-01191	$4.45
Quickbuild Onex Airframe Kit	P/N 01-01299	$569.20

More information on the Sonex can be obtained by contacting:
Sonex Ltd.
P.O. Box 2521 • Oshkosh, WI 54903-2521
Phone: (920)231-8297 • Fax: (920)426-8333
sales@sonexaircraft.com • www.sonexaircraft.com

LONG-EZ

The Long-EZ designed by Burt Rutan, is a homebuilt aircraft derived from the VariEze. Changes from the VariEze include a larger main wing with modified Eppler 1230 airfoil and less sweep, larger strakes containing more fuel and baggage storage, slightly wider cabin, and the ability to use a Lycoming 108 hp engine with no nose ballast. The aircraft is designed for fuel-efficient long-range flight and can fly for over ten hours and up to 1,600 miles (2,500 kilometers) on 52 gallons (200 liters) of fuel. The pilot sits in a semi-reclined seat and controls the Long-EZ by means of a side-stick controller situated on the right-hand console. In addition to having an airbrake on the underside, the twin tail's wing-tip rudders can be deflected outwards to act as auxiliary airbrakes. The aircraft will not stall in the manner of a conventional aircraft since, if the Long-EZ reaches too low a speed, the front (canard) wing will stall and lower the aircraft nose until speed is regained.

Kit lists and kit components are available upon request.
Please call or visit our website for more information.

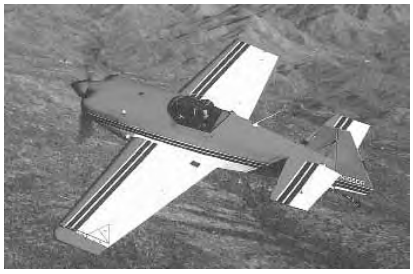
AIRCRAFT KITS

EVANS VP-1 VOLKSPLANE

Aircraft Spruce & Specialty is the exclusive distributor for VP-1 materials kits. The Volksplane was designed and prototyped by Bud Evans in 1968. The aircraft is inexpensive, easy to build, and fun to fly. The fuselage is all wood, with three bulkheads, four longerons, flat plywood and some vertical stiffners. Wings are wood frames covered with fabric. The only parts requiring welding are the control stick, strut ends and stabilizer horn. The only sheetmetal work is in the elevator trim tab. Over 1000 of these planes are flying. The aircraft is ideally suited for Volkswagen engines in the 1500 to 1834 cc range. Plans for the VP-1 are $59.00 and are available from Aircraft Spruce, P/N 13-11560. Aircraft Spruce can supply complete materials kits from stock. Free kit list on request.
Note: Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.
For further information on the Evans VP-1 contact:
Evans Aircraft
Box 744, La Jolla, CA 92037.

VP-1 Kits		Part No.	Price
Wood kit	(VPK-1)	01-00222	$698.60
Plywood kit	(VPK-2)	01-00223	$737.55
Metal kit	(VPK-5)	01-00224	$276.87
Hardware kit	(VPK-7)	01-00228	$513.01
Fabric kit	(VPK-8)	01-00221	$595.50
Fabric Coating kit	(VPK-9)	01-00226	$515.50
Cable Ass'y. kit	(VPK-10)	01-00227	$1,039.82
Wing Strut kit	(VPK-11)	01-00225	$474.35
Landing Gear 800 lb.	(VP-1 cable-braced)	06-00041	$755.00
Landing Gear 800 lb.	(VP-1 free standing)	06-04040	$1,125.00
Landing Gear 1100 lb	(VP-2 free standing)	06-00043	$1,295.00
VP-1 Plans and Handbook.	13-11560		$59.00

ONE DESIGN



Aircraft Spruce & Specialty Company offers a complete set of plans for the single seat aerobatic aircraft known as the One Design. Created by Dan Rihn as an economical answer for pilots wishing to fly Basic through Advanced aerobatics, the One Design features quick, easy construction and excellent performance. Wings for the One Design are all wood, the fuselage is steel truss, covered with aluminum sheet from the firewall to the rear of the cockpit. The turtle deck is also aluminum and the lower half of the aft fuselage is fabric covered. The tail is fabric covered. A one piece aluminum spring gear is used for the main wheels and a steerable tailwheel is used. Power for the One Design is obtained from a 0-360 and modified with an inverted oil system, high compression cylinders and fuel injection. Stressed for +/- 10 Gs, the One Design has a max. level speed of 184 mph, and cruises with a 75% power setting at 160 mph.
ONE DESIGN INFO PACK – P/N 01-06005 ..... FREE
ONE DESIGN PLANS - Complete construction drawings required to build the One Design aircraft from scratch or using pre-fabricated components. P/N 01-06010-C $376.95
Note: A signed License Agreement is required from the builder prior to shipment of plans. Include completed License Agreement with your payment.

ONE DESIGN RAW MATERIALS KITS

Kit Description	Part No.	Price
Aileron Kit	01-02305	$238.16
Engine Mount Kit	01-02310	$117.25
Elevator-Stabilizer Kit	01-02315	$210.67
Fin & Rudder Kit	01-02320	$125.55
Fuselage Kit	01-02325	$647.00
Wing Ribs Kit	01-02330	$246.84
Wing Spar & Skin Kit	01-02335	$2,447.49

For more information on the One Design contact:
Aircraft Spruce & Specialty Co.
225 Airport Circle, Corona, CA 92880-2527
Phone: (951) 372-9555 • Fax: (951) 372-0555

POBER (CORBEN) JUNIOR ACE TWO-PLACE

This is the famous aircraft that launched an industry as well as the Experimental Aircraft Association when plans for it were published in Popular Mechanics in the early 50's. It is lightweight, easy to build, fun to fly and requires minimal maintenance. It has been modified from the original Corben Baby Ace so that it can utilize aircraft engines. The fuselage has also been widened, the horizontal stabilizer was modified for easier construction and modern aircraft wheels and brakes are now called for. With nearly a 34' wingspan and Clark Y airfoil, the Pober Junior Ace, designed by EAA founding president Paul Poberezny, is docile in stall and landing patterns. Airframe is 4130 steel tubing, wings are all wood and the recommended powerplant is a Continental C-85. Empty weight of the Junior Ace is 750 pounds and gross capacity is 1,320 pounds. Free brochure available from Acro Sport. Plans can be ordered from Acro Sport, Inc., Box 462, Hales Corners, WI 53130. Order your Junior Ace materials kits form Aircraft Spruce, the approved materials supplier. Free kit list.

NESMITH COUGAR - TWO-PLACE

The Cougar, designed by Bob Nesmith dates back to the mid fifties. It shows an obvious influence by Steve Wittman's Tailwind, featuring wide short wings (20' 6") and a one-piece steel tube landing gear. The design was modified by Leonard Eaves for an EAA design contest in 1963, principally for the purpose of including folding wings. The aircraft can be towed to and from the airport on its own landing gear. With a redline speed of 195 mph, the Cougar maintains a brisk cruise of 120 to 165 mph, depending on choice of engine which can range form 65 hp to 125 hp. Landing approach is done at 80 mph and touchdown is around 70. The Cougar is an outstanding cross country machine that utilizes traditional steel tube fuselage, Sitka wings and fabric covering. Hundreds of copies of this versatile design have been completed. Cougar info packs are available for $10.50 and plans for $125.00 from Acro Sport, Inc., 462, Hales Corners, WI 53130.

VOLMER VJ-22 AMPHIBIAN

The Volmer VJ-22 "Sportsman" is a two-place, side by side, closed cabin, highwing monoplane, amphibious flying boat. The original Sportsman was completed December 1958. The rigid, corrosion proof hull is made of 1/16 inch and 3/32 inch aircraft mahogany plywood with 1/4 inch plywood at the step for maximum strength and covered with fiberglass for added protection. Numerous testing from calm water to five foot swells in the open sea have proven the design to be both extremely airworthy and seaworthy. Wings are wood spar and ribs, fabric covered. It takes off from water at sea level in about 20 seconds. The VJ-22 is poweed by a Continental C-85, starter and gen. It has a cruising speed 85 mph and stalls at 45 mph
Volmer Club of America - Attn: Robert Albrecht
536 Oak Ave., Bridge City, LA. 70094 - Ph: 504-436-6248
rjaflys@aol.com • www.volmeraircraft.com

VJ-22 Spruce Wing Kit	P/N 02-06000	$1,634.43
VJ-22 Sportsman Fuselage Kit	P/N 01-00984	$4,507.00

AIRCRAFT KITS

ACRO SPORT

Designed by Paul Poberezny as a successor to the EAA Biplane, the Acro Sport offers performance and excellent aerobatic capability in the Sportsman and intermediate categories. Purposely uncomplicated and straight forward, the Acro Sport design has been chosen by hundreds of schools for project Schoolflight programs. It has a wide landing gear which provides superb ground handling and easy landing qualities. Builders can choose powerplants ranging from 85 hp to 200 hp. Features steel tube fuselage, spruce wing and overall fabric covering which makes the project an easy one for first time builders with average skills. Maximum speed for this diminutive biplane is 180 mph, it cruises at 130 and stalls at 50. It has a rate of climb of 3,500 ft/min and a range of 350 miles. Info packs are $10.50 and complete plans are $125.00.

Order from: Acro Sport Inc., Box 462, Hales Corners, WI 53130.
Free kit list on request.Tech support for Acro Sport: Steve Nanweiler, 4819 Farmstead Ct., Wichita, KS 67220, (414) 529-2609
Note: Landing gear is NCNR, may not be cancelled or returned.
Lead times are always 6-8 weeks.

ACRO SPORT KITS

Complete Spruce Kit	$509.65	Washer Kit	$4.61
Spar Kit	$672.80	Metal Kit	$2,527.00
Rivet Kit	$4.75	Plywood Kit	$675.00
Misc. Hardware Kit	$1,893.00	Bolt Kit	$60.26
Nut Kit	$71.13	Miscellaneous Kit	$724.00
Landing Gear	$1,495.00		

Note: All additional items such as tie rods, instruments, plumbing, avionics, etc. can be found in this catalog.

POBER PIXIE - SINGLE SEAT

Few light airplanes offer builders the simplicity and payoff in fun flying that comes with the Pixie. Another superb design by founding president of the Experimental Aircraft Association, Paul Poberezny. Similar in many respects to the Heath Parasol, the Pixie is a modernization of the helmet and goggle days of the 1930's. The large wing and full span ailerons make for easy flying. With minimal taildragger experience, the Pixie is a breeze to handle on the ground. Landings are gentle affairs, visibility in cruise is outstanding and using it with skis adds another dimension of fun. The fuselage is 4130 steel tube, wings are Sitka spruce, covering is with Stits Poly-fiber. This is a beginner's project for construction, with performance that will satisfy any level of proficiency ...up to ATP! Plans are highly detailed and the cost level is low. Can be powered with a VW conversion or Continental A-65. It cruises at 83 mph, stalls at 30, and climbs at 500 fpm. The Pixie has a no-reserve range of 290 miles with and empty weight of 543 pounds, gross is 900.

An info pack is $10.50, plans are $1255.00 and both can be ordered from Acro Sport, Inc., Box 462, Hales Corners, WI 53130. Order your Pober Pixie materials kits form the approved supplier, Aircraft Spruce. Free kit list on request.

POBER PIXIE KITS

Pober Pixie Metals Kit	P/N 01-01135	$2,725.54
Pober Pixie Spruce & Plywood Kit	P/N 01-01136	$1,778.67
Pober Pixie Bolt, Washer, and Nut Kit	P/N 01-01137	$256.14
Pober Pixie Cable and Cable Hardware Kit	P/N 01-01138	$437.82
Pober Pixie Hardware Kit	P/N 01-01139	$1,187.48

ACRO SPORT II

This versatile biplane offers the outstanding opportunity to experience open cockpit flying with a friend. Excellent aerobatic trainer with responsive controls and docile straight and level flight characteristics. Powerplants can range from 108 hp to 200 hp. Cruise at 123 mph (180 hp), stall at 53 and max out at 152. The wide gear, large wheels and outstanding roll rate make the Acro Sport a dream on the ground, nimble in the air and a cinch for smooth landings. Designed by EAA founding president Paul Poberezny, the Acro II will accommodate pilots up to 6' 6" and 240 pounds. As with all Acro Sport projects, the fuselage is welded steel tube, wings are spruce and Stits Poly-fiber is used for covering. Information packages are available for $10.50 and full sets of plans run $125.00.

Order from: Acro Sport Inc., Box 462, Hales Corners, WI 53130.
Free kit list on request.Tech support for Acro Sport: Steve Nanweiler, 4819 Farmstead Ct., Wichita, KS 67220, (414) 529-2609

Note: Landing gear is NCNR, may not be cancelled or returned. Lead times are always 6-8 weeks.

ACRO SPORT II KITS

Metal Kit	$4,096.32	Clevis & Cotter Pin Kit	$4.40
Complete Spruce Kit	$1,227.75	Wood & Foam Kit	$2,103.21
Spar Kit	$711.00	Rod End Kit	$1,203.50
Bolt Kit	$71.65	Misc. Hardware Kit	$151.70
Nut & Nutplate Kit	$87.58	Miscellaneous Kit	$1,493.00
Washer & Rivet Kit	$21.40	Landing Gear	$1,596.00

Note: Additional items such as tie rods,plumbing,instruments,avionics, etc. can be found throughout this catalog.

POBER SUPER ACE - SINGLE SEAT

One of the many designs to come from the drawing board of EAA's founding President, Paul H. Poberezny, the Super Ace, is an ideal project for first time builders. It offers the excitement of open cockpit flying and excellent performance. With options for 85 hp to 150 hp, the Super Ace can meet a wide range of desires. The fuselage is a traditional 4130 steel tube frame that's covered with Stits Poly-fiber. The two-piece wing is made of Sitka spruce spars, ribs formed with 1/2" x 1/2" spruce caps and covering is again Stits Poly-fiber. Wing span is 27'-3 1/2", length is 18'5" and empty weight is 685 pounds with a useful load factor of 385 pounds. Using a C-85 on the prototype, cruise speed is 90 mph. Info packs on the Pober Super Ace are $8.00, plans are $125.00 and can be ordered through Acro Sport, Inc., Box 462, Hales Corners, WI 53130. Request a free brochure on the Super Ace from Acro Sport. Order your Pober Super Ace materials kits form Aircraft Spruce, the approved materials supplier. Free kit list on request.

For more information on the Poper Super Ace contact
Classic Sport Aircraft:
19426 Campbell Creek Dr., Springville, CA 93265
Phone/Fax: (559) 539-2755 • E-mail: s18mike@ocsnet.net

MEYER'S LITTLE TOOT

Designed by George Meyer, the Little Toot was first flown in 1957 and in the same year took the top award from mechanic Illustrated for "Outstanding Achievement in a Homebuilt Aircraft" at the 1957 EAA convention in Milwaukee. "Little Toot" also won the Paul H. Poberezny Award two years in a row. Year 1999 and 2000. Today the aircraft is still popular in appearance and functionality. Little Toot is a Single Seat, Sports Biplane. The fuselage is an all-metal structure with metal-covered steel tube construction from rear of cockpit forward, and metal monocoque rear of tubular fuselage cockpit forward section. Our Plans also provide you with an alternate Tube and Fabric fuselage construction. It features all wood wings, two 1" thick spar structure with fabric covering. Fabric covered all metal full-length ailerons on lower wings only. No Flaps. Little Tot has super strong structure stressed to 10- and 10+ G's. Power Plant options include 4-cylinder engines of up to 200 hp and six cylinders up to IO-540 250 horse power.

Full Size Plans	P/N 01-01049	$345.00
Plans - 11 x 17 Booklet	P/N 01-01050	$135.00

For more info and plans contact Tommy Meyer:
Website: www.littletootbiplane.com •
Email: tommy@littletootbiplane.com • Phone: 817-269-9292

AIRCRAFT KITS

AQUAJET-X

The new AQUAJET X, designed by Don James, and inspired by forthcoming warbirds F22 Raptor and X35 Joint Strike Fighter, provides the next level of flying excitement and realism between the AquaJet and a real airplane.

To provide vectored thrust via rudder pedals while creating the jet engine sound you can add an electric leaf blower (electric leaf blower is not included with the kit). Also there is a more sophisticated suspension system. Thus, the Aquajet X can climb at 30 deg., dive at 15 deg., bank, turn and spin up to three revolutions under full control of the pilot. A throttle actuates the lift cylinder - controlling takeoff, climb and descent so the stick can control pitch and landing flare.*Note: The Aqua Jet kit list includes all of the parts we can provide. Other items are required to build the Aqua Jet and many of them can be sourced at hardware stores and building centers.

For more information visit our website at www.aircraftspruce.com

Aquajet X Plans ..... P/N 01-00962 ..... $95.00
Aquajet X Materials Kit ..... P/N 01-00964 ..... $1,030.18

KR-1 AND KR-2

The KR-1 (single place) and KR-2 (two place) were designed in the early 1970's by the late Ken Rand. These popular aircraft combine composite and wood construction to produce fast, efficient aircraft that remain good sellers year after year.

Contact:
NV AERO AEROSPACE, LLC, 23052H Alicia Parkway #413,
Mission Viejo, CA 92692 • Phone: (800) 515-4811
Fax: (888) 829-3502 Email: info@nvaero.com

KR-1 Complete Spruce Kit ..... P/N 02-05400 ..... $836.86
KR-2 Complete Spruce Kit ..... P/N 02-05500 ..... $1,008.91
KR-2S Complete Spruce Kit ..... P/N 02-05510 ..... $1,079.72

SKYBOLT

The Skybolt is a 2 place fully aerobatic biplane which is also an excellent cross country aircraft. It is larger and easier to handle than smaller biplanes, and construction can be completed with hand tools by first time builders. Aircraft Spruce has provided materials for many Skybolt builders around the world for over 20 years.

Contact: Steen Aero Lab, 1451 Clearmont St NE,
Palm Bay, FL 32905 • Ph (321) 725-4160 • Fax (321) 725-3058

Complete Spruce Kit ..... P/N 02-05700 ..... $1,259.84
Spruce Spar Kit ..... P/N 02-07900 ..... $1,021.80
4130 Steel Kit ..... P/N 03-15500 ..... $2,937.37

OSPREY

The Osprey is a 2-place amphibian aircraft with fully retractable landing gear. The Osprey utilizes wood and steel construction and is ideal for the first time builder seeking well presented plans, ease of construction, and the versatility of an amphibian aircraft.

Complete Spruce Kit ..... P/N 02-05100 ..... $4,203.60
Osprey Clear Canopy ..... P/N 05-01162 ..... $513.00
Osprey Tinted Canopy ..... P/N 05-01163 ..... $425.00
Picture Decal Left Black ..... P/N 09-43813 ..... $8.99

Osprey Aircraft
3741 El Ricon Way
Sacramento, CA 95825
Info@ospreyaircraft.com • www.ospreyaircraft.com

Wing and Aileron spars are furnished to
net dimensions, not beveled.

DAISY MAE

Plans for Daisy Mae consist of 22 pages that are sized 18 by 24 with full size rib and former drawings and a hardware sheet that shows what parts you will need to fabricate while building the airplane. Each plan has a serial number and carries a copyright. Each page is dimensioned so that you will know the exact size of everything you need to build and has many 3 dimensional drawings and exploded views for ease of understanding. In addition, every plans purchase includes a CD loaded with over 280 photos taken during the construction process. You know what they say: A picture is worth a thousand words and these will make it perfectly clear how each part was fabricated. The CD is mailed directly from the plans owner following registration of the plans.

Specifications: Wing Span - 23', Empty Wt. - 780 lbs., Wing Area - 173', Normal Flying Wt. - 1100 lb., Fuselage Length - 18.5 ', Gross Wt. - 1300 lb., Fuselage Height - 7', Stall Speed - 40 Mph.

Daisy Mae Plans ..... P/N 01-01003 ..... $165.00
Daisy Mae Materials Kit ..... P/N 01-01160 ..... $4,053.41
The Making of the Daisy Mae Book ..... P/N 13-04086 ..... $34.95

GP-4

Designed by George Pereira, the GP-4 is a high performance two place side-by-side kit aircraft which is a fast, efficient cross country performer. Construction is primarily of wood and steel. The GP-4 is becoming the choice of many builders seeking a solid, traditionally constructed scratch built aircraft.

Complete Spruce Kit ..... P/N 02-25200 ..... $4,284.40
4130 Steel Kit ..... P/N 02-25210 ..... $853.64
Plywood Kit ..... P/N 02-00078 ..... $3,239.95

Osprey Aircraft
3741 El Ricon Way, Sacramento, CA 95825
info@ospreyaircraft.com
www.ospreyaircraft.com

BREEZY

Designed by Carl Unger the Breezy was first introduced in 1965, and hailed as one of the most distinctive and unusual homebuilt designs to ever attend an EAA Fly-in. Though there have been a lot other designs, particularly homebuilts, that embody the open cockpit which trademarks a Breezy, nothing can surpass it for the view and fresh air feeling. The original Breezy was designed and built to accept a set of PA-12 wings. For that reason, there are no wing drawings with the plans. It is possible to substitute PA-14, PA-18, or J-3,4, or 5 wings. It's also possible to order wing kits that replicate a J-3 wing. Power for the prototype, which now hangs in the EAA Aviation Museum in Oshkosh, WI, is a Continental C-90. The Breezy will carry a pilot and two passengers. Contact Aircraft Spruce for FREE Kit List.

Carl Unger, 8751 S. Kilbourn, Oak Lawn, IL 60456 PH: (708) 636-5774

Misc Hdwe kit ..... P/N 01-30010 ..... $659.35
Breezy Steel Kit ..... P/N 01-30020 ..... $3,111.17
Breezy Aluminum Kit ..... P/N 01-30030 ..... $206.48

AIRCRAFT KITS

BARRACUDA

The Barracuda, made entirely of spruce and plywood, is a fast, high performance, side by side two-place with retractable, tricycle gear. Rated for limited acrobatics, it has a 200 MPH cruise speed and 2,100 FPM rate of climb with a Lycoming 0540 Engine. Designed by RAF pilot, Geoff Siers, to fly like a fighter, power may vary from 200 to 300 horsepower. A stall speed of 62 makes landing easy. The comfortable 40 inch wide cockpit, with the sound deadening properties of wood, makes it a wonderful cross-country tourer. The structure is elegant and simple, like a model airplane, with no complex jigging. The Barrcuda won the "most outstanding new design" at Oshkosh. Aircraft Spruce & Specialty Co. is the distributor for materials kits and component parts. For further information and plans, contact

Siers Flight Systems, Inc
4706 N.E. First CT. Rentan, WA 98059
Phone (425) 478-3655

Plywood Kit.....P/N 01-00577.....$2,570.70
Spruce Spar Kit.....P/N 01-00617.....$868.75

PIETENPOL AIRCAMPER

The Original 1929 Model A Powered Light Plane - Designed by Bernard H Pietenpol to get the best possible performance from a Model A motor, to be easy to fly, and to get the most flying hours for the money invested. The Pietenpol Air Camper continues to be a successful design for the same reasons homebuilders were so fascinated by the design 85 years ago. It still has graceful styling, predictable flying qualities, and easy construction. Specifications: • Wing Span: 28' 2"ft. • Wing Chord: 5 ft. • Wing Surface: 140 sq ft Length 17 ft. 8 in. • Height Overall: 6 ft. 6 in. • Tread: 53 in. • Empty Weight: 625 lb. • Engine: Ford Model A, Corvair, A-65, other. • Useful Load: 456 lb. • Climb Light: Load over 500 ft. first min. • Climb Full: Load over 200 ft. first min. • Take-Off Speed: 60-75 mph. • High Speed: 90 mph. • Landing Speed: 35 mph. • Fuel Capacity: 10-18 gal. • Take-off Run: 150 ft. • Landing Run: 250 ft. • Weight of Wing: Complete 95 lbs. • Weight of Body: Complete 130 lbs. • Weight of Motor with Magneto: Complete 244 lbs. • Weight of Radiator: 21 lbs. • Weight of Propeller: 21 lbs. • Total Weight of Airplane with Water: 625 lbs. • Gross Load: 1080 lbs. • Load per Square Foot: 7.7 lbs.

Plans are available from:

B.H. Pietenpol And Sons Air Camper Aircraft L.L.C.
7203 Imperial Ave S Cottage Grove, MN 55016
Phone: (651) 459-3209 • email: Andrew.Pietenpol@gmail.com
http://community.pressenter.net/~apietenp

Description	Part No.	Price
Original Pietenpol Air Camper Plans	01-01307	$250.00
Pietenpol Steel Sheet Kit	01-01140	$387.95
Original Pietenpol Vertical Stab Kit	01-01301	$13.50
Original Pietenpol Horizantal Stab Kit	01-01302	$34.00
Original Pietenpol Rudder Kit	01-01303	$25.75
Original Pietenpol Wing Kit	01-01304	$1,097.00
Original Pietenpol Fuselage Kit	01-01305	$589.00
Original Pietenpol Elevator Kit	01-01306	$32.50

BAKENG DEUCE

The Bakeng Deuce is a two place parasol that is great for plain every day or weekend flying. It is of a basic aircraft design utilizing a steel tube fuselage. The structure is faired with plywood and aluminum formers which support spruce stingers. Wings are of basic wooden construction with solid spruce spars. The Deuce is a very easy aircraft to build with an excellent set of plans. It has a max. speed of 140 mph, cruises at 110-120 mph with a stall speed of 35-40 mph.

Bakeng Deuce Airplane Factory
9850 52nd Street, Kenosha, WI 53144
Ph: (262) 658-9286 • e-mail: acole@interaccess.com

Spruce Spar Kit.....P/N 02-06800.....$496.00

FLY BABY

This plane is a structurally simple and easy-to-fly airplane designed to the requirements of the Experimental aircraft Association for home construction and storage in a space 7' x 8' x 20', which is equivalent to the standard home garage. Great emphasis has been placed upon safe flight characteristics and good low speed performance for takeoff and landing at some sacrifice of high speed.

Fly Baby Spruce Kit.....P/N 01-00977.....$1,905.55
Fly Baby Plywood Kit.....P/N 01-00974.....$1,391.26
Fly Baby Metals Kit.....P/N 01-00976.....$960.52
Fly Baby Hardware Kit.....P/N 01-00975.....$2,303.89

Contact David R. Bowers:
13730 Burke Road, Los Altos Hills, CA 94022-3549
ph: (605) 948-3229 • Htpp://www.bowersflybaby.com

ZENITH STOL CH-750

The two-seat all-metal STOL CH 750 has been developed as an "off-airport" short take-off and landing kit aircraft to fulfill the demanding requirements of both sport pilots and first-time builders. Designer Chris Heintz has combined the capabilities and advantages of a bush-plane with the advantages of a modern design.

With form following function, the popular STOL CH 750 design can be built from complete kits, component "buy-as-you-build" (section) kits, or it can be built from plans-only (blueprints) with common aircraft materials and tools (available from Aircraft Spruce).

For detailed info on all Zenair™ kit aircraft designs contact:
Zenith Aircraft Company
Mexico Memorial Airport, PO Box 650
Mexico, Missouri, 65265-0650 USA.
Ph: (573) 581-9000 (Mon-Fri, 8-5 Central), Fax: 573-581-0011
info@zenithair.com • www.zenithair.com

ZENITH STOL CH-750

Complete plans including construction license for wood or aluminum wings. Also available are plans only for streamlined wood stabilizer and wood or aluminum wings.

Description	Part No.	Price
Complete Morin M85 Plans- Aluminum Wing	01-01211	$415.00
Complete Morin M85 Plans- Wood Wing	01-01212	$415.00
Morin M85 Aluminum Wing Plans Only	01-01213	$275.00
Morin M85 Wood Wing Plans Only	01-01214	$275.00
Morin M85 Streamlined Wood Stabilizer Plans	01-01215	$145.00
Morin M85 11"x17" Booklet Of Complete 143 Drawings	01-01216	$157.75
Morin M85 4130 Tubing Kit (fuse / Vert Stab / Rudder)	01-01236	$2,212.00
Morin M85 4130 Tubing Kit (horizontal Stab / Elevator)	01-01237	$362.84

COMPOSITE MATERIALS

INTRODUCTION

The use of composite materials in home built aircraft construction got its start back in 1970 when Ken Rand introduced his KR-1 and KR-2 kits. At the same time, a young designer named Burt Rutan was completing the design of his VariViggen which was awarded the Stan Dzik trophy for design contribution at Oshkosh in 1972. Although this aircraft featured some composite construction materials, it was fairly labor intensive to build and interest was modest. Taking the canard design concept a step further and simplifying construction through the use of the moldless composite technique, Burt educated thousands of builders and future designers through his plans, construction manuals, and many seminars and convinced aircraft enthusiasts worldwide that composites were indeed the future for aviation construction. Rutan Aircraft Factory followed the tremendous success of the VariEze kit program with plans for new designs such as the Long-EZ, Defiant, and Solitaire. At the same time, SCALED, Burt's new company specializing in design and prototype construction, was busy building proof-of concept aircraft such as the AD-1, Grizzly, and Beech Starship. Burt continues to operate SCALED today and remains active in designing and building the aircraft of tomorrow. We hope he will someday return to the homebuilt aircraft market, and arena that allowed him endless freedom to pursue aircraft design innovation.

During the 1980's many new designers entered the homebuilt aircraft market including Nat Puffer who introduced the popular Cozy, a side-by-side version of the Long-EZ. Aircraft Spruce & Specialty Co. became the distributor of Cozy kits as it had been for the Rutan designs since 1976. Hundreds of kits were shipped worldwide, and Aircraft Spruce grew as quickly as the composite movement. At the same time, Aircraft Spruce began supplying kits and materials to designers marketing their own new designs using the new "fast-build" pre-fabricated kit concept. This type of kit program was pioneered by Tom Jewett and Gene Sheehan of Quickie Aircraft and Tom Hamilton of Glasair fame. Many new designs followed, including Lance Niebauer's Lancair, Ken Wheeler's Express, the Cirrus and White Lightning. Aircraft Spruce has been a supplier of materials for all of these kit programs, and looks forward to working with the designers of new composite aircraft on their kit programs in the years to come. The design sophistication and ease of construction that are offered in composite aircraft kits today have provided a way for many aviation enthusiasts to build and fly higher performance aircraft at affordable prices. What an exciting time to be involved in sport aviation!

ADVANCED COMPOSITE FABRICS

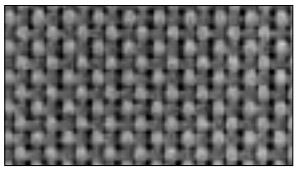
Advanced composite fabrics are those materials which have been used for a number of years in aerospace applications, replacing standard fiber-glass fabrics. Today's materials - Kevlar, graphite, S glass and ceramics - are now making the transition from aerospace to homebuilt aircraft. Kevlar is an organic fiber which is yellow in color and soft to touch. It is extremely strong and tough and about the lightest structural fabric on the market today. Kevlar is highly resistant to impact but it is rather difficult to work with for hand layup applications and its compressive strength is considered poor. Graphite fibers are created by extreme stretching and heating of rayon fibers to change their molecular structure. Graphite has very low density (weight/unit volume), is very stiff (high modulus) and very strong (high tensile). S glass uses a different chemical formulation from standard E glass fabrics, and is stronger, tougher and stiffer than E glass. One ply of S glass can replace several plies of E glass, which can result in a stronger and considerably lighter aircraft component. Ceramic fabrics are the latest innovation in advanced composites. These fabrics produce laminates approaching the qualities of S glass plus they can withstand temperatures of almost 3000° F. Ceramic cloth can produce a very lightweight and effective firewall laminate, although at this time the cost is high. These advanced composite materials are currently being used in the production of such items as aerospace components, high-performance boats and race cars, and many revolutionary homebuilt aircraft such as the Long-EZ, Solitaire, Sea Hawk and Q200. The performance of future homebuilt aircraft will most certainly be incredible with the availability of these innovative new composite materials.

	Best ←				→ Worst
Cost	E Glass	S Glass	Kevlar	Graphite	Ceramic
Weight (Density)	Kevlar	Graphite	S Glass	E Glass	Ceramic
Stiffness	Graphite	Kevlar	S Glass	Ceramic	E Glass
Heat	Ceramic	S Glass	E Glass	Kevlar	Graphite
Toughness	Kevlar	S Glass	E Glass	Ceramic	Graphite
Impact Resistance	Kevlar	S Glass	E Glass	Ceramic	Graphite

WHICH ONE DO YOU CHOOSE?

Often the choice of the materials to use for a laminate is difficult because of the required properties. One must consider the advantages of one material over another and its anticipated performance. S glass is about 30% stronger and 15% stiffer than E glass. It has 20-25% of the stiffness of graphite and is as strong, but it is also 30% heavier. S glass though, has only half the strength and stiffness of Kevlar and twice the weight. Kevlar on the other hand, is 40% stronger and 25% lighter than graphite but has only half the stiffness of graphite. Sometimes, blending different advanced composite fabrics in a laminate can achieve the proper balance of stiffness, strength and weight. Use the following six parameters listed here, from a best to a worst case, to help you decide which advanced composite fabric(s) is best for your application.

KEVLAR FABRIC STYLES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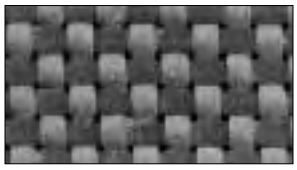
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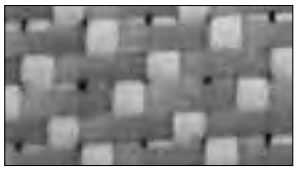
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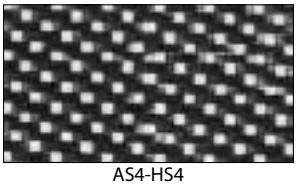
GRAPHITE FABRIC STYLES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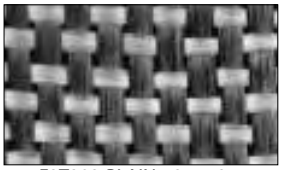
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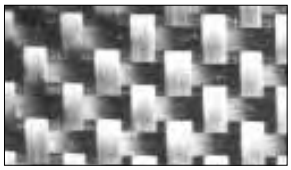
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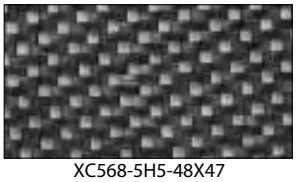
CERAMIC FABRIC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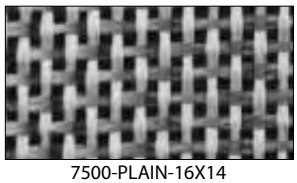
E-GLASS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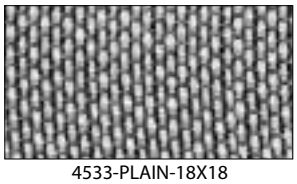
S-GLASS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HELPFUL HINTS AND PRECAUTIONS

It is important to have the entire work area including tables, foam, tools and working materials thoroughly warm before commencing. This may take 3-4 hours. An electric hair dryer may be used to warm local areas, being careful not to overheat the part or epoxy. When, due to cool temperatures, a part is slow to wet out, a few quick passes with a hair dryer will greatly speed the layup time. Do not use a hair dryer to heat a cup of epoxy. This can give local hot spots and ruin pot life.

The epoxy system components should be stored at room temperature. Never keep resin or hardeners in a cold place, even for long-term storage. If the resin appears to crystallize and settle out it should be returned to its normal state as soon as possible, even if prompt usage is not anticipated. Placing the container of resin in hot (160-190°F.) water for several hours will usually decrystallize it and return it to a clear state. Mild agitation will accelerate the process. Leaving the resin hot for 3-5 hours after it clears will reduce its susceptibility to recrystallize. Securely close containers after use.

Never attempt any layup below 70°F. since the higher viscosity of the resin will make it more difficult to wet out the cloth. Ideal working temperature is 85°F. Keep epoxy at 75° to 85°F. Never work outside in sunlight. It's acceptable to work in a shop with radiant heaters, as long as:

1.) The heat is diffused and the heat source does not become much hottr than the ambient.
2.) The heat is not provided by a source that generates particulates or aerosol hydrocarbons.

Never make a glass layup over a core that is not straight and smooth. The glass panel cannot take the loads if it has bumps or depressions in excess of the allowable values. A wrinkle, depression or bump in a layup which is greater than 1/16" high or low and which is more than 20% of the chord length or 20% of the spar chord is not acceptable and requires repair. A depression can usually be repaired by filling with flox to level and laying over the entire depression the amount of glass that is underneath, lapping outside the depression a distance equal to one inch per ply. Care should be taken not to lay up a depression or bump in the thick main spar caps. The transition of the spar caps into the wing fittings must be smooth and without joggles. These precautions apply only to the flying surfaces. The fuselage and fuel tanks can have relatively large depressions or bumps without affecting structural safety. Care should be taken in the finishing process not to sand through more than one ply on the structure.

Joining foam blocks - (1) Paint a coat of epoxy (no micro) on the joining surfaces. (2) Trowel a wedge of dry micro on the center of one surface. (3) Squeeze the joining surfaces together, wiggling them back and forth to obtain a thin micro joint less than 1/16" thick. It is desirable to have the micro about 3/8" low in the joint (not squeezed out). The low joint is filled with micro before glass is laid over the joint allowing a wet bond between the micro and the glass. If some does squeeze out, wipe the joint low with a mixing stick. Do not try to fill large voids with micro, as there is a possibility of exotherm damage. For a void larger than about 0.1", fill with a sliver of foam with micro on each side.

- A paper cutter is excellent for measuring and cutting the many little squares of glass cloth.
- Epoxy should be removed from metal tools or parts with acetone, MEK or soap and water before it cures.
- Micro slurry should not be applied to glass surfaces being bonded. This weakens the joint.
- Do not use Bondo on styrofoam, It has a polyester base which will dissolve the foam. Bondo will not attack urethane or PVC.

Precaution - Be sure layups are not dry, with air present (small flecks of white). Inspect thoroughly before leaving a wet layup. A cured layup that is too dry must be rejected.

Make sure that ample micro slurry is applied over the foam, particularly the urethane. Inadequate slurry allows air to remain under the first ply, decreasing laminate peel strength and surface durability.

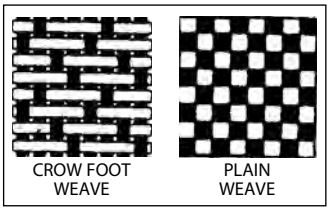
Hot wire cutting - A good method to use for judging wire temperatures is the appearance of the cut foam surface. A cratered or rutted surface indicates the wire is too hot. A very light "hair" of plastic strands on the surface is just right. Always adjust the temperature so that the wire will cut one inch in 4 to 6 seconds with light pressure.

Exotherm foam damage - Care must be taken to avoid heavy buildups of epoxy/micro down inside a joint that is insulated by foam, such as the assembly of the wing cores. The gap to be filled by micro when assembling any foam cores should not be thicker than 1/16". In filling a gap greater than 0.1", excessive weight is added and, more importantly, the large mass of epoxy/micro insulated by the foam can exotherm. Heat resulting from the exotherm can be as high as 450°F., which will melt away the foam locally and destroy the joint. White is the recommended color for composite aircraft since it absorbs very little of the sun's heat (10%) while a black surface will heat up tremendously (95% absorption). Trim colors in noncritical areas are acceptable. Any good quality automotive enamel, lacquer, acrylic or polyurethane is acceptable. A primer-surfacer with an ultra-violet radiation barrier is recommended as an undercoating.

Caution: Do not ever wipe paint thinners on any part of the structure. Minute pin holes in the epoxy/glass skin can allow the thinners to penetrate down to the styrofoam,which dissolves in thinners.

QUALITY CONTROL

One of the unique features of the glass-foam-glass composite construction technique is the ability to visually inspect the structure from the outside. The transparency of the glass/epoxy material makes it possible to see all the way through the skins and even through the spar caps. Defects in the layup take four basic forms: (1) resin lean areas, (2) delaminations, (3) wrinkles or bumps in the fibers and (4) damage due to sanding structure away in finishing. Resin lean areas are white in appearance due to incomplete wetting of the glass cloth with epoxy during layup. The presence of minor white (lean) areas up to about 2 inches in diameter is not cause for rejection of the piece. Delaminations in a new layup may be due to small air bubbles trapped between plies during the layup. Small delaminations or bubbles up to 2" diameter may be filled by drilling a small hole into the bubble and filling the void with epoxy. Major wrinkles or bumps along more than 2" of chord are cause for rejection in the wings, canard and winglet on the VE, particularity on the top. In most cases the rejected part can be repaired by following the basic rule: Remove the damaged area and fair back the area at a slope of at least one inch per ply with a sanding block in all directions. Count the number of plies removed while sanding and replace with same, plus one more ply of BID over the entire patch.


CROW FOOT WEAVE

PLAIN WEAVE

WEAVE PATTERNS

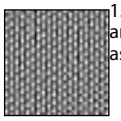
The weave pattern describes the manner in which the warp yarns and the filling yarns are interlaced in the fabric. Plain Weave consists of one warp end woven over and under one filling pick. Plain weave is generally characterized by fabric stability with minimum pliability except at low fabric counts.

Crowfoot Weaves are constructed with one warp end weaving over three and under one filling pick. It is characterized as being more pliable than either plain or basket weaves, having conformability to complex or compound curved surfaces and making possible the weaving of higher counts than plain or basket weaves.

COMPOSITE MATERIALS

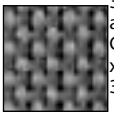
STANDARD E-GLASS FIBERGLASS CLOTH

Fiberglass cloth is exactly what the name says - glass. Fine fibers are spun from molten glass marbles, gathered into yarn and woven into a strong, supple glass fabric. It can be folded, rolled or draped, like any other loosely woven fabric - but it can be chemically transformed into solid sheets of tremendous strength. All the fiberglass fabrics listed below are volan treated for maximum strength and resistance to moisture and abrasion. They feature a weave that is tight enough for high strength, yet open enough for thorough wetting by resins.



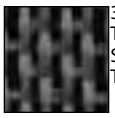
1.45 oz./sq. yd. Lightweight Industrial Cloth used in Osprey and other designs. Widely used by model builders, known as "Deck Cloth" , Thread Count 60 x 47.

#1080 (P/N 1080-50) 50" Width.....$6.60 yd



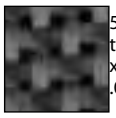
3.16 oz./sq. yd. Lightweight Industrial Cloth with aerospace applications. Excellent for model building. Only .004" thick. Crowfoot weave, which contours nicely. Thread Count 60 x 58. Breaking Strength 125 x 120 lb./in. Finished Weight 3.08 oz./sq. yd.

#120 (P/N 120-38) 38" Width.....$7.65 yd



3.74 oz./sq. yd. Light weight Boat or Tooling Cloth. Tight plain weave. Thread Count 24 x 22. Breaking Strength. 160 x 135 lb./in. Finished Weight 3.60 oz./sq. yd. Thickness .0055"

#1522 (P/N 1522-50) 50" Width.....$5.80 yd



5.79 oz./sq. yd. Lightweight Boat Cloth. Flat weave, not twisted. Thread Count 18 x 18. Breaking Strength 250 x 225 lb./in. Finished Weight 5.85 oz./sq. yd. Thickness .010".

#3733 (P/N 3733-60) 60" Width.....$6.35 yd

5.85 oz./sq. yd. Lightweight Boat or Tooling Cloth. Plain Weave. Thread Count 18 x 18. Breaking Strength 250 x 250 lb./in. Finished Weight 5.64 oz./sq. yd. Thickness .009" as used on KR Aircraft.

#7533 (P/N 7533-60) 60" /Width .....$7.90 yd

8.5 oz./sq. yd. Lightweight boat or tooling cloth. Threads per inch: 18L x 18W. Used in Osprey aircraft and other homebuilts.

#7520 (P/N 7520-50) 50" width .....$9.50 yd

8.95 oz/yd^2 Medium Weight Standard Industrial Cloth. 8 Harness Satin. Thread Count 57 x 54. Breaking Strength 350 x 330 lb./in. Finished Weight 8.95 oz./yd^2 Thickness .009 mils. Sold by the yard.

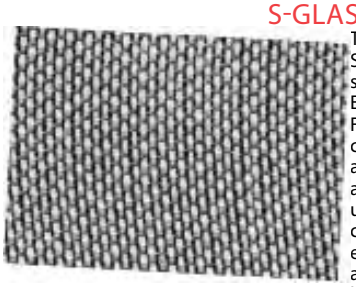
#7781 50"" Width (P/N 7781-50) .....$8.50 yd

#7781 60" Width (P/N 7781-60).....$9.75 yd

9.66 oz./sq. yd. Heavy Weight Boat or Tooling Cloth. Plain Weave. Thread Count 16 x 14. Breaking Strength 450 x 410 lb./in. Finished Weight 9.40 oz./sq. yd. Thickness .014".

#7500 (P/N 7500-60) 60" Width.....$9.50 yd

S-GLASS



The chemical formulation of S-glass differs from that of standard E-glass. Examples of E-glass are found in the Standard Fiberglass Cloth section of this catalog. S-glass is 30% stronger and 15% stiffer than E-glass and retains these properties up to 1500° F. S-glass is also considerably tougher than an equivalent E-glass. Other styles are available on request. Sold by the yard.

Style	Part No.	Weight oz./ Sq.Yd.	Width	Thick-ness	W x F	Weave	Price Per Lineal Yd.
4533	4533-60	5.8	60"	.009"	18 x 18	Plain	$16.50

GLASS MAT

100% Fiberglass in a non-woven state. It is used for bulk "build-up" in molding and fabricating components. Also useful for filling holes and badly damaged parts. 1.5 Oz. Weight. 38" Width.

P/N 01-06500..... $2.84/Yd

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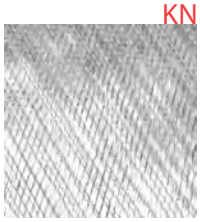
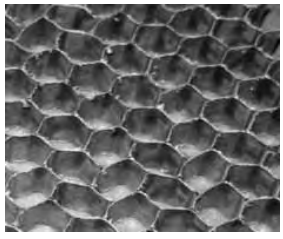
KNITTED E-GLASS FABRIC



Knitted fabrics are a relatively new format in composites. The performance of the glass is greatly enhanced by removing the interstices of the woven fabric and the crimped condition. E-glass in woven goods normally has 22,000 psi tensile strength. Layered nonwoven goods give 27,000 psi which is about a 20% improvement. Knitted glass offers greater ease of fabric orientation and saves time over multi-layered wet lay-ups.

Part No.	Weight/sq yd	Width	Ply Thickness	Price/yd
Biaxial - Double Bias +/-45°				
01-00640	17.6 oz	50"	17.0 mm	$7.65
Uni-Directional				
01-00650	13.4 oz.	50"	.021 mm	$5.99



NOMEX HONEYCOMB

AHN 7800 is an Commercial Grade Nomex honeycomb particularly suited for use where resistance to corrosive attack and moisture are important. This material exhibits good strength characteristics and is fire resistant. It is available in a variety of cell sizes and densities to suit most purposes. Typical applications include lightweight non-structural bulkheads for ships, joiner panels, shelters, antennas, and auto body panels. This material is not intended for aircraft or aerospace applications. This material also exhibits good thermal insulation properties and also has good dielectric properties. This honeycomb is easily machined, formed, and shaped and well suited to adhesive bonding.

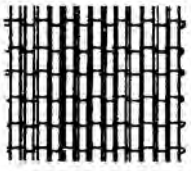
Description	Part No.	Price
Honeycomb 1/8" Thick, 1/8" Cell 4' x 8'	01-00487	$189.95
Honeycomb 1/8" Thick, 1/8" Cell 4' x 4'	01-00489	$94.50
Honeycomb 1/4" Thick, 1/8" Cell	01-01052	$292.95

COMPOSITE MATERIALS

RUTAN FIBERGLASS CLOTHS

The most basic structural material in building a composite aircraft is glass cloth. The use of glass in aircraft structures, particularly structural sandwich composites, is a recent development. Glass cloth is available commercially in hundreds of different weights, weaves, strengths and working properties. Very few of these, however, are compatible with aircraft requirements for high strength and light weight. Even fewer are suitable for the hand-layup techniques developed by Burt Rutan for the homebuilder. The glass cloth featured here has been specifically selected for the optimum combination of workability, strength and weight. Two types of glass cloth, a bi-directional cloth (RA7725BID) and a uni-directional cloth(RA7715 UND) are used. BID cloth has half of the fibers woven parallel to the selvage edge of the cloth and the other half at right angles to the selvage, giving the cloth the same strength in both directions. UND cloth has 95% of the glass fibers woven parallel to the selvage, giving exceptional strength in that direction and very little at right angles to it. BID is generally used for pieces which are cut at a 45° angle to the selvage, a bias cut, which enables the builder to lay BID into contours with very little effort and provides the needed shear and torsion stiffness for flying surfaces. UND is used in areas where the primary loads are in one direction, such as wing skins and spar caps. Multiple layers of glass cloth are laminated together to form the aircraft structure. Each layer of cloth is called a "ply".

UNIDIRECTIONAL P/N RA7715
7 Oz. 38" Width Threads per inch:
80L x 18W $8.90 Lineal Yd.



Selvage Edge

Small Cross Fibers

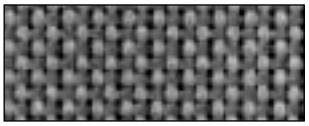
Major Fiber Bundles

Selvage Edge

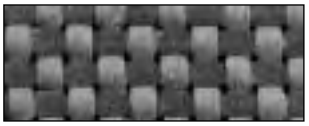
BIDIRECTIONAL P/N RA7725
8.8 Oz. 38" Width Threads/inch:
54L x 48W $7.85 Lineal Yd.

Quantity Discount: 15% on 500 Yds or more. Yardage must be on one fabric for discount, not combined. Discount on larger quantities quoted on request

BIDIRECTIONAL WOVEN KEVLAR



STYLE 120



STYLE 281

STYLE 285

"Kevlar" 49 aramid fiber was introduced commercially in 1972 and is the Du Pont registered trademark for its new high strength, high modulus organic fiber. It combines high tensile strength (43,000 PSI) and high modulus (19 million PSI) with light weight and toughness superior to other reinforcing fibers for plastics. It is available in yarns and rovings which meet all FAA requirements for flammability. It shows no degradation in jet fuel, lubricating oils, water, salt water or high humidity. At cryogenic temperatures (-320°F.) performance is excellent with essentially no embrittlement or degradation of fiber properties. Kevlar 49 can offer both a significant weight saving and improved stiffness versus glass in addition to superior vibration damping and good impact resistance. A kayak made with Kevlar 49, for example, weighs about 18 pounds while the weight of a comparable boat made with glass would be over 30 pounds. The advantages over glass in small aircraft are similar - weight savings and improved impact resistance. Kevlar 49 is used in a number of parts on the Lockheed L-1011 because of weight savings of up to 30% compared to similar parts made of glass. One unusual benefit of Kevlar is its "quietness". A cowling made of Kevlar will be quieter and less sensitive to engine vibrations than its glass or graphite counterpart.

Although all of the processes used in combining resins with glass fiber are adaptable to Kevlar 49 with little or no modification. The vinyl estertype system is compatible, but the use of polyesters is not recommended because of poor bonding with Kevlar. The epoxy resin systems featured in this catalog are compatible with Kevlar 49 and have good wetting characteristics.

Kevlar 49 is stocked in three different fabric styles. Kevlar #120 is a very lightweight fabric, while #281 and #285 are identical except for the weaving pattern. Other weights and weaves of Kevlar are available on a special order basis. Be sure to specify the Kevlar style when ordering.

Style	Part No.	Oz./ Sq.Yd	Weight Width	Thickness	W x F	Weave	Breaking Strength Lbs/Inch		Price Per Lineal Yd
							Warp	Fill	
120	01-38100	1.8	38"	.0035"	34 x 34	Plain	260	250	$26.85
281	281-38	5.0	38"	.010"	17 x 17	Plain	625	650	$23.75
285	285-38	5.0	38"	.010"	17 x 17	Crow	630	650	$23.65

Quantity Discount: 10% on 25-50 Yds. %; 15% on 50-100 Yds.; 20% on over 100 Yds.

ARAMID FABRIC - Aramid Fabric (Twaron, Style 285): 38", 5 ounces. Equivalent to 285 Kevlar Fabric. Sold by the yard.
P/N 01-01159 ..... $15.95

UNIDIRECTIONAL KEVLAR

KS-400 is a unique unidirectional reinforcing material combining the benefits of Kevlar 49 with Owens-Corning Fiberglass S-2 Glass. Designed for use in laminates which must have high modulus or stiffness and tensile strength combined with low weight or density. Specifically constructed to enhance properties of wet-out behavior, bondability and impact strength in a hand laid-up composite. As compared with woven fabrics of pure Kevlar, KS-400 should produce laminates with better fiber-resin ratios and superior stiffness. The integrity of KS-400 is maintained through very fine, adhesive coated Dacron fill yarns that are bonded to, but not interwoven with, the unidirectional fibers. Only vinyl esters or epoxies should be used as impregnating resins. The presence of the S-2 Glass enables the fabricator to determine visually when the material is properly wet out. Resin bond is far superior to the glass than to the Kevlar. This means increased resistance to delamination. Also the presence of the S-2 Glass even in such a relatively small amount increases the impact strength of the laminate significantly. In application, it is important that the fabricator does not confuse the appearance of the cross-direction adhesive binder with air bubbles. The impregnating resin will soften this adhesive and it will flow slightly. The adhesive shows up as milky areas on both sides of the fabric within the finished laminate. A gel coat or paint covers these areas effectively. 12" Wide ..... P/N 01-00340 ..... $4.55 Ft

10% Discount on 50 ft. (4 lbs) • 20% Discount on full roll, 300 ft. (24 lbs)

PRECISION SCISSORS

Straight-edge blades easily slide through the fabric and are sharpened to the tip for smaller or appliqué cuts. Grabs the fabric and cuts cleanly, with no material folding over the blades - even when cutting left-handed. Blades fully extend into the handles for durability and better cutting stability and pressure distribution. Exceptional accuracy and retains smooth blade movement, even in heavy-use environments. Straight blades made of stainless steel (Blades are not serrated). Good for cutting stitchwork, thread, cloth, leather, fabrics, films, sign and graphics material, vehicle wraps, and more..... P/N 01-01186 ..... $18.95

INDUSTRIAL FABRIC SHEARS

Wiss No. 20W heavy-duty shears, ideal for cutting fiberglass cloth and all fabrics. Hot drop-forged steel.

Right Hand Shears ..... P/N 01-00397 ..... $28.60
Left Hand Shears ..... P/N 01-00398 ..... $27.95

OFFSET KEVLAR CUTTING SHEARS

Although Kevlar has many advantages over conventional fiberglass weaves, it is very difficult to cut. Special scissors have been developed to facilitate cutting. These scissors have a wear resistant coating which is metallurgically bonded to the steel substrate. The coating will not chip or peel off and can be sharpened. Model WR-10E-4 Shears. P/N 01-00341 ..... $78.50

FEATHERWEIGHT SCISSORS - Lightweight, durable, and reliable GINGHER® Scissors are lightweight, extremely sharp and comfortable. These 2-1/2 oz. scissors are perfect for use during the lay-up for a variety of purposes and can be soaked in acetone for easy clean up. We recommend saving one pair for only cutting Kevlar® and keeping a second pair for general use. P/N 01-00342 ..... $44.65

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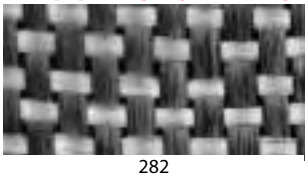
Prices Subject to Change Without Notice

BIDIRECTIONAL WOVEN CARBON GRAPHITE



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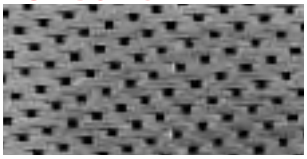


584

Woven graphite is a fabric introduced in recent years which has become an excellent alternative to fiberglass and Kevlar - only mils thick with great strength. In addition to its great strength, graphite fabric also has very low density and is very stiff. Although it is quite costly, the material saving is appreciable since only one course of graphite is required for 3 or 4 of fiberglass. It cuts considerably easier than Kevlar. Graphite The excellent qualities of the graphite fabric itself give it an immediate waiting market in the aircraft building field.

Graphite fabric is stocked in the three different styles shown below. Other weights and weaves of graphite are available on a special order basis. Be sure to specify the graphite style when ordering. These carbon graphite cloths are not pre-preg fabrics.

* Warning folding for shipment can damage the filaments in the fabric. Folding will be done at customers risk and request only.

CARBON FIBER

Style	Part No.	Weight Oz./Sq Yd.	Width	Thick-ness	W x F	Weave	Breaking Strength		Price /yd.
282	01-00971	5.8	50″	.007″	12.5x12.5	Plain	300	300	$29.50
282	01-28260	5.8	60″	.007″	12.5x12.5	Plain	300	300	$32.50

TWILL 2 X 2 WEAVE

Style	Part No.	Weight Oz./Sq Yd.	W	Thick-ness	W x F	Weave	Breaking Strength		Price /yd.
284	01-00602	5.7	50"	.007	12X12	2/2 Twill	n/a	n/a	$29.50
284	01-01232	5.8	60″	.007	12X12	2/2 Twill	n/a	n/a	$32.75
RGP375-2T	01-01230	11.0	50″	.007	12X12	2/2 Twill	n/a	n/a	$49.50

8HS WEAVE

Style	Part No.	Weight Oz./Sq Yd.	W	Thick-ness	W x F	Weave	Break-ing Strength		Price /yd.
584*	01-00626	11	42″	.013″	24x24	8HS	650	650	$89.65
RPG390-5H	01-01231	11..5	50″	.013	24x24	5HS	650	650	$49.50

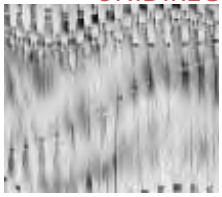
* Fiberglass tracers, which are clear when wet out.
** Fiberglass tracers, which are yellow when wet out.

STANDARD E-GLASS & FIBERGLASS TAPES

Tapes are woven from 8.7 oz./sq. yd. fiber-glass cloth, .012″ thick, into narrow widths with non-raveling selvage. Perfect for glassing seams, corners, edges fan for repair jobs. Sold in 50 yd. rolls.

1″ Width 26 Warp, 17 Fill ..... P/N 01-06610 ..... Roll $16.50
1-1/2″ Width 32 Warp, 17 Fill ..... P/N 01-06615 ..... Roll $16.85
2″ Width 40 Warp, 17 Fill ..... P/N 01-06600 ..... Roll $22.90
3″ Width 58 Warp, 17 Fill ..... P/N 01-06700 ..... Roll $29.85
4″ Width 76 Warp, 17 Fill ..... P/N 01-06705 ..... Roll $37.65
6″ Width 106 Warp, 17 Fill ..... P/N 01-06710 ..... Roll $57.75
12″ Width 218 Warp, 17 Fill ..... P/N 01-06720 ..... Roll $106.75

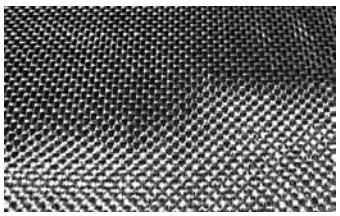
UNIDIRECTIONAL FIBERGLASS TAPE



This is a fibrous glass reinforcement designed to furnish exceptionally high directional strength. Manufactured from parallel strands of glass roving which are held together by a fine woven cross thread. The placement of the cross thread is such that the parallel rovings do not wander or have a tendency to cross over each other. This 100% unidirectional tape can be used instead of unidirectional fabric for spar caps, wings and elevators. Contours well and cuts building time consid-erably. Wt. 22 oz./sq. yd., 0.025″ thick. May be used with either polyester or epoxy systems. Used on Polliwagen. Long-EZ, Cozy. Adventure and applicable to all composites.

3″ Wide ..... P/N 01-06800 ..... $1.95 Yd.

UNIDIRECTIONAL CARBON 175



Construction is such that the fibers are oriented in a straight or linear manner with no twist and are able to be maintained in that condition while being impregnat-ed by hand. The fabric is formed from rovings or "tows" of fibers similar to that used in making woven fabric. These fibers are locked into position by very fine fill (or cross machine direction) fibers.

For hand lay-ups, resin may be applied by spray, brush, or by pouring action. A short napped paint roller is recommended for spreading the resin. Excess resin should always be rolled out in a direction parallel to the graphite fibers. Satisfactory for use with epoxies, polyesters, vinyl esters, and other resins. Care and cleanliness should be practiced when working with Graphite materials. Unattached graphite fibers are easily airborne. A filter mask should be worn when cutting and fabricating. Itching and irritation caused by broken filaments becoming embedded in the skin can result from filament breakage during handling. Sold by the yard Style: 715. Weight: 5.37 oz./sq. yd. Width: 53.5 in. Thickness: 6.69 mils.

**Warning folding for shipment can damage the filaments in the fabric. Folding will be done at customer's risk and request only

P/N 09-04023 ..... $45.95

GRAPHITE FIBER TAPES

- Tensile Strength – 54,000 PSI/in. width
- Weight – 0.033 Lb./Sq.Ft.
- Thickness – 0.012″ Laminated

12″ Wide ..... P/N 01-06300 ..... $4.35 /Foot

15% Discount on 12″W x 50′ Roll & 25% Discount on 12″W x 300′ Roll

UNIDIRECTIONAL CARBON TAPES

These carbon fiber tapes are used to add stiffness and tensile strength in one direction without adding significant thickness or weight. These West System tapes have 12 carbon fiber bundles per inch of tape width. The bundles are held together with a polyester fill thread making the tape easy to handle. These tapes are compatible with epoxies but not with vinlyester or poly-ester resins. #702 tape is 1.5″ wide and #703 tape is 3″ wide.

Style No.	Width (in.)	Length	Part No.	Price/.roll
702	1.5″	12 ft.roll	01-00238	$55.30
702	1.5″	50 ft.roll	01-00239	$145.80
703	3″	12 ft.roll	01-00240	$70.75
703	3″	50 ft.roll	01-00241	$190.75

CARBON FIBER TUBING

Aircraft Spruce offers structural tubing and structural torsion tubing, engineered and built to meet your exact specifications and tolerances. Structural Tortion Tubing, in continuous lengths up to 40′, is manufactured with the computer-controlled, fully-automated Helical Winding Process. We offer a broad array of Fiber Options and tubing wall thickness and diameter is determined on a case-by-case basis to suit your application. Special Order Sold in 10 ft. lengths only (can cut for UPS shipment).

* The image shows two types of finish on this product. The standing tube is sanded and painted with a gloss finish. This is available for an additional cost of $249.00. The tube lying on its side is a rough surface, which will be received when product is purchased.

D of Tube	Wall Thickness	Length	Part No.	Price
0.5″	.100	10′	03-00171	$428.95
0.75″	.100	10′	03-00172	$428.95
1.00″	.120″	10′	03-00173	$357.95
1.25″	.120″	10′	03-00174	$515.00
1.5″	.120″	10′	03-00175	$414.95
1.75″	.120″	10′	03-00176	$565.00
2″	.120″	10′	03-00177	$464.95
2.5″	.120″	10′	03-00178	$572.00
3″	.120″	10′	03-00179	$689.99

CARBON GRAPHITE YARN TOW

High strength (470,000 PSI) carbon fibers are used as reinforcement in high performance structural composites for aircraft applications, recreational and industrial products. Carbon fiber filaments are finer than a human hair. These filaments are bundled together to make a fiber of 3,000, 6,000 or 12,000 filaments which is called a "tow". The tow is sized with an epoxy compatible material to improve the handling characteristics. It is then wound on a cardboard core holding from 4 to 6 pounds of fiber. 1 Lb. spool.

Actual Size	Part No.	Approx. Yield	Roll Size	Price/Spool
3K Tow	01-00343	2470 Yd./Lb.	4 Lb.	$372.95
6K Tow	01-00307	1229 Yd./Lb.	1 Lb.	$79.65
12K Tow	01-00004	621 Yd./Lb.	2 Lb.	$149.95
12K Tow	01-00345	621 Yd./Lb.	4 Lb.	$298.95

It appears that the 6K tow will prove most practical for homebuilding applications. This size will be available in the small units shown. The 3K and 12K sizes are offered in full spools only. The 3K tow is used primarily by weavers. The 12K is difficult to wet out but can be done by diligent brushing.

S-GLASS ROVING FILAMENTS

This is the S-Glass Strand (roving) used by Rutan Aircraft Factory on the Defiant homebuilt kits. Also applicable to other homebuilt aircraft applications. Defiant requires four 15lb. rolls of S-Glass Strand.

One 15 Lb. Roll P/N 01-06400.....$298.00

KEVLAR 49 ROVING

Unidirectional Aramid fiber roving. Type 968, 7100 denier, comprised of five strands of 1420 denier. Used in the popular geodesic dacron kayaks and boats by Platt Monfort, this roving has a wide variety of applications.

300 Ft . Roll.....P/N 968 .....$33.50

SYSTEM THREE QUIKFAIR EPOXY FAIRING PUTTY

Lightweight, micro ballooned filled, fast curing 2-part epoxy fairing putty with excellent moisture resistance. Use on both fiberglass and wood epoxy structures above or below the waterline. At 70° F it is sufficiently cured to be hand sanded in 3 hours or machine sanded in 4 hours. This allows you to apply 3 coats in a standard 8 hour shift or 6 in a round the clock basis. Complete a fairing or filleting job in a day rather than 3 or 4 days. NOTE: QuikFairs warm butter-like consistency makes it easy to measure by weight. Use care when measuring by volume as QuikFair does not self-level and may trap air pockets. As QuikFair is fast curing the working time is short. Mix no more than can be applied within 10 minutes.

24 oz. Kit .....P/N 01-00404.....$29.50
1-1/2 qt. Kit.....P/N 01-00405.....$44.65

EPOXY PREMIUM PIGMENTS

These Premium Pigments are a paste to tint polyester, vinyl ester, epoxy resin, and polyurethane. Add about 6% to 8% of pigment by weight or 1/2 pint of pigment per gal. of resin.

White - 1 oz. .....P/N 01-45308.....$5.99
White - 8 oz. .....P/N 01-45501.....$19.90
Black - 1 oz.....P/N 01-45319.....$4.50
Black - 8 oz.....P/N 01-45512.....$19.90

JEFFCO EPOXY LAMINATING SYSTEM

1307 Low Viscosity Resin / 3102 Fast Hardener - 100% solids 2-component epoxy laminating system with excellent wet out, low viscosity and high strength. Very low odor and toxicity. Easy to use, 4:1 weight or volumetric mixing, safe, fast curing products for a variety of use applications. Used for fast curing, penetrating wood coatings, adhesives and sealers, fiberglass laminating and microsphere filled fairing compounds. Excellent cold temperature cures down to 40°F. No solvents or VOC's. Non-hazardous, non-corrosive hardener.

3176 30-minute Medium R/T Epoxy Hardener - Fast setting, even in thin films. Good low temperature cure. Fast wetting of fiberglass reinforcements. Easy to use 4:1 mix ratio. High HDT at room temp, increasing with post cure. Low toxicity, very low odor. Non-hazmat.

Low Viscosity Laminating Resin
1307 LV, Pail (40 lbs) .....P/N 01-07917.....$291.95
1307 LV, Gallon (8 lbs).....P/N 01-07914..... $67.75

Fast Hardener
3102, Pail (40 lbs) .....P/N 01-07920..... $358.95
3102, Gallon (8 lbs).....P/N 01-07918.....$79.90
3102, Quart (2 lbs).....P/N 01-07915.....$24.85

Medium Hardener
3176, Pail (40 lbs) .....P/N 01-07921..... $359.95
3176, Gallon (8 lbs).....P/N 01-07922.....$83.75
3176, Quart (2 lbs).....P/N 01-07923.....$24.50

KITS - Jeffco Epoxy, 1 gal. kit, fast.....P/N 01-07916.....$87.90
Jeffco Epoxy, 5 gal. kit, fast.....P/N 01-07919..... $432.95
Jeffco Epoxy, 1 gal. kit, medium .....P/N 01-07924.....$87.90
Jeffco Epoxy, 5 gal. kit, medium .....P/N 01-07925..... $391.95

AEROPOXY LIGHT PATCHING/FILLER COMPOUND

Aeropoxy Light, a modification of the ES6279 adhesive system, is a 2-component paste epoxy patching and filler compound for foam, wood, fiberglass and other surfaces. The mixed consistency of this system is very smooth and creamy, so it spreads easily, and can be spliced to a feather edge without separation. It is a thixotropic, non-sag material that will remain in place in thick sections, even when applied upside down! The resin and hardener of this system are color coded for easy mixing. The resin is white and the hardener is brown, giving a good visual indication of complete mixing with a uniform tan color free of streaks. AEROPOXY LIGHT has special low density fillers incorporated into it that provide very distinct benefits. It is a very light material (4 pounds per gallon), and therefore contributes minimal added weight to the filled or repaired structure. Also, the cured material is very easy to sand, making the finished patch undetectable when covered or painted. There are no volatile ingredients in AEROPOXY LIGHT, so the cured material will not outgas, which could cause a loss of adhesion of paint or coverings. Sold in kits of part A & B.

1-1/2 lb. Kit..... P/N 02-30006 .....$34.50
6 lb. Kit..... P/N 02-30007 .....$109.75

IMPACT RESISTANT LAMINATING EPOXY

DLRH-3212 is an unfilled, clean epoxy resin system with a long pot life. DLRH-3212 is a tough, strong, impact resistant resin with chemical resistance. It has excellent wetting quality on kevlar, carbon graphite and fiberglass cloth. Used extensively in construction of aircraft, race cars, motorcycles, helmets and sports equipment. Mixing Ratio by Wt: 100:30; Pot Life (200 Gm MASS) 60 Min; Tensile Strength @ 25 C 12,500; Flexural Modulus @ 25 C 40,900; Heat Deflection 325 F; Thermal Shock 72°F–125°F; Shore "D": 80, Density: Resin: 9.7, Hardener: 7.9, Mixed: 9.1; Shelf Life: Resin/ Hardener 1 Year.

Qt Kit .....P/N 01-00430.....$54.50
Gal Kit .....P/N 01-00431..... $154.75
5 Gal Kit .....P/N 01-00432..... $738.00

POLY EPOXY
STRUCTURAL EPOXY SYSTEM

Poly Epoxy is a true high-performance epoxy resin with unmatched tensile, compressive, and flex strengths. It also has unbeatable peel, shear, and fatigue resistance, as well as impact strength and fracture behavior. It's great for wings, canards, fuselages, tail feathers, and landing gear. Use it in molds or moldless construction. It parts easily and works beautifully in vacuum bagging. (Avoid silicone-treated peel ply.) It has TWO cure phases, while all other resins—epoxy, polyester, or vinylester—have just one. The two phases occur all by themselves during the curing process. The resulting bond is tougher and stronger than any other.

Poly Epoxy Kit, quart ..... P/N 01-07905 ..... $32.75
Poly Epoxy Kit, gallon ..... P/N 01-07906 ..... $108.75

POLY EPOXY TECHNICAL DATA

Mechanical Properties:	w/Post Cure	w/o Post Cure
Tensile Strength, psi	9600	8800
Elongation at Break, %	7.5	3.6
Tensile Modulus, psi	470,000	460,000
Flexural Strength, psi	19,000	14,500
Flexural Modulus, psi	515,000	500,000
Compressive Strength, psi	32,000	33,000
Shore D Hardness	82	70
Glass Transition Temp., °C	72	62
Heat Distortion Temp., °C	64	50
Water Immersion Weight Gain, % (140 °F, 30 days)	2.8	2.9

Rheology: Mixing Ratio:3 parts Resin to 1 part Converter by Weight 10 parts Resin to 4 parts Converter by Volume
Kinetics:
Pot Life, 100 grams ..... 105 mins 1 quart ..... 75 mins
Mold Open Time ..... 3-4 hrs Tack Free Time ..... 5-6 hrs

AVAILABLE EXCLUSIVELY FROM AIRCRAFT SPRUCE

ALPHA POXY
NON-STRUCTURAL EPOXY SYSTEM

AlphaPoxy is a low-cost flexible epoxy system that is ideal for laying up non-structural parts like wheel pants, or fairings. Because it is flexible, we don't recommend it for structural applications, such as fabricating load-bearing structural aircraft parts. Use PolyEpoxy for these applications. This is a low-viscosity system specifically formulated for filling with microballoons, cotton flox, or milled glass fibers to make slurries. It was designed for maximum sandibility; when cured, it is soft enough to be easily cut with sandpaper smoothing a breeze. AlphaPoxy is also excellent when used as a final filler resin over structural parts when an epoxy gel coat is called for. You can use it in place of polyester resins for a much more durable part at a very attractive price. AlphaPoxy uses a non-MDA hardener that allows us to ship it as non-hazardous material.

AlphaPoxy Kit, 1-1/4 gallon ..... P/N 01-07911 ..... $85.50
AlphaPoxy Hardener, gallon ..... P/N 01-07909 ..... $57.75
AlphaPoxy Resin, 7/8 gallon ..... P/N 01-07912 ..... $55.90
AlphaPoxy Hardener, 5 gal. pail ..... P/N 01-07910 ..... $267.95

AlphaPoxy Hardener, 3/8 gallon ..... P/N 01-07908 ..... $29.50
AlphaPoxy Resin, 5 gal. pail ..... P/N 01-07913 ..... $215.95
Rheology: Mixing Ratio:

2 parts Resin to 1 part Hardener by Weight

AVAILABLE EXCLUSIVELY FROM AIRCRAFT SPRUCE

E-Z POXY
EPOXY LAMINATING SYSTEMS

In early 1996, Composite Design Co. developed E-Z Poxy to provide a replacement epoxy system for Epolite (Safe-T-Poxy) which is no longer produced by Hexcel. The E-Z Poxy series of laminating systems utilizes one resin and your choice of three hardeners for varying pot life and viscosity requirements. The E-Z Poxy systems offer the same handling and physical properties as the discontinued Epolite systems including ease of use, long pot life, rapid cure for demold or process continuation, and superior room temperature curing properties. Excellent for use in sport aviation, marine, and industrial applications.
E-Z 83 hardener is equivalent to Safe-T-Poxy standard hardener, E-Z 84 is equivalent to Safe-T-Poxy II hardener, and E-Z 87 is equivalent to Safe-T-Poxy slow hardener. E-Z Poxy products should not be mixed with materials produced by other epoxy manufacturers.

E-Z POXY PRICE LIST

Description	Part No.	Price
E-Z Poxy 1-1/2 gal. kit* EZ 83 Hardner	01-07850	$171.95
E-Z Poxy 5 gal. kit** EZ 83 Hardner	01-07950	$791.00
E-Z Poxy 1-1/2 qt. kit EZ 83 Hardner	01-08050	$49.50
E-Z Poxy II 1-1/2 gal. kit* EZ 84 Hardner	01-08850	$171.95
E-Z Poxy II 5 gal. kit** EZ 84 Hardner	01-08950	$682.00
E-Z Poxy 1 gal. resin	01-00245	$93.50
E-Z Poxy 5 gal. resin	01-00246	$397.00
E-Z Poxy 1/2 gal. hardener	01-00247	$78.80
E-Z Poxy II 1/2 gal. hardener	01-00248	$78.80
E-Z Poxy 2-1/2 gal. hardener	01-00249	$319.75
E-Z Poxy II 2-1/2 gal. hardener	01-00250	$285.00
E-Z Poxy 5 gal. hardener	01-00251	$652.00
E-Z Poxy II 5 gal. hardener	01-00252	$485.00
E-Z Poxy slow 1/2 gal. hardener	01-00253	$78.80

* 8 lbs. resin, 3.5 lbs hardener ** 40 lbs. resin, 18 lbs. hardener

E-Z POXY TECHNICAL DATA
E-Z POXY RESIN SYSTEMS FROM COMPOSITE POLYMER DESIGN

E-Z 10 Epoxy Resin E-Z 84 Aromatic Amine Hardener
E-Z 83 Aromatic Amine Hardener E-Z Aromatic Amine Hardener

E-Z 10 Resin (Viscosity* 1500 cps @ 77F with:

Hardener	EZ 83	EZ 84	EZ 87
Mixed Properties:			
Mixed Viscosity cps @ 77F*	1300	800	1500
Viscosity Hardener cps @ 77F*	410	140	830
Pot Life @ 77F	2 hrs.	2 hrs.	5 hrs.
Tack Free @ 77F	4 hrs.	8 hrs.	8 hrs.
Cure Time @ 77F	24 hrs.	3 days	3 days
Mix Ratio by Volume	100/47	100/47	100/47
Mix Ratio by Weight	100/44	100/44	100/44
Physical Properties Tg (F):			
R/T	151	151	142
P/C*	196	196	196
Elongation %	3.5	3.5	3.9
Specific Gravity	1.14	1.13	1.14
Linear Shrinkage @ 23C (4 days %)	.10	.10	.10
Tensile Strength PSI			
R/T	8,200	8,100	8,400
P/C	10,000	10,000	10,000
Tensile Modulus (PSI x 10 -5)	4.8	4.2	4.0

* Viscosity may vary +/- 10%
*Post Cure for 2 hrs. @ 150F

E-Z Poxy systems provide excellent room temperature curing systems for hand layup of composite parts and tooling. The systems are designed to provide ample working time with the varied pot life options while providing a rapid finish cure. Post curing these systems will increase their physical properties as designated in the above data, however, post cure is not required.

EPOXY LAMINATING SYSTEMS

POLYESTER RESINS

Polyester resins are hygroscopic (they draw moisture from the air). There are two types of resin, and one or both types may be required, depending on the application. Type "A" resin has a small amount of wax in it, which comes to the surface and forms a barrier against the moisture. This permits the resin to cure completely and the surface is hard and easily sanded. Bond Coat "B" resin does not have any wax content. As a result the surface stays a little tacky, as the surface cure is being inhibited by moisture. This tacky surface provides excellent adhesion between coats. Bond Coat resin is therefore recommended for the first coat of resin to fill the weave of the glass cloth, for bonding fiberglass cloth to plywood or other surfaces and for multi-layers of glass cloth.

TYPE "A" RESIN - #1520-5 is a general purpose ortho surfacing resin intended for the finishing coat applied over the Bond Coat #1063-5, or for single coat application. A second coat may be applied after full cure and thorough sanding but is not recommended.

Polyester Resin #692 Quart ..... P/N 01-00346 ..... $23.85
1 Gal. #1520-5 with 1 Oz. Catalyst ..... P/N 01-00347 ..... $78.65
5 Gal. #1520-5 with 4 Oz. Catalyst ..... P/N 01-00348 ..... $318.95
Additional catalyst may be required. 1 Oz. ..... P/N 01-06900 ..... $3.80

TYPE "B" RESIN - #L253T-20 is a general purpose bond coat ortho resin for use in making multi laminates. It will not cure to a high gloss finish. Use 1520-5 for finish coat to obtain smooth, hard gloss finish. Replaces #1063-5.

1 Gal. #L253T-20 with 1 Oz. Catalyst ..... P/N 01-00349 ..... $50.45
5 Gal. #L253T-20 with 4 Oz. Catalyst ..... P/N 01-00350 ..... $214.95
Additional catalyst may be required.
Same catalyst used for #1520-5 and #L253T-20.
Note: Use #1520-5 finish coating over #L253T-20 but never use #L253T-20 over #1520-5.
Above resins are not for use in making fuel tanks. For fuel tanks (except those for gasohol) use #6060-5 Isophthalic Resin.*

1 Gal. #6060-5 with 1 Oz. Catalyst ..... P/N 01-00351 ..... $56.50
5 Gal. #6060-5 with 4 Oz. Catalyst ..... P/N 01-00352 ..... $191.95
Additional catalyst may be required.
Catalyst same as for resins listed above.
* Iso Resin is highly flexible. Has excellent adhesion to metal, wood, concrete, fiberglass and other "hard-to-adhere" surfaces. Compatible with most fuels. Iso is a wax-free resin and must be over-coated with Type "A" Surfacing Resin to obtain a surface cure.
SURFACE CURING AGENT is used in polyester resin to improve sanding properties. Added to #1063-5 Bond Coat or #6060-5 Isophthalic, it will provide same sanding properties as in Type "A" Surfacing Resin. Use in proportions of 2 oz. per gallon of resin. Surface Curing Agent is used in addition to catalyst.

4 Oz. in Polyethylene Dispenser Bottle ..... P/N 01-07100 ..... $2.05
Pint (16 Oz.) in Polyethylene Dispenser Bottle ..... P/N 01-07200 ..... $4.10
Gallon (128 Oz.) ..... P/N 01-07300 ..... $58.75

MEKP NORAC CATALYST

MEKP Norac Catalyst is the catalyst added to polyester resins and vinyl ester resins. As the catalyst mixes with the resin, a chemical reaction occurs, creating heat which cures the resin. Use approx. 1/2 oz per quart of resin. We recommend the use of our MEKP Catalyst Dispenser for accurate measuring and pouring of catalyst.2 oz. P/N 01-01119 ..... $4.95

MGS EPOXY RESINS

MGS epoxy resins are approved for the production of certificated aircraft parts. The 335 and 285 systems are especially suited for homebuilders because of their long shelf lives, excellent workability, physiological friendliness, adjustable cure rates and excellent static and dynamic strength characteristics. The 285 system is available with fast and slow hardeners which can be blended with each other in any proportion to provide the desired working life and cure cycle. Pot lives and working times can be adjusted from fifteen minutes, using the fast hardeners, to six hours, when the slow hardeners are employed. Once the hardeners have been blended, the specified resin to hardener mixing ratio must be maintained. The 335 System is available only with fast hardener. Components of the 335 system should not be mixed with those of the 285 system. With both systems, if only the slowest hardener is used, the cure times should be extended to a few days, otherwise some brittleness may be noted. While room temperature curing results in good properties when the faster hardener combinations are used, some curing at elevated temperatures or post curing will result in the highest achievable strength and Tg, with the slower blends. Even unfavorable low temperature and high humidity conditions in the work environment will not effect the quality of the product and high gloss, uncontaminated, tack free surfaces are achievable every time. The resins do not contain any unreactive dilutants which with many systems result in de-gassing and bubbling of the painted finish. The MGS resins do NOT contain aromatic amines. While proper processing practices should be maintained, the physiological friendliness of these systems have been demonstrated by many years of production experience. The 285 system has slightly higher physicals than the 335 and will also achieve a higher maximum Tg after post curing. While the 335 is more viscous than the 285, after mixing with the appropriate hardeners, their viscosities are comparable. MGS systems are used in the construction of the Cozy, Diamond, Cirrus and other aircraft.

System 285 (Max. Tg 105 C - 110 C; 195 F - 230 F)		
Mixing ratio Resin:Hdnr	Pot life	Mixed Viscosity@20C
100:50 by volume	H285-F 40 min	300-500 cp
100:40 by weight	H287-S 4 hours	
	H285 : H287	
	40 : 60 2 hours	

System 285 Prices

L285 Resin (1 Gal.) ..... P/N 01-41000 ..... $132.95
H285F Hardener (.25 gal/1 qt.) ..... P/N 01-41005 ..... $31.50
H287S Hardener (.25 gal/1 qt.)* ..... P/N 01-41006 ..... $36.95

*Important Shipping Information- H287S Hardener can be shipped UPS ground only. A $25 hazardous fee, and a $45 box fee applies (per quart). Can also be shipped truck collect.

System 335 (Max. Tg 75 C - 80 C; 160 F - 180 F)		
Mixing ratio Resin:Hdnr	Pot life	Mixed Viscosity@20C
100:45 by volume	H335-F 15 min	800 cp
100:38 by weight	H340-S 6 hours	400 cp
	H335 : H340	
	50 : 50 1.5 hours	
	20 : 80 4 hours	

System 335 Prices

L335 Resin (Gal.) ..... P/N 01-41100 ..... $89.95
H335F Hardener (.225 gal/0.9 qt.) ..... P/N 01-41105 ..... $31.75
H340S Hardener (Slow) ..... P/N 01-41106 ..... $29.50
Two units of hardener are required for each gallon of resin

VINYL ESTER RESIN

Dow Chemical's Derakane 411-350 PA Vinyl Ester Resin is an epoxy-based Vinyl ester designed to provide superior toughness and high corrosion resistance. Many leading kit aircraft manufacturers use vinyl ester resins extensively due to its quality and ease of fabrication. We furnish medium "promoted" vinyl ester 411-350 PA resin which includes CONAP, DMA the resin is cured by adding the MEKP which is furnished with the kit. Gel times vary according to the amount of MEKP added and the ambient temperature. Shelf life of promoted vinyl ester resin is short at only a few months.

MEDIUM PROMOTED: Includes CONAP, DMA and other additives. Add MEKP for complete cure:
Quart ..... P/N 01-01076 ..... $39.50
Gallon ..... P/N 01-07350 ..... $76.75

MEKP Clear Catalyst 1oz. ..... P/N 01-01110 $2.85
MEKP NORAC Catalyst Only (4 oz.) P/N 01-07325 ..... $5.50
Vinyl Ester Resin 411-350PA - Quart Kit. ..... P/N 01-01109 $42.85
Vinyl Ester 1-Gal. Kit (Resin & Catalyst) ..... P/N 01-07355 $82.25

Typical room-temperature properties of clear castings made with DERAKANE 411 resins

Property	DERAKANE 411-350PA
Tensile Strength, psi	11-12,000
Tensile Modulus, units 105 psi	4.9
Elongation, %	5-6
(DERAKANE 411-350)	(7-8)
Flexural Strength, psi	16-18,000
Flexural Modulus, units 105 psi	4.5
Compressive Strength, psi	16-17,000
Compressive Modulus, units 105 psi	3.5
Compressive Deformation at Yield, %	6.5-7.8
Specific Gravity	1.12
Heat Distortion Temp.,°F	210-220
Barcol Hardness	35

CATALYST LARGE QUANTITY CHART

Catalyst Concentration	Resin Quantity		
	Quart	Gallon	5 Gallon
1/2%	1/16 oz.	2/3 oz.	1-1/3 oz.
3/4%	1/4 oz.	1 oz.	5 oz.
1%	1/3 oz.	1-1/3 oz.	6-2/3 oz.
1-1/2%	1/2 oz.	2 oz.	10 oz.

WARNING: Mekp Catalyst is very dangerous to the eyes. Always wear full goggle protection and have running water at hand when working with Mekp.

CATALYST SMALL QUANTITY CHART

(20 -30 minute pot life at 2% mix ratio)

Catalyst Concentration	Resin Quantity - 30 drops = 1 cc				
	2 oz.	4 oz.	8 oz.	12 oz.	16 oz.
1/2%	9 drops	18 drops	36 drops	1.8 cc	2.5 cc
3/4%	14 drops	27 drops	2 cc	3 cc	4 cc
1%	18 drops	36 drops	2.5 cc	3.75 cc	5 cc
1-1/2%	27 drops	2 cc	4 cc	6 cc	8 cc
2%	36 drops	2.5 cc	5 cc	7.5 cc	10 cc

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Prices Subject to Change Without Notice

EPOXY LAMINATING SYSTEMS

AEROPOXY FROM PTM&W INDUSTRIES

CORROSIVE

PR2032 is a medium viscosity, unfilled, light amber laminating resin that is designed for structural production applications. 3 hardeners are available for use with PR2032. PH3660, has a 1-hour pot life. When used with either of these hardeners, the system gives excellent wet-out of fiberglass, carbon and aramid fibers. Special additives have been incorporated into this system to promote chemical adhesion to fabrics made with these fibers. The AEROPOXY systems will cure completely at room temperature, or can be given an elevated temperature cure. AEROPOXY contains no MDA (a known liver toxin and carcinogen) and meets or exceeds current OSHA requirements for safe use. Hardener PH3665 has a longer pot life than PH3660, 2 hours, that is useful for vacuum bagging larger parts before the resin has gelled. Hardener PH3630 is intended for smaller laminates, fast repairs or additions to a primary structure. PH3630 pot life is 30 min.

Part No.	Description	Wt. (lbs.)	Price
01-42125	1 quart PR2032 Resin	2.25	$33.85
01-42130	1 pint PH3660 Hardener	.66	$13.75
01-42135	Aeropoxy QUART KIT	2.91	$47.25
01-42140	3/4 gallon PR2032 Resin	7.5	$89.75
01-42145	1 quart PH3660 Hardener	2.0	$36.85
01-42150	Aeropoxy GALLON KIT	9.5	$125.95
01-42155	5 gallon PR2032 Resin	48	$447.95
01-42160	2 gallon PH3660 Hardener	13	$179.95
01-42165	Aeropoxy PAIL KIT	61	$626.00
01-00160	1 pint PH3630 Hardener (fast)	--	$13.95
01-00161	1 quart PH3630 Hardener (fast)	--	$38.50
01-00162	1 pint PH3665 Hardener (slow)	--	$13.95
01-00163	1 quart PH3665 Hardener (slow)	--	$35.75

Aeropoxy mixing ratio — 100:27 by weight, 3:1 by volume.

WEST SYSTEM EPOXY

CORROSIVE

WEST SYSTEM brand resins and hardeners, form a two-part epoxy system developed by Gougeon Brothers specifically for wood and composite boat construction. Rutan Aircraft Factory now recommends WEST SYSTEM epoxy for certain homebuilt aircraft applications, particularly where a moisture resistant epoxy is desired. 105 Resin is the base material on which all of the WEST SYSTEM epoxy systems are built. The resin is a clear, light amber, low-viscosity liquid. It is designed specifically to wet out wood fiber. With roller applications, it possesses excellent thin film characteristics in flowing out and is self-leveling without fish-eyeing. Its relatively high flash point makes it safer to work with than polyesters. It can be cured in a wide temperature range, then sanded and shaped. It cures quite clear so that the natural finish shines through. 205 Fast Hardener, when mixed with the 105 Resin in a ratio of 5 parts Resin to 1 part Hardener, yields a high-strength, rigid solid with excellent cohesive properties and provides an excellent moisture vapor barrier. The 105 Resin/205 Fast Hardener has a pot life of 10-15 minutes at 70°F. It is also recommended in coating applications where natural finishing is desired. Partial cure time at 70°F is 5-7 hours. 206 Slow Hardener is a low-viscosity mixture of polyamines. The 105 Resin/206 Slow Hardener has a pot life of 30-40 minutes at 70°F. It is normally used when extended time is needed for large coating and bonding applications. It is especially well suited to working in warmer climates. Partial cure time is 9 hours at 70°F.

WEST EPOXY KITS

WEST COMPONENTS

Kit No.	Kit Size	Part No.	#105 Resin	Hardener		Kit Price	Resin		Fast Hardener		Slow Hardener	
				#205 Fast	#206 Slow		Part No.	Price	Part No.	Price	Part No.	Price
A-1	1.2 Qt	01-08100	32 Oz	7 Oz	------	$55.75	01-00353	$38.93	01-00356	$20.10	01-00359	$20.10
A-2	1.2 Qt	01-08200	32 Oz	------	7 Oz	$55.75	32 Oz	-----	7 Oz	------	7 Oz	-----
B-1	1.2 Gal	01-08300	126 Oz	27 Oz	------	$137.95	01-00354	$98.26	01-00357	$44.29	01-00360	$44.29
B-2	1.2 Gal	01-08400	126 Oz	------	27 Oz	$137.95	126 Oz	-----	27 Oz	------	27 Oz	------
C-1	5.25 Gal	01-08500	4.35 Gal	121 Oz	------	$546.00	01-00355	$390.80	01-00358	$153.17	01-00361	$153.17
C-2	5.25 Gal	01-08600	4.35 Gal	------	121 Oz	$568.00	4.35 Gal	-----	121 Oz	------	121Oz	------

ORDER 301/303 PUMP PACKS SEPERATELY.

207 SPECIAL COATING HARDENER

This hardener is used where a very clear, moisture resistant natural wood finish is needed. Can be used to laminate veneers where joints will be subjected to sunlight. Improves sun resistance. Pot life: 20 min., cure solid in 9-12 hours, and maximum strength within 7 days.

.66 pint.....P/N 207-SA.....$38.15
.33 gal.....P/N 207-SB.....$81.52
1.45 gal. .....P/N 207-SC.....$278.95

209 TROPICAL HARDENER

This hardener is used for bonding applications in warm or humid weather or when extended working time is needed. Provides twice the working time as 206 hardener. Forms a clear, amber solid when cured. Pot life is 40 minutes, solid state in 24 hours, and maximum strength in 5-9 days.

.66 pint.....P/N 01-00362.....$33.55
.33 gallon.....P/N 01-00364.....$75.17
1.45 gal.....P/N 01-00363.....$242.51

PRO-SET 125 RESIN & 229 HARDENER

Mixing: 125 Resin: 229 Hardener - By weight, 100:30 & By volume, 100:35. Pot life: 65°–83 min, 72°–77 min, 85°–27 min.

For PROFESSIONAL use only.

Physical Property	Test Method	Room Temp (2 wks.)
Compression Yield (psi)	ASTM-D-695	14,500
Tensile Strength (psi)	ASTM-D-638	7,550
Annular Shear Fatigue(lb)@100,000 cycles	GBI Method	11,641

GAL.#125 Resin ..... P/N 01-01221 ..... $111.75
GAL.#229 Hardener ..... P/N 01-01222 ..... $89.75

PRO-SET 135 RESIN & 226/237 HARDENERS

135 Resin: LAM-135 Medium Viscosity Laminating Resin. 226 Hardener: LAM-226 Medium Laminating Hardener. Medium viscosity for good wet out of all synthetic composite fabrics and core materials. Medium cure speed hardener provides 2 to 3 hours of working time at 77°F (25°C). A typical laminate will be gelled in 4 to 5 hours. 237 Hardener: LAM-237 Extra Slow Laminating Hardener. Medium viscosity for good wet out of all synthetic composite fabrics and core materials. Extra Slow cure speed hardener provides 7 to 8 hours of working time at 77°F (25°C). A typical laminate will be gelled in 12 to 14 hours.

135 Resin .....P/N 01-01223.....$96.75
226 Hardener.....P/N 01-01224.....$66.75
237 Hardener.....P/N 01-01210.....$76.75

WEST SYSTEM ACCESSORY PRODUCTS

- West System User Manual..... P/N 01-08750 .....FREE

- West System 101 Handy Repair Pack - Contains 105 resin & 205 hardener plus accessories needed for small repairs
P/N 01-08760 .....$10.50

- West System #101-6 Maxi Repair Kit - incl. materials to make 6 individual repairs using 105 resin and 205 hardener.
P/N 01-08770 .....$34.01

- West System 501 White Pigment - use this epoxy based pigment to provide a neutral white base for the final coloring system. Mix at ratio of 1 teaspoon to 8 oz. of epoxy. 8 oz. can..... P/N 01-08775 .....$16.49

- West System 410 Microlight an excellent filler which provides easy workability for a variety of applications. Easy to sand and cures to a neutral tan color.
1.7 oz., 01-08780..... $15.69 4.3 oz., 01-08785.....$31.10

423 GRAPHITE POWDER

423 Graphite Powder can be mixed with WEST SYSTEM epoxy to produce a low friction coating with increased scuff resistance and durability. 423 is often used as a bearing surface, and as a coating on the bottoms of racing craft that are dry sailed.

P/N 09-00315 ..... $17.93

301/303 PUMP PACK

Using Mini Pumps helps ensure accurate metering of resin/hardener mixture. Pumps mount directly on resin and hardener containers. One stroke from each pump delivers proper ratio of resin to hardener. Kit consists of 3 pumps for A, B, and C epoxy kits.

P/N 01-00318 ..... $14.52

ECOPOXY UVPOXY

Our UVPoxy Kit is high performance two part system that is commonly used for table tops, bars, wood finishes, see-through clear casting, art work, layup, and other applications requiring a clear, strong coating. It cures to a crystal clear, high build, long lasting, glass-like finish, and will not blush or sweat under high humidity conditions. UVpoxy is designed to resist yellowing caused by the sun and other ultra violet light sources.

Features:

- Crystal Clear - Cures to a clear, glass-like finish
- Low Odour - It's safe to use indoors, no ventilation or respiration required
- UV Stable - Won't fade or yellow, your finishes will last forever!
- User Friendly - Mixes at a 1:1 mix ratio, very easy to calculate amounts needed
- Low Drip - Thicker viscosity ensures it does not drip onto other areas
- Self-Leveling - Self-levels perfectly, making for a nice even finish every time!

Specifications:

- Color: Yellow (Visual)
- Mix Ratio: 1:1
- Pot Life: 25-30 Minutes

Description (Metric / Approx. US)	Size	Part No.	Price
EcoPoxy UVPoxy Kit	500 mL / 1 Pt	09-04095	$31.65
EcoPoxy UVPoxy Kit	1 L / 1 Qt	09-04096	$48.50
EcoPoxy UVPoxy Kit	2 L / 2 Qt	09-04097	$77.75
EcoPoxy UVPoxy Kit	4 L / 1 Gal	09-04098	$127.75

ECOPOXY CLEAR

Our Clear Kits are ideal for sealing / clear-coating surfaces such as concrete and wood, as well as for wetting fabrics that require a clear, waterproof finish. Odourless and non-toxic, It can be applied indoors or outdoors without masks or ventilation. This self-leveling kit is applies at approximately 10 mils finish thickness. It provides a durable, light reflective floor with excellent adhesion qualities. It's easily roller applied.

The Clear Kit is non-shrinking, and resistant to to water, acids, other solvents. It will never peel, flake or chalk when properly applied. Typical use include Warehouse Floors, Aisle ways, Storage Areas, Industrial & Commercial Floors.

Specificaions:

- Color: Clear (Visual)
- Mix Ratio: 2:1
- Pot Life: 15-20 Minutes

Description	Size	Part No.	Price
EcoPoxy Clear Kit	750 mL / 1.6 Pt	09-04099	$34.65
EcoPoxy Clear Kit	1.5 L / 1.6 Qt	09-04101	$51.95
EcoPoxy Clear Kit	3 L / 3.2 Qt	09-04102	$103.85
EcoPoxy Clear Kit	6 L / 1.6 Gal	09-04103	$184.75

POLYESTER GEL COATS

These polyester gel coats can be used as the surface of new fiberglass parts layed up in molds or used in the repair of gel coat surfaces on fiberglass parts. On surface repairs, the gel coat must be sealed to fully cure. PVA can be used to seal the gel coat.

Color	Size	Part No.	Price
Black	Pint	09-01668	$21.65
	Quart	09-01666	$31.75
	Gallon	09-01667	$62.75
White	Pint	09-01669	$19.95
	Quart	09-01664	$34.50
	Gallon	09-01665	$68.50
Dark Blue	Pint	09-01670	$35.50
	Quart	09-01671	$53.00
	Gallon	09-01672	$103.95
Red	Pint	09-01673	$39.60
	Quart	09-01674	$58.75
	Gallon	09-01675	$98.75
Clear	Pint	09-02159	$26.50
	Quart	09-02160	$52.75
	Gallon	09-02161	$108.75

ECOPOXY SLOW

Our Slow Kit is typically used to fabricate larger, more complicated composite parts. It has a longer 2.5 - 3.5 hour working time, and can be used for vacuum bagging larger parts before the resin has gelled.* It can also be used for and for repairs or additions to a primary structure. It is compatible with most fabrication techniques, such as lay-up and filament winding. It features excellent wet-out and chemical adhesion of fiberglass, carbon and aramid fibers. Typical applications include aircraft, boats, auto body, structural components and parts. Odorless and non-toxic, It can be applied indoors or outdoors without masks or ventilation.

The Slow Kit will cure completely at room temperature (25°C or above) and does not require a heat cure. When constructing 2-3 ply thin laminates for overnight demolding and sandability, a room temperature of 25°C or above is required. In thicker laminates and larger masses, plan to allow the laminate to cure at least 12 hours at a minimum of 24°C before moving the structure.

Specifications

- Color: Yellow (Visual)
- Mix Ratio: 2:1
- Pot Life: 2.5-3.5 hours

Description (Metric / Approx US)	Size	Part No.	Price
EcoPoxy Slow Kit	750 mL / 1.6 Pt	09-04104	$32.50
EcoPoxy Slow Kit	1.5 L / 1.6 Qt	09-04105	$51.95
EcoPoxy Slow Kit	3 L / 3.2 Qt	09-04106	$103.85
EcoPoxy Slow Kit	6 L / 1.6 Gal	09-04107	$184.75

ECOPOXY MEDIUM

Our Medium Kit is typically used to fabricate high performance composite parts. It has a 20 minute working time and can be used for all sizes of parts, and for repairs or additions to a primary structure. The vacuum bagging technique can be used for smaller parts*. It is compatible with most fabrication techniques, such as lay-up and filament winding. It features excellent wet-out and chemical adhesion of fiberglass, carbon and aramid fibers. Typical applications include aircraft, boats, skateboards, skis, auto body, structural components and parts. Odorless and non-toxic, it can be applied indoors or outdoors without masks or ventilation.

The Medium Kit will cure completely at room temperature (25°C or above) and does not require a heat cure. When constructing 2-3 ply thin laminates for overnight demolding and sandability, a room temperature of 25°C or above is required. In thicker laminates and larger masses, plan to allow the laminate to cure at least 12 hours at a minimum of 24°C before moving the structure.

Specifications:

- Color: Yellow (Visual)
- Mix Ratio: 4:1
- Pot Life: 15-20 Minutes

Description	Size	Part No.	Price
EcoPoxy Medium Kit	1.25 L / 1.33 Qt	09-04108	$43.95
EcoPoxy Medium Kit	2.5 L / 2.65 Qt	09-04109	$71.75
EcoPoxy Medium Kit	5 L / 1.32 Gal	09-04111	$122.75

ECOPOXY FAST

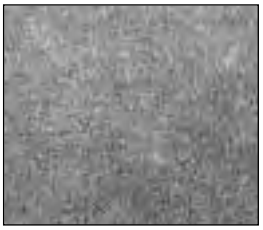
Our Fast Kit is most commonly used as an adhesive or in an injection box for pultrusion. It has a pot time of just 2-3 minutes, and features a high-strength, waterproof bond to a variety of materials including wood, fiberglass, metal, glass, tile, and more.

Specifications:

- Color: Yellow (Visual)
- Mix Ratio: 2:1
- Pot Life: 2.5-3 Minutes

Description	Size	Part No.	Price
EcoPoxy Fast Kit	750 mL / 1.6 Pt	09-04113	$34.65
EcoPoxy Fast Kit	1.5 L / 1.6 Qt	09-04114	$51.95
EcoPoxy Fast Kit	3 L / 3.2 Qt	09-04115	$103.85
EcoPoxy Fast Kit	6 L / 1.6 Gal	09-04116	$184.75

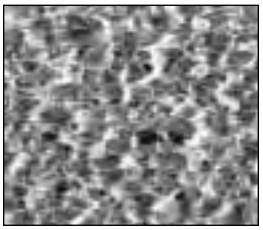
STYROFOAM – SMALL CELL



STYROFOAM FB – Low density (2 lb./ft3). Tight closed cell structure leaves no voids between the cells. The result is high compressive strength and unequaled resistance to water penetration. Has excellent resistance to bases, salts, alcohols and most acids but not to petroleum based solvents. Not for structural use.

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Styrofoam (Blue) Small Cell	2 Lb/Ft^3	5/8"	24" x 48"	01-09400	$8.50
		5/8"	24" x 96"	01-09500	$17.65
		3/4"	24" x 96"	01-09600	$21.70
		1"	24" x 48"	01-09700	$14.75
		1"	24" x 96"	01-09800	$29.50
		1-1/2"	24" x 96"	01-09900	$43.85
		2"	24" x 48"	01-10000	$28.50
		2"	24" x 96"	01-10100	$57.65
		4"	24" x 48"	01-10200	$57.50

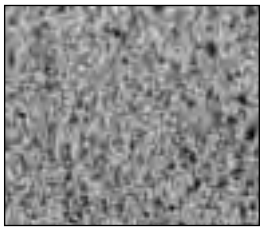
POLYSTYRENE – LARGE CELL



POLYSTYRENE – LARGE CELL This blue large cell expanded foam is 2 lb. per cubic feet density and cuts easily using a hot wire to airfoil shapes. Compatible with most adhesives, but should be used only with epoxies, not polyester resins. Will dissolve in fuels and solvents. Cuts smoothly with hot wire and airfoil shapes. Used in the construction of VariEze, Long-EZ, Cozy, and other composite aircraft.

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Styrofoam FB (Blue) Large Cell		8"	16" x 4"	01-37600	$9.95
		8"	16" x 25"	01-01166	$53.95
		8"	16" x 42"	01-10600	$87.90
		8"	16" x 67"	01-10800	$136.70
		8"	16" x 109"	01-10900	$218.50

POLYURETHANE FOAM



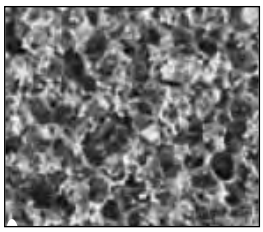
CAUTION

DO NOT USE HOT WIRE!

URETHANE – This foam is easily contoured using a large knife, and then sands well to final form. Excellent for producing the fuselage, wing tips, and other curved parts. It is fuel resistant and can be used for fuel cells. Compatible with most adhesives. Do not hot wire polyurethane foam. Available in tan or green.

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Urethane (Tan or Green)	2 Lb/Ft^3	1/2"	24" x 48"	01-11300	$10.50
		1/2"	48" x 48"	01-11400	$19.85
		3/4"	24" x 48"	01-12150	$13.95
		3/4"	24" x 96"	01-12160	$29.85
		1"	24" x 48"	01-11500	$18.75
		1"	24" x 96"	01-11600	$33.75
		1"	48" x 96"	01-11700	$63.75
		2"	24" x 48"	01-11900	$37.50
		2"	24" x 96"	01-12000	$73.85
		2"	48" x 96"	01-12100	$124.75

DIVINYCELL FOAM



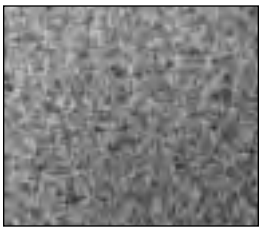
CAUTION

DO NOT USE HOT WIRE!

DIVINYCELL – A closed cell medium to high density foam which has high compression strength, durability, and excellent fire resistance. Can be vacuum formed to compound shapes and can be bent using heat. Compatible with polyester, vinylester, and epoxy resins.

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Divinycell PVC (Tan) Type H45	3 Lb/Ft^3	1/8"	32" x 48"	01-00158	$17.50
		1/4"	32" x 48"	01-12300	$21.75
		3/8"	32" x 48"	01-12400	$35.50
		5/8"	24" x 47"	01-12500	$47.99
		3/4"	15" x 26"	01-12600	$13.45
		3/4"	32" x 48"	01-12700	$53.80
		3/4"	32" x 24"	01-01197	$26.90
		1"	32" x 48"	01-12800	$69.50
		1-3/4"	32" x 48"	01-12900	$116.75
		2"	48" x 96"	01-12920	$353.00
		2"	24" x 48"	01-12910	$88.25
		3"	48" x 96"	01-12940	$497.00
		3"	24" x 48"	01-12930	$138.75
Divinycell PVC (Tan) Type H100	6 Lb/Ft^3	1/4"	37" x 37.5"	01-13000	$48.50
		1"	6" x 10"	01-13100	$8.75
		1"	10" x 12"	01-13200	$18.95
Divinycell PVC Type H250	15.6 Lb./Ft^3	1/4"	24.8" x 27.75"	01-13300	$169.75

LAST-A-FOAM



CAUTION

DO NOT USE HOT WIRE!

LAST-A-FOAM – Rigid, Polyether Polyurethane foam with fine closed-cell structure, light cream-yellow color. LAST-A-FOAM® is wonderfully versatile for sandwich-core applications. It cuts and shapes easily with common woodworking tools, and bonds to itself and other materials with most epoxy, polyester, or urethane-type adhesives. LAST-A-FOAM® is unaffected by water, fuels and most solvents, and paint finishes are easily applied. It is frequently used in regular molds after the gel-coat and first two layers of glass are installed; the LAST-A-FOAM® is added and another layer of glass applied for a strong, light-weight sandwich.

Foam Type	Density	Thickness	Sheet Size	Part No.	Price/Sheet
Last-A-Foam Urethane/Polyester (Yellow) 275° F	4.5 Lb/Cu. Ft.	10mm	24" x 96"	01-13400	$57.75
		1/4"	24" x 48"	01-13550	$20.00
		1/4"	24" x 96"	01-13500	$35.70
		1/4"	24" x 48"	01-01196	$20.00
		3/8"	24" x 96"	01-13600	$44.75
		1/2"	24" x 96"	01-13700	$57.75
		3/4"	24" x 96"	01-14000	$83.65
		3/4"	24" x 48"	01-01195	$41.83
Last-A-Foam Urethane/Polyester (Yellow) 275° F	6Lb/Cu. Ft.	1/4"	24" x 48"	01-14100	$23.60
		3/8"	24" x 48"	01-14200	$28.50
		3/4"	24" x 48"	01-14250	$49.70
Last-A-Foam Urethane/Polyester (Yellow) 275°F	8 Lb/Cu. Ft.	1"	16" x 24"	01-01048	$36.90
Last-A-Foam Urethane/Polyester (Yellow) 275° F	18 Lb/Cu. Ft.	0.200"	12" x 48"	01-14400	$36.35
		1/4"	12" x 48"	01-14500	$37.55

LIQUID "X-30" FOAM
(TWO-COMPONENT POLYURETHANE FOAM)

This system consists of two components - "X-30" Resin and "X-30" Catalyst. When the resin and catalyst are mixed in equal volumes they expand into a rigid closed-cell foam of 2 pound density. Thorough mixing of the two components is essential. "X-30" Foam expands approximately 40 times its liquid volume. Small-batch mixes are recommended. Cured foams can be easily trimmed, cut and shaped with common woodworking tools. Use toluene or MEK for cleanup. "X-30" Foam contains a highly reactive agent and is classified as a toxic material. It is combustible, a strong skin sensitizer and eye irritant. Avoid contact with the skin. Use rubber gloves when handling. Used for: Flotation, thermal and acoustical insulation reinforcement and miscellaneous void filling. Most small pleasure boats can be made "sink-proof" with approximately two gallons of "X-30". Data sheet available. "X-30" Foam contains a volatile fluorocarbon and should be stored at 70°F. or lower. "X-30" is used on the Osprey II bottom hull, canopy, nose cone, etc., requiring about four gallons of material (2 gallons of each). Shelf life at least 6 months. Users have reported "more than 2 years shelf life".

Kit Size	Part No.	Approx. Foamed Vol. (Cu.Ft.)	Weight Lbs.	Price/Kit
1 Quart Kit (1 Pt. ea component)	01-08800	1-1/4	3	$39.80
2 Quart Kit (1 Qt. ea component)	01-08900	2-1/2	6	$61.75
2 Gallon Kit (1 Gal. ea component)	01-09000	10	22	$198.85
10 Gallon Kit (5 Gal ea component)	01-09100	50	110	$633.00

X-30 is the original polyurethane foam. Do not accept substitutes!

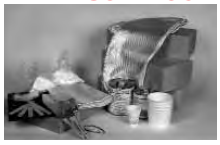
POLYFIX COMPOSITE REPAIR KITS

Polyfix is a 3-part system that uses chemical reaction to heat the repair to 140°F, fusing it to the parent part. This system repairs ABS, PVC, CVPC, SMC, acrylic, vinyl, graphite, Kevlar, plexiglass, nylon, fiberglass, and many other materials, The system combines cyanoacrylate glue, a catalytic filler, and an accelerator. May be used on speed fairings, wing tips, cowlings, glareshields, and more. Kits include polyfix chemicals, Polydust, gloves, mixing tools, and an easy to follow instruction manual.

Description	Size	Part No.	Price
Polyfix Plastic Repair Kit	Small	01-01045	$22.45
Polyfix Plastic Repair Kit	Medium	01-00235	$34.75
Polyfix Plastic Repair Kit	Large	01-00236	$59.80
Polyfix Plastic Repair Kit	X-Large	01-00237	$292.95
Non-Clog Cyanoacrylate Applicator reg. Tip	6" Long	01-01006	$15.50
Non-Clog Cyanoacrylate Applicator Fine Tip	6" Long	01-01007	$15.50
Polyfix Thin Cyanoacrylate	1/2 OZ	01-01008	$3.95
Polyfix Thin Cyanoacrylate	1 OZ	01-01009	$7.80
Polyfix Thin Cyanoacrylate	2 OZ	01-01010	$12.75
Polyfix Thin Cyanoacrylate	8 OZ	01-01011	$34.95
Polyfix 9000 Extra Thick	1/2 OZ	01-01012	$4.45
Polyfix 9000 Extra Thick	1 OZ	01-01013	$7.90
Polyfix 9000 Extra Thick	2 OZ	01-01014	$12.45
Polyfix 9000 Extra Thick	8 OZ	01-01015	$34.95
Polyfix 11000 Gap Fill	1/2 OZ	01-01016	$6.50
Polyfix 11000 Gap Fill	1 OZ	01-01017	$7.90
Polyfix 11000 Gap Fill	2 OZ	01-01018	$12.75
Polyfix 11000 Gap Fill	8 OZ	01-01019	$36.75
Polyfix Industrial 4000 Flexible Thin	1 OZ	01-01020	$7.50
Polyfix 3000 Rubber Fill	1 0Z	01-01021	$6.75
Polyfix 3000 Rubber Fill	2 OZ	01-01022	$12.50
Polyfix 17000 Industrial Odorless Gap Fill	1/2 OZ	01-01023	$9.25
Polyfix 17000 Industrial Odorless Gap Fill	1 OZ	01-01024	$16.95
Polyfix 17000 Industrial Odorless Gap Fill	2 OZ	01-01025	$28.95
Polyfix 17500 Industrial Odorless Gap Fill	1/2OZ	01-01026	$9.95
Polyfix 17500 Industrial Odorless Gap Fill	1 OZ	01-01027	$19.50
Polyfix 17500 Industrial Odorless Gap Fill	2 OZ.	01-01028	$30.95
Polyfix 64000 Carbon Gap	1/2OZ	01-01029	$5.95
Polyfix 64000 Carbon Gap	1 OZ	01-01030	$11.50
Polyfix 64000 Carbon Gap	16 OZ	01-01031	$173.95
Polyfix PLYDT Catalytic	10M/MG	01-01032	$5.90
Polyfix PLYDT Catalytic	1/2 PT	01-01033	$39.95
Polyfix PLYDT Catalytic	1 PT	01-01034	$68.75
Polyfix 10000 Accelerator	2 OZ	01-01035	$11.75
Polyfix 10000 Accel	8OZ	01-01036	$18.50
Polyfix 6000 Debonder	1 OZ	01-01037	$4.50

For Complete list of all kit components please visit our website at:
www.aircraftspruce.com

COMPOSITE MATERIALS PRACTICE KIT



All designers highly recommend that builders who are considering a composite project purchase this practice kit. It contains the excellent 26 page 11" x 17" manual by Burt Rutan entitled MOLDLESS COMPOSITE SANDWICH HOMEBUILT/ AIRCRAFT CONSTRUCTION ($14.50) plus the assorted foams, epoxy, fiberglass, filler materials and supplies with which to work. Everything needed to practice the technique of composite building before venturing into a complete aircraft project.

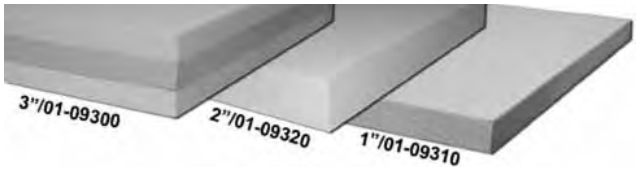
Practice Kit with Manual ..... P/N 01-15000 ..... $99.95
Practice Kit without Manual ..... P/N 01-15100 ..... $89.75
International Practice Kit with Manual ..... P/N 01-15050 ..... $59.50
Same as Practice kit with the manual, but excludes the epoxy for International shipping.

BACKSAVER FOAM

Backsaver foam is temperature sensitive, softening when it comes in contact with a warm surface; Thus, in a seat cushion, the foam softens and conforms to the person's body. This provides even pressure distribution and unconstricted blood circulation, significantly reducing discomfort, even over long periods. In addition, Backsaver foam has excellent energy absorption properties, which have made it excellent for use in the U. S. space shuttle program and in military aircraft and helicopters. Pilots find that Backsaver cushions reduce their discomfort and fatigue, even on missions of 8 hours or more. Aircraft Spruce now makes Backsaver foam available to the homebuilt and general aviation market.

17" x 18" sheet ..... P/N 01-09325 ..... $92.50 ea.
48" x 72" sheet ..... P/N 01-09330 ..... $541.00 ea.

CONFOR FOAM SEAT CUSHION



Confor Form (formerly called Temperfoam) is the conforming foam cushion that was developed for the "Astronaut's Couch" back in the Apollo space program. Confor Foam has the capability of absorbing a tremendous amount of impact shock compared to common polyfoam and it is flame resistant. It is an excellent product that will give your seats enduring comfort that you never thought possible. Adapts to you for pressure point-free comfort that is really incredible. The best universal cushion for aircraft use is a 3" CF42/CF45/CF47 laminate. Confor Foam meets FAR 25.853, FAR 25.855, and CAL 117 burn specifications making it excellent for certified aircraft or homebuilts. Some special sizes in 1", 2", or 3" thicknesses are available on special request.

1" x 16" x 18" ..... P/N 01-09310 ..... $25.50 ea.
2" x 16" x 18" ..... P/N 01-09320 ..... $48.50 ea.
3" x 16" x 18" ..... P/N 01-09300 ..... $83.75 ea.

INFLATABLE LUMBAR SUPPORT

The inflatable air pillow can be installed just under the seat material and will give you the customized support where you need it. A convenient palm-size pump and a release valve control the firmness of the lumbar support. The In-Flight Back Support is made of a heavy-duty self-extinguishing neoprene rubber, specially designed to pass FAR 23.853 flame-test requirements.

One inflatable lumbar support ..... P/N 13-01501 ..... $49.75
Two Inflatable lumbar supports ..... P/N 13-01821 ..... $81.95

WEST SYSTEMS FIBERGLASS REPAIR KITS

Here is everything you need to complete small repairs around the boat, shop or home.

Part # 01-08760 Contains: • #101 Handy Repair Pack - Convenient kit contains enough material to complete one repair. • Two 16g. packets of #105 Resin • Two 3.2g. packets of #205 Hardener • 3.5g. High Density Filler • 1 application brush • Ground Shipping Only • #101-6 Maxi Repair Pack - This kit is large enough to tackle a multitude of repair jobs.

Part # 01-08770 Contains: • Six 16g packets of #105 Resin • Six 3.2g packets of #205 Hardener • 12g of Low-Density Filler • 4g. High density Filler • 1 syringe, 4 mixing sticks, 4 cleaning pads • 2 application brushes, 2 pipe cleaners • 1 pair disposable gloves, 4 mixing cups • Illustrated instructions.

101 Handy Repair Pack ..... P/N 01-08760 ..... $10.50
101-6 Maxi Repair Kit ..... P/N 01-08770 ..... $34.01

VACUUM BAGGING TECHNIQUES BOOK - ..... P/N 01-14803

VACUUM BAGGING FILM - #7400 film is a high grade nylon 6 film. It is transparent green in color and heat stabilized for long term, 350°F cures. Film is soft & pliable and ideal for high temperature composites, metalbond, and any function requiring heat & pressure. Width: 54".
P/N 01-14805..... $1.55/Yd.

4.5 OZ. BREATHER/BLEEDER PLY - #3450 is a 4.5 oz./sq. yd. non-woven polyester breather system used for even volatile evacuation from vacuum bags. It can be used at pressures up to 85 psi (5.8 bars). Multi-directional conformability make it a very efficient breather. This breather does not contain any binders which could seal the air flow. Width: 60".
P/N 01-14810..... $1.85/Lin.Yd.

STRETCHLON VACUUM BAG FILM 60" - Modified urethane film with incredibly high elongation, Can be reused. .0015 x 60" x 200 ft (38µ x 1.52m x 62m) Maximum temperature use 250°F (122°C). 120" wide (3.04m). Perfect for compaction. Not affected by low humidity, always stays soft with no cracking. Can be heat seamed to custom shapes .
P/N 01-01080..... $4.80/Lin.Yd.

10 OZ. BREATHER/BLEEDER PLY - #3100 is a 10 oz./sq. yd. nonwoven polyester breather system used for even volatile evacuation from vacuum bags. It can be used at pressures up to 200 PSI (13.8 bars). Multi-directional conformability makes it a very efficient breather. This breather does not contain any binders which could cause seal-off of air flow. Width: 60". P/N 01-14815..... $4.50/Lin.Yd.

2 OZ. NYLON RELEASE PLY - #5201 SRB is a smooth nylon fabric which has been scoured and heat set so that it is contaminate free and will not shrink during the laminate cure cycle. It is then coated with a special release blend. The peel ply may be used for composite manufacturing and metal bonding, but is not recommended for use with resin systems containing phenolic. Thickness: .005". Color: Blue. Width 60".
P/N 01-14820..... $8.65/Lin.Yd.

3 OZ. POLYESTER RELEASE PLY - #5252SRB is a medium coarse weave polyester peel ply that leaves a surface with a rougher texture. It has been scoured and heat set to eliminate shrinkage during use and then coated with a special release blend. It can be used on all composite and metal bonding systems and is not affected by resin systems containing phenolic. #5252 provides protection of the laminate surface between primary & secondary processing. Thickness: .006". Color: Blue. Width: 60". P/N 01-14825..... $9.75/Lin.Yd.

RELEASE FILM - #2410 material is the most economical release film available that can be used at temperatures over 350° F. The film has handling qualities similar to the lowest priced halohydrocarbon film. Thickness: .002". Color: Clear. Width: 54".
P/N 01-14830..... $3.10/Lin.Yd.

POROUS TEFLON COATED RELEASE FILM - #7025 is used where a medium weight porous release fabric is required on the surface of a part. During the cure of the assembly it will allow excess resin and all of the air and volatiles to pass into the bleed/breather ply (CFM Airflow 70). At completion of the cure the fabric will release cleanly from the assembly. Color: Brown. Width: 37.5". 10 yard min. order.
P/N 01-14835..... $5.50/Lin.Yd.

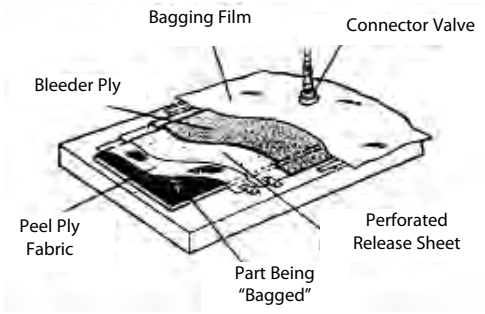
2410 RELEASE FILM - Release Film - 2410 material is the most economical release film available that can be used at temperatures over 350° F. The film has handling qualities similar to the lowest priced halohydrocarbon film. 54" wide, .002" thick.
Clear ..... P/N 01-14830..... $3.10
Blue..... P/N 01-01427..... $3.35

NON-POROUS TEFLON COATED RELEASE FABRIC - #7039 is a light weight extra smooth TFE coated glass fabric. Will leave little or no fabric imprint on most composite lay-ups. It is used as a release fabric where there is no requirement for bleeding or breathing resin or volatiles from the composite lay-up. It is mainly used for protecting caul sheets from resin contamination and as a release media on tool surfaces. Thickness: .003". Color: Brown. Width: 37.5". P/N 01-14840..... $13.50/Lin.Yd.

PERFORATED RELEASE SHEET E2760 - E 2760 is a red tinted, co-polymer, high elongation, low temperature release film with excellent conformability. An excellent release film for use on highly contoured parts for cure temperatures up to 250ºF. E 2760 offers good release properties in the curing temperature range where release films are required. The colored film provides for easy identification and removal from parts.
P/N 01-01194..... $4.99

FLASH TAPE - #6045-02 is a polyester backing film with a fully cured silicone adhesive. This tape is very tough and ideal for resin or adhesive flash removal. Color.: Blue. Thickness: .002". Roll size: 1" wide x 72 yds. P/N 01-14845..... $16.90/roll

400° F RESISTANT SEALANT TAPE - #4401 is a grey vacuum bag sealant tape that removes cleanly from the tool surface at the completion of the cure cycle. It can be used at any temperature up to 400° F. It can be used on any tool surface now in use and has been a standard of the industry for many years. It has high initial tack and is very easy to apply to prevent leaks between the bag and tool. It works well for composites, metalbond, or any function that requires temperature and/or pressure up to 400° F. Color: Grey. Size: 1/8" x 1/2" x 25 ft.
P/N 01-14850..... $6.45/roll



VACUUM VALVE - TWO PIECE - #8112 is a two-piece vacuum valve which requires one quarter turn to lock in place. Service temperature to 500° F. This valve is an industry standard The base is anodized and is red in color. Inside Diameter: 1/4" standard. Threads: 1/4" NPT.
P/N 01-14855..... $28.50/ea.

OVEN VACUUM HOSE - #8020 is a thick walled, flexible silicone hose. It is normally used for debulking and oven cures using vacuum only. Furnished in standard 10 foot lengths. Other lengths available on special order. Hose size: 1/4" ID. P/N 01-14860..... $104.75/ea.

HIGH TEMPERATURE QUICK DISCONNECT SET - #8432 is a two-piece quick disconnect both male and female for use to 500° F at pressures up to 200 psi (13.8 bars). Sold as a set of male & female components.
P/N 01-14865..... $24.85/set

SHRINK TAPE - #9010 is an oriented polyester film designed to shrink as the laminate approaches cure temperature. The applied pressure is maintained during cure. It is used extensively where the shape of the assembly makes conventional bagging too labor-intensive. If excess resin needs to be released during cure, perforating the shrink tape after the assembly has been wrapped with a porcupine roller will reduce the resin content as well as permitting air and volatiles to escape. Thickness: .002". Width: 1-1/4", Roll length: 100 yds.
P/N 01-14870..... $15.85/roll

GREENFLOW 75 - Greenflow 75 is designed to efficiently distribute resin with little waste due to the low profile, tight construction. Greenflow 75 can be used with polyester vinlyester and epoxy resins. Color: Green. Thickness: .035± .003 (.89mm±75µm). Melt Point (Method:DSC): 230°F (161°C). Configuration of Net: Rhombic
P/N 01-01081..... $3.35/Lin. Yd.

SEALANT TAPE ROLLER - #9050 is a plastic roller designed to assist in applying sealant tape between the bag and the tool. It assists the operator in applying maximum pressure to make a leak-proof, smooth seal. The unit is lightweight and easy to use, and the plastic roller helps prevent damage to the film. Roller width: 1-3/16". Roller Diameter: 1-3/8".
P/N 01-14875..... $24.50/ea.

PORCUPINE ROLLER - #9060 is a steel roller with a wood handle designed to perforate films to allow air, volatiles, and some resin to flow through the film. The amount of resin flow can be controlled by the depth of the pin penetration. Also useful on foam to give the bonding adhesive a better grip on the foam surface. P/N 01-14880..... $87.80/ea.

VACUUM GAUGE - a dial faced vacuum gauge capable of displaying vacuum from 0" to 30" Hg. It is 2" in diameter and can be used on the vacuum pump line, holding tank, or with a vacuum valve to determine vacuum in specific areas of a bagged assembly. Fitting size: 1/4" NPT.
P/N 01-14885..... $17.60/ea.

VACUUM PUMP - Standard vacuum pump ideal for small shop vacuum bagging operations. P/N 01-14891..... $443.00/ea.

VACUUM PUMP KIT - Includes vacuum pump, gauge, valve, fittings, and hose. P/N 01-00164..... $510.00

VACUUM RELIEF VALVE - P/N 52763 ..... $16.50

BAGGING SUPPLIES STARTER KIT - Includes 10 yards of Vacuum Bagging Film #7400, 10 yards of 4.5oz. Breather Bleeder #3, 1 roll 400° resistant Sealant Tape (25 yards/roll), 10 yards Dacron Fabric 1.8oz.x 60", & 10 yards 60" x .001 Perforated Release Sheet.
P/N 01-14894..... $128.95

ECONOMY VACUUM GENERATOR - a low cost and reliable method of generating a vacuum for those who already own an air compressor. The generator will create 27" of Hg vacuum/pressure when coupled in-line to an air compressor capable of producing 2.2 cfm. Larger air compressors are advisable for continuous use applications. Suitable for parts up to 80 ft2. P/N 12-11148..... $192.75

RESIN LINE CLAMP FOR VACUUM INFUSION

Clamp is designed to easily control vacuum and resin from fully on to fully off or anywhere in between. The ergonomic, over-sized, knurled knob allows precise control. It is simple to install and remove and is light enough to hang on the hose. Rugged all metal construction will provide years of service. It will not cut the hose like vise plier clamps. The bright anodized knob makes it easy to find. Will accommodate hoses up to 1/2" OD and is made in the USA. P/N 01-01220..... $16.95

AIRCRAFT PLASTIC REPAIR

CM

A complete line of plastic repair an drefinishing products, as well as instructional materials, which make plastic repair easy and effective. Why spend alot of money on aftermarket aircraft parts, when quality repairs can easily be made on the originals? The materials listed below are specifically engineered to be used on plastics and can be used to repair and refinish the following: Cracked or broken instrument panels, wingtips, fairings, yokes, wheel pants, all types of plastic fairings, strut and landing gear fillets, headset housings, antenna housings, stripped threads and cracked mounting holes in plastic components and more! These materials can also be used to fabricate missing sections of your existing component or to create small parts.

1000-A SUPER CLEAN PLASTIC CLEANER (19 FL.OZ.)

Before doing any sort of plastic repair, use Super Clean plastic cleaner to maximize the durability of your repair. Super Clean removes mold release agents, wax, grease, silicone, tar, bugs, sealers and other contaminants from painted or unpainted plastic or metal surfaces. It's simple to use, just spray it on and wipe it off with a clean, lint-free cloth.

P/N 01-00533 ..... $11.75

2020-T SMC HARD-SET FILLER (2-5OZ. TUBES)

SMC Hard-set Filler is a 2-part epoxy system that is very rigid when fully cured. It works on ABS, SMC, fiberglass, polycarbonate and on any other repair application that requires a rigid, high impact resistant repair material. It has a working time of 3 to 4 minutes and is ready to sand in 15 minutes.

P/N 01-00534..... $21.60

2045W STAINLESS STEEL REINFORCING MESH (50 SQ.IN.-5"X10")

Reinforcing Wire Mesh is designed to be used to reinforce any repair made with an airless plastic welder. We recommend that the mesh be used to when a tear goes to the edge of the plastic. Since it is stainless steel, it is 5 times stronger than aluminum wire screen and is virtually impervious to oxidation under normal conditions. You can also use the mesh to fabricate tabs, fill holes and provide reinforcement in any meltable plastic.

P/N 01-00536 ..... $5.25

2100-1 SMALL INSTA-WELD KIT

Each Insta-Weld Kit comes with Insta-Weld 1, Insta-Weld 2, Activator, and Weld Compound. A complete set of instructions is included with each kit. This kit is designed to repair SMC, fiberglass, hard plastics, metals, rubber and other materials too numerous to mention. It does not work on polypropylene, polyethylene or TPO substrates. The small Insta-Weld Kit comes with a 1 oz. bottle of both the Insta-Weld 1, Insta-Weld 2 & 2 oz. bottle of Activator & weld compound.

P/N 01-00538..... $31.25

2200-1 INSTA-WELD 1 (THIN)

Insta-Weld 1 is our "thin" adhesive and is to be used when you have a clean break with no gap to fill. It has the consistency of water. To use, spray the borken area with 2303 Activator, clamp the parts together then appy a small amount of Insta-Weld 1. The adhesive will wick into the crack and create an instant repair. It does not work on polypropylene, polyethylene or TPO substrates.

P/N 01-00539.....$13.50

2250-1 INSTA-WELD 2 (THICK)

Insta-Weld 2 is our "thick" adhesive and is to be used when it is necessary to fill a gap. Insta-Weld 2 is about the consistency of 30 weight oil. To use, spray one side of the break with 2303 Activator, apply Insta-Weld 2 to the other side, then clamp together. It does not work on polypropylene, polyethylene, or TPO substrates.

P/N 01-00540 ..... $13.85

2303-3 INSTA-WELD ACTIVATOR (2FL. OZ. W/SPRAYER)

Our quick spray Activator causes instant curing of all Insta-Weld adhesives. Actovator may be used before or after adhesive is applied. Come in plastic bottles and include sprayer.

P/N 01-00541 ..... $12.50

PLASTIFIX REPAIR KITS

Plastifix repairs virtually any rigid plastic and works exceptionally well on ABS. Repair cracks, fill gaps, reinforce repairs, rebuild broken tabs, fix stripped threads, and more. PlastiFix's most unique feature is the FlexMold molding bar which allows you to create a mold and cast missing pieces. No other plastic repair is more versatile. the 30 gram kits are enough to complete approximately 24"+ of cracked plastic repair. The large kits will do about 24 feet. Kit Includes: 253X Plastifix Powder 30G, 2520 Plastifix Liquid 50ML, 2542 Dropper Bottle Assembly, 2543 Power Application Cup, 2548 Transfer Pipette, 2550 Applicator Needle Qty: 2, 2560 Flexmold Molding Bar 10CC.

2501-PlastiFix Repair Kit (30g, white) ..... P/N 01-00542 .....$30.75
2503-PlastiFix Repair Kit (30g, black) ..... P/N 01-00543 .....$29.85
2504-PlastiFix Repair Kit (30g, clear) ..... P/N 01-00544 .....$29.85
2502-Large Kit includes: 2531-L Plastifix Power 150G (WHITE), 2532-L Plastifix Power 150G (BLACK), 2520 Plastifix Liquid 250ML, 2542 Dropper Bottle Assembly QTY 2, 2543 Power Application Cup QTY 2
2548 Large Transfer Pipette, 2550 Applicator Needle QTY 4
P/N 01-00545 .....$89.75

3800-4 FLEX-TEX FLEXIBLE TEXTURE MATERIAL (QUART)

Flex-Tex is a unique blend of materials designed to be used for re-texturing repaired areas on instrument panels, consoles, etc. A wide variety of pebble-grained textures can be achieved with this product by varying the air pressure, distance from work, and speed of pass. Apply with a regular spray gun or a PreVal sprayer. Dries flat black. Must be top-coated with color for durability and appearance. P/N 01-00546.....$28.50

BUMPER & CLADDING COAT (PINT)

Permanently recolor faded, scuffed, marred, or discolored plastics. Sticks to plastic without adhesion promter or primer. Just clean the plastic with Super Clean Plastic Cleaner & spray the paint. No mixing required! Gives satiny, OEM look when dry.

Black (pint).....P/N 01-00548.....$35.00
3601-4 Light Gray (quart).....P/N 01-00552.....$79.85
3602-4 Dark Gray (quart).....P/N 01-00553.....$59.85

CS100 CLEAN SHEETS

Clean Sheets are great to have around the shop. They allow you to keep your epoxy mixes clean and smooth while saving time by always having a clean surface to mix on. No more cutting cardboard to mix epoxy. 100 sheets per board.

P/N 01-00550..... $32.50

2043-U UNI-CLOTH FIBERGLASS CLOTH (9 SQ.FT.)

Uni-Cloth is a quality fiberglass cloth that is well suited for reinforcing plastic repairs as well as any other application requiring fiberglass reinforcement.

P/N 01-00535.....$15.50

Plastics Repair Instructional Book - P/N 01-00554.....$28.25
Plastics Repair Instructional DVD - P/N 01-00555.....$14.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

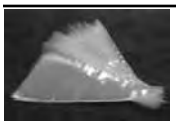
GLASS BUBBLES

These bubbles are actually hollow glass spheres. Because the high-quality glass is very crush resistant, the foam is much stronger, stiffer and water-resistant than any foam made by chemical foaming. These foams displace 4-6 times their weight in most resins and improve the handling characteristics of the base resin. They have a low bulk density and are nontoxic. Mix resin and hardener as directed, then fold in the glass bubbles. Upon cure, a strong, low-density product results which is easy to sand and file. May be shaped to form compound angles and curves. The term "micro" was applied to the mixture of microspheres and epoxy early in the development of composite structures. Although microspheres have been replaced by glass bubbles the word "micro" is still commonly used to reference the mixture. "Micro' is used to fill voids and low areas, to glue foam blocks together and as a bond between foams and glass cloth. Micro is used in three consistencies - (1) a "slurry" which is a one-to-one by volume mix of epoxy and glass bubbles, (2) "wet micro" which is about two to four parts glass bubbles by volume to one part epoxy, and (3) "dry micro" which is a mix of epoxy with enough glass bubbles to obtain a paste which will not sag or run (about five parts to one by volume). In all instances glass bubbles are added to completely mixed epoxy resin and hardener. Wet micro is used to join foam blocks and is much thicker than slurry (it has the consistency of honey) but can be brushed. Dry micro is used to fill low spots and voids and is mixed so that it is a dry paste and will not sag. Apply with a putty knife. Never use micro between glass layers.

CAUTION - When mixing epoxy and glass bubbles, wear a dust mask and keep your face away from the balloons that may float up into the air. Although glass balloons are inert, they can lodge in your eyes or in your lungs and cause problems. Handle with care.

One Pound Bag (Approx. 1 Gal.).....P/N 01-14600..... $9.65

Five Pound Bag (Approx. 5 Gal.) .....P/N 01-14700.....$39.85



DISPOSABLE ICING BAGS

These 12" disposable icing bags are ideal for applying beads of any size of micro epoxy or flox epoxy to all surfaces. Great for close-outs and are real time savers. Simply fill, cut end to desired bead size and squeeze. Never breaks down from epoxy. Sold in packs of 100 icing bags.Pack of 100 bags P/N 01-14710.....$14.75

CAB-O-SIL

Cab-O-Sil is a fumed lightweight silica thickener used to reduce the flow of epoxies on vertical surfaces, as well as filling pinholes with its smooth texture.

1 gallon bag P/N 01-04711..... $11.95

FLOCKED COTTON FIBER

A structural resin filler. The mixture of cotton fiber and epoxy is referred to as "flox". The mixture is used in structural joints and in areas where a very hard, durable buildup is required. Flox is mixed in much the same way as dry micro but only about two parts flock to one part epoxy is required. Mix in just enough flock to make the mixture stand up. If "wet flox" is called out, mix it so it will sag or run. Flox is often used to reinforce a sharp corner. Paint a light coat of pure epoxy inside the corner, trowel flox in to make a triangular support. The flox corner is done just before one glass surface is applied for a wet bond to one surface.

1 Lb. Bag..... P/N 01-14800..... $3.95

5 Lb. Bag..... P/N 01-14900.....$19.75

MILLED GLASS FIBERS

As the name implies, this material is made by milling fiberglass into a very thin consistency. This material is used in preparing a structural filler. This material is used in fillets that require structural integrity. Milled fiber fillers have higher strength than cotton flock but have fine particles of fiberglass that can penetrate the skin.1 Lb P/N 01-14780..... $4.85

PELOUZE DYMO DIGITAL SCALE

Ultra-compact design for super portability.

Features an LCD screen with easy-to-read digital readout. Convenient "hold" feature locks weight display for ten seconds after item is removed. Digital postal rates. Rates update with Internet download. Operates on: 3 AAA Batteries (included). ..... P/N 12-01580.....$48.90

3M™ #77 SPRAY ADHESIVE

This aerosol spray adhesive works well to laminate styrofoam sheets together. Laminations cut well with a hot wire. Net wt. 16.75 oz.

24 fl. oz. Aerosol Spray Can.....P/N 09-28330 ..... $18.50

PUTTY FLEX FILLER

Urethane Supply Company's 1047 Putty Flex is a premium polyester finishing glaze that provides superior adhesion with excellent flexibility on plastics. Putty Flex produces excellent feather edge results on plastic, metal, SMC, fiberglass, cured primer and paint. Use to fill pinholes, dings, scrapes, sanding scratches and more! Putty Flex sands easily and resists clogging sandpaper.

P/N 01-00961..... $23.75

ECONOMY DIGITAL SCALE

LCD display that shows ounces, pounds or grams. "Tare" feature lets you "zero-out" container's weight. Sealed buttons prevent damage from spills. Maximum capacity of 176 ounces (11 lbs. or 5000 grams) Automatic 40 second shutoff saves batteries. Not for commercial use. Uses four AA batteries, not included. Overall dimensions: 9-1/2" L x 6-3/4" W x 1-1/2" H P/N 12-02585..... $32.50

HI BUILD POLYESTER SANDING PRIMERS

* Quick Build Primer * Quickly fills uneven surfaces, and major imperfections * Easy sanding prep for surface primer, top coats * Low VOC product * Perfect Primer for prestec topcoats or any other surface coatings desired * Fairly Hi-Build to 120mils

Color	Size	Part No.	Price	Color	Size	Part No.	Price
Gray	Quart	09-02162	$34.25	Gray	Gallon	09-02163	$82.75
Black	Quart	09-02164	$34.25	Black	Gallon	09-02165	$82.75
White	Quart	09-02166	$33.85	White	Gallon	09-02167	$82.75

Requires Catalyst P/N 01-01119.

DYNALITE

A formulation of polyester resin, talcs and Microspheres used as a lightweight filler on metal and fiberglass. Works easily, sands faster. Only 7.5 lbs. per gallon as compared to 12 lbs. per gallon for conventional fillers.

494 Gallon.....P/N 01-00368.....$26.75

492 Quart.....P/N 01-01072.....$11.70

FIX-IT

A universal repair compound. It is excellent for rebuilding or fabricating parts and as an all purpose adhesive for wood, metals, ceramic, glass, and many plastics. Fix-it can be tapped or drilled, sanded, filed or painted. Patch holes and cracks and seals leaks. Sets rock hard overnight. Fix-It Metal is the same as standard Fix-It except it is loaded with aluminum metal to match the strength, weight, and use for each project. Fix-It is nontoxic, non-hazardous, and impervious to fuels and liquids.

Fit-It 1/4 Lb kit.....P/N 01-14770.....$10.95

Fit-It 1 Lb kit..... P/N 01-14775.....$25.50

Fit-It Metal 1/4 Lb kit ..... P/N 01-14790.....$12.65

Fit-It Metal 1 Lb kit..... P/N 01-14795.....$21.70

MEGUIAR'S MOLD RELEASE #8

Meguiar's® Mold Release Wax is a blend of imported waxes specially formulated to provide a maximum number of releases per application.

P/N 01-09415..... $12.50

SUPERFIL BY POLY-FIBER

An ultra-light, corrosion-inhibiting filler for aircraft, marine and automotive use. Adheres to composites, bare aluminum, steel and bare or varnished wood. Easy to mix & apply: mix 2 parts A:1 part B by weight: apply with squeegee; let dry overnight. Excellent sanding qualities. More consistent than hand-mixed micros. Wt: less than 5 lbs/gal. Ships Non-Hazmat.

1 Quart Kit (20oz. Resin/12oz Hdnr) ..... P/N 09-28250 ..... $22.90
3 Gal Kit (2 gal.Resin/1 gal. Hdnr) ..... P/N 09-28260 ..... $204.60

UV SMOOTH PRIME FILLER/PRIMER

The pinhole killer! Waterborne polyurethane primer plus UV blocker applied with a foam roller or spray gun. Fills pinholes in layups or molded parts. White color. Once UV Smooth Prime has dried for 7 days, spray white two-part catalyzed Epoxy Primer to seal the surface and provide moisture and chemical resistance prior to spraying top coat paint. Dry sand for a smooth, pinhole-free surface. Dries in 20 minutes, sand in two hours. Clean up with water. Use Poly-Fiber Gun Cleaner to clean your spray gun after each day's spraying. NON-HAZMAT. Three gallons required for most composite aircraft. CROSSLINKING NO LONGER REQUIRED.

1 qt. w/16 Crosslinker ..... P/N 09-28280 ..... $58.20
1 gal. w/64 Crosslinker ..... P/N 09-28290 ..... $176.00

FEATHER FILL

A sprayable polyester filler/primer used for filling of minor surface irregularities such as scratches, blemishes and exposed fiberglass threads before final sanding and painting. It adheres to bare metal, plastic filler and fiberglass with minimal surface preparation. Cures ready to sand and paint in 45 - 60 minutes. Any type of finish - lacquer, enamel, acrylics - can be applied over Feather Fill with excellent adhesion. Quart kit includes catalyst and instructions. Approximately six quarts are required for finishing a Vari-Eze. DO NOT WET SAND.

#401 (1 Qt.) ..... P/N 01-00369 ..... $49.90
#391 (1 Gal.) ..... P/N 01-00370 ..... $139.90

RUST DEFENDER SANDABLE FILLER

A one step finishing material from bare metal, body filler plastic, wood, aluminum, or fiberglass to a surface ready to accept any type of paint without concern about penetration of solvents or moisture. Provides fast build-up and fill, is non-shrinking, easy sanding, wet sandable and waterproof, and self-etching. Can be sprayed or brushed on and can be built up like Bondo or Featherfill. Ready to sand in one hour, and it does not clog up your sandpaper. Pot life and cure time aare about one hour at 70 degrees Farenheit. Versatile polyester filler.

Quart ..... P/N 01-00558 ..... $78.65
Gallon ..... P/N 01-00559 ..... $174.75

FILL BOND PUTTY

Fill Bond aerospace putty from Sherwin-Williams Aerospace Coatings has been created specifically for aerospace use. Designed to fill rivets, seams and small spot-repair areas on the exterior of aircraft fuselage and wings, this high-build body filler is now available in a convenient epoxy version. Fill Bond putty is extremely flexible, offers direct-to-metal adhesion (with properly pretreated aluminum), provides excellent spread ability and offers a long, workable pot life to give users the amount of time to apply material on a variety of aircraft surfaces, including aluminum and composites. The epoxy putty dries quickly for a fast sand - in just two to six hours. A specially-designed Fill Bond dispensing gun enables users to apply putty exactly where it is needed without requiring additional tools. There's minimal waste following application. Users apply only as much product as they need and then can put the cap back on the convenient cartridge containers for later user, saving on material and disposal costs.

Fill Bond Cartridge 750ML ..... P/N 01-01124 ..... $109.85
Fill Bond Cartridge 375ML ..... P/N 01-01125 ..... $83.75
Manual Dispensing Gun 370ML ..... P/N 01-01126 ..... $143.80
Manual Dispensing Gun 750ML ..... P/N 01-01127 ..... $234.95
Static Mixer Element ..... P/N 01-01128 ..... $6.50

AEROPOXY LIGHT FILLER

AEROPOXY Light is a two-component, lightweight epoxy patching and filler paste for foam, wood, and composite surfaces. It mixes easily, applies smoothly, bonds strongly and sands quickly to make the hard job of surface filling much easier.

Color	AEROPOXY Light Reddish Tan	Test Method Visual
Mix Ratio	2 to 1 by weight or Volume	Calculated
Gel Time, 100 gms	2-3 hrs. To Shape	
@ 77°F	5-6 hrs. To Sand	ASTM D2471
	24 hrs. Full Cure	
Specific Gravity	.49	ASTM D792
Cured Hardness	53 Shore D	ASTM D2240
Compressive Strength	2156 psi	ASTM D695

AEROPOXY LIGHT 1/2 LB KIT - P/N 02-30006 ..... $34.50
AEROPOXY LIGHT 6 LB KIT - P/N 02-30007 ..... $109.75

HYSOL EPOXY PATCH KITS

EPL0151 is a clear two part resin / hardener which is ideal for bonding fiberglass, PVC, and graphite. Cure time is 6-8 hours. EPK1C is a white 2-part resin / hardener epoxy system which is used to bond aluminum and ceramics.

EPK0151 Kit, 3.35 oz. (fiberglass) ..... P/N 01-15875 ..... $13.85
EPK1C Kit 4.0 oz kit (aluminum) ..... P/N 01-15880 ..... $11.85

LITE WEIGHT FILLER

Lite Weight autobody filler is a very versatile filler which is excellent for holding jig blocks in place during composite construction. Applies evenly and allows sanding within minutes. Cures well even in humid climates. Creme hardener is included.

Quart ..... P/N 01-00243 ..... $17.50
Gallon ..... P/N 01-00244 ..... $27.65

WEST SYSTEM 410 MICROLIGHT

An excellent filler which provides easy workability for a variety of applications. Easy to sand and cures to a neutral tan color.

1.7 Oz. ..... P/N 01-08780 ..... $15.69
4.3 Oz. ..... P/N 01-08785 ..... $31.10

EPOXY SURFACE COAT

#1099 is a white, thickened epoxy material used to created the durable surface coat on room temperature epoxy molds. This surface coat can be brushed on as thick as 1/8" at a time without developing runs or sags. It is specially formulated to provide strong interlaminar bonds with the reinforcing materials, even if it is left unsupported overnight. #1099 readily accepts all our pigments, resists chipping and cracking, and retains its high gloss. Mix Ratio by Weight – 100:11.

3.33 lb. Quart kit ..... P/N 09-01099 ..... $71.85
Case ..... P/N 09-01099-1 ..... $544.00

PRIME COAT PRIMER / FILLER

Prime Coat ia s sandable, quick-drying aerosol primer which fills pin holes and scratches caused ny sanding on fiberglass, wood, metals and many plastics. Prime Coat will prepare the surface of materials for the finish coat and provides an effective corrosion barrier as well. Prime Coat is zinc chromate yellow and can be used under lacquer, enamel, acrylic or epoxy finish coats. 11 oz. can.

P/N 01-00305 ..... $11.50

PEEL PLY

A layer of 2.7 oz. Dacron fabric strips or tape laminated into a layup as if it were an extra ply of glass. The peel coat wets out with epoxy like glass cloth and cures along with the rest of the layup. However, the Dacron does not adhere structurally to the glass and when peeled away it leaves a surface ready for glass-to-glass bonding without sanding.

Requirements for Small Aircraft:

• 3 Rolls of 1" x 50 Yds. Tape • 2 Rolls of 2" x 50 Yds. Tape .....• 1 Roll of 3" x 50 Yds. Tape • 1 Roll of 4" x 50 Yds. Tape

Width	Smooth Edge		Pinked	
50 Yd Roll	P/N 09-	Price/ Roll	P/N 09-	Price/ Roll
1"	15000	$5.40	15450	$7.50
2"	15100	$13.85	15500	$13.75
3"	15200	$21.75	15600	$19.90
4"	15300	$28.75	15700	$27.25
6"	15400	$44.25	15800	$39.85

Discount Schedule for Dacron Tapes: Less 10% for 12 Rolls (assorted) • Less 15% for 25 Rolls (assorted). Request quote on larger quantities.

FULL WIDTH PEEL PLY

Poly/Dacron blend is excellent as peel ply for composite lay-ups.

Full Width Peel Ply 2.7OZ, 64-66" #604
(Sold by the Yard) ..... P/N 09-00300.....$4.75

Full Width Peel Ply 1.8 oz. X 64" #611
(Sold by the Yard) ..... P/N 09-00100.....$3.90

Full Width Peel Ply 2.97 oz. X 62" #605
(Sold By the Yard)..... P/N 09-00500.....$3.95

MOLD RELEASE AGENTS

POL-EASE ® 2300 MOLD RELEASE

Provides superior release with minimum buildup on mold surfaces for casting urethane elastomers, epoxy, polyester, and rubber compounds. Molded parts are easily cleaned for finishing operations. It is effective on aluminum, steel, epoxy, polyester, and elastomeric molds; it does not distort intricate patterns. P/N 01-31749 .....$27.75

MAXIMUM MOLD RELEASE WAX

Meguiar's® Mold Release Wax is a blend of imported waxes specially formulated to provide a maximum number of releases per application.
P/N 01-09415 ..... $12.50

MOLD RELEASE WAX

High-temperature paste wax. 14 oz.
P/N 01-00177 ..... $16.90

FIBERGLASS MOLD RELEASE

Plastilease 512B, a film-forming, water soluble parting agent, assures clean release of fiberglass parts from molds. For application by brush or spray.
P/N 01-30600 ..... $31.75/Qt.

LPS MRX SILICONE MOLD RELEASE

Excellent for releasing molded parts in high temperature and extreme pressure environments. MRX Silicone Spray Mold Release provides maximum releases and superior value for the end-user. This non-staining, non-corrosive mold release is heat stable up to 500°F. It is a nonflammable product and contains no class I or II ozone depleting chemicals. Like all LPS MR-series mold releases, MRX Silicone Spray Mold Release doesn't use Methylene Chloride.
16 oz. aerosol can.....P/N 09-00271 ..... $12.85

PVA RELEASE FILM

PVA (Polyvinyl Alcohol) should be used with #1016 Wax to aid in the release of parts form a mold. It should be applied in 3 thin mist coats over nonpourous, waxed mold surfaces.After the final wax coat has dried, begin by spraying a light tack coat of PVA. Typically, within 5 mins. the final heavier coats can be added. The PVA dries to form a smooth, glassy film. After part release, the residual film can be removed with water. We recommend using an inexpensive automotive siphon spray gun and 70-90 psi for application, although airbrushes will work on hobby size projects. PVA can also be sprayed over any polyester repair to provide an airless tack-free cure. For use with epoxies.
P/N 01-14813A.....$22.85/qt

ZOLATONE COCKPIT PAINT

Used to paint cockpit interiors, excellent on fiberglass. Gives a coarse, durable, professional finish. 1 gallon required for Long-EZ cockpit. Primer not required when used on fiberglass. Color chart available on request. Order Color Chart P/N 01-15815.

Color	Use Primer	Part No.	Price
White/White	White	20-02	$143.75
Apollo Gray	-	20-11	$152.75
Hamlet Black	-	20-42	$135.95
Camille White	White	20-54	$152.75
Lilith Charcoal	Black	20-59	$144.95
Gray Stone	Gray	20-64	$157.95
Onyx Black	-	20-71	$135.90
Silver Gray	Gray	20-72	$144.95
Bright Blue	-	20-77	$165.95
Dark Red	-	20-78	$147.85
Desert Camo	Black	20-80	$146.75
Emerald Green	-	20-85	$129.85

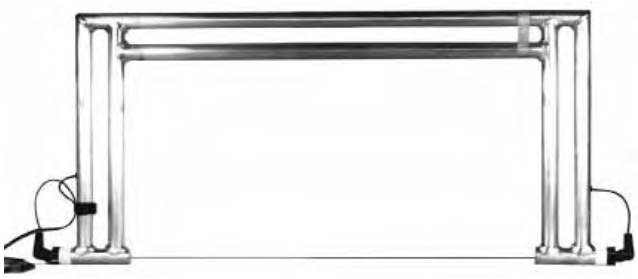
HI GLOSS CLEAR POLYESTER TOP COAT

Features: * Super Clear - Glass like appearance * Scratch Resistant * Buffs to a Super Hi-Gloss Finish * Refinishes to Original Hi-Gloss * Practically a Walk-A-Way Gloss Finish Product Applications: * Exotic wood coating * Gel coat additive for air cure application * Musical instrument wood coating * Top coat over clear primers * Top coat over pigmented colors for clear depth * Automotive interior composite parts clear coating * Archetectural wood crafts
Quart..... P/N 09-02168 .....$36.50
Gallon ..... P/N 09-02169 ..... $104.50
Requires Catalyst P/N 01-01119.

AIRCRAFT DESIGNER APPROVED TOOLS

The tools offered in this section have been selected by professional aircraft designers and builders as being either necessary or highly desirable for working with composite structures.

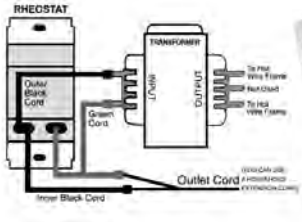
KUT-MASTER FOAM CUTTING FRAME



These custom-built foam cutting frames can help produce professional results in foam cutting for the amateur builder. Constructed of 1-1/8" O.D. aluminum tubing, the heli-arc welded frame is lightweight yet extremely durable. The frames come completely pre-wired and ready to attach to the voltage controls shown below, and a tensioning system maintains uniform wire tension throughout the cutting process. The frames are stocked in 3 standard lengths, and custom frames are available on request (send sketch). Cutting depth is 11". Weight- 5 lbs.

2 Ft. Frame ..... P/N 01-15200 ..... $197.00
3 Ft Frame ..... P/N 01-15300 ..... $218.00
4 Ft Frame ..... P/N 01-15400 ..... $234.00

HOMEBUILDERS SPECIAL HOTWIRE KIT



An excellent new hot wire system consisting of a controller and transformer. Recommended by Rutan Aircraft Factory as a good system at a very economical price .

P/N 01-15600 ..... $43.75

SAFETY WIRE

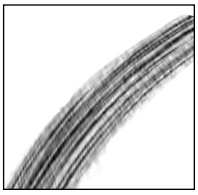
Type 302 stainless steel safety wire, for hot wire cutter. This is superior to nichrome wire, which is brittle and breaks easily. Specify .032" or .041" diameter wire.

.032" Dia. Wire, 25 Ft. Coil ..... P/N 01-15725 ..... $1.25
.041" Dia. Wire, 25 Ft. Coil ..... P/N 01-15825 ..... $1.25
1 Lb. Spool ..... P/N 05-02687 ..... $7.80

INCONEL 600 HOT WIRE

Does not stretch. Excellent for hotwiring polystyrene foam.

.032" Dia. Wire..... P/N 01-15805..... $0.35 ft.
.041" Dia. Wire..... P/N 01-15810..... $0.24 ft.



MUSIC WIRE

Music wire is high carbon steel and although very high in tensile strength, must be capable of wrapping around itself without showing signs of cracking. 156 ft. of .049" dia. wire per lb., 46 ft. of .090" dia. wire, per lb. 22 Ga. Price is per pound.

.049" Dia. (1 lbs.) ..... P/N 03-49500 ..... $3.97
.090" Dia.(32Ga.,1lbs.) ..... P/N 03-49600 ..... $4.35

TYPE 302 STAINLESS SPRING WIRE

062" Dia..... P/N 03-49610..... $0.26 ft

MICHAEL ENGINEERING EPOXY RATIO PUMPS

This highly recommended pump, aptly called "Sticky-Stuff Dispenser", will save about $50 in epoxy in building a VE type aircraft, plus time, mess, dermatitis, temper and risk of bad batches. Used by individual craftsmen and professionals alike, it is a practical engineering tool especially designed to eliminate the sticky, messy, costly hand proportioning of epoxy resins. It is well built and should last through the construction of dozens of aircraft. The Sticky-Stuff Dispenser assures accurate measurement of low-viscosity (under 3,500 centipoises) unfilled epoxy resin. The standard Model A dispenser pump delivers a ratio of 100 parts of resin to 44 parts of hardener.

Adjustable Ratio Pump ..... P/N 01-16010 ..... $298.00
Rebuild Kit for 45:100 pump..... P/N 01-00504..... $75.00
Small round replacement container (qt)..... P/N 01-15920..... $11.50
Large square replacement container (gal) ..... P/N 01-15910..... $17.75
Stainless Steel Check Valve (Use with Jeffco epoxies)
P/N 01-00258..... $56.50

CALRAD VARIABLE VOLTAGE CONTROL

A fine quality control to supply the electrical current for hot-wire cutting of styrofoam and PVC foam. One unit can serve to build many aircraft. Input 115 volts AC Output variable from 0 to 130 volts AC at 5 amps Caution - fuse should be inserted in the secondary to protect the control in the event of a short circuit.

Input: 117V AC 60Hz 3-Prong AC cord. Output: 0-130V AC Adj 60Hz; volt meter, power jack. Fuse Protection AGC: 5 Amp. Max: 500VA P/N 01-01294 ..... $174.75

COMPOSITE TOOL KIT

This kit includes an assortment of many of the commonly required tools used in composite construction.

QTY.	PART NO.	DESCRIPTION
1	20W	Glass Shears
1 box	01-25800	500 Mixing Sticks
2 boxes	01-25700	12 oz. Mixing Cups
2 boxes	01-25710	16 oz. Mixing Cups
10	01-24899	3" Plastic Squegee
10	09-21200	1" Disposable Brushes
10	09-21300	2" Disposable Brushes
1	12-01580	Electronic Scale
2 boxes	01-36550	Latex Gloves
1	GLR123D	1/2" x 3" Laminating Roller
1	GLR12C	1/2" Corner Roller
1	GLR26	2" x 6" Plastic Grooved Roller

Kit - P/N 01-00166 ..... $211.95

DISPOSABLE RESPIRATOR REPLACEMENT PARTS

Dusts, Mists, & Fumes Pre-Filter.....P/N 01-00382.....$1.65
Fit/Check Filter Cover .....P/N 7500-27 .....$2.30

GROOVED LAMINATING ROLLERS

These are the standard laminated rollers for wetting out woven roving and mat with polyester resin. Use with epoxy resin for applying tape into corners and for spreading thickened epoxy over large areas for gluing and fairing.

1"x 3".....P/N 01-01054.....$8.85
1"x 6".....P/N 01-00396.....$11.95
1"x 9".....P/N 01-00383.....$16.85
2"x 3".....P/N 01-00384.....$10.50
2"x 6".....P/N 01-00385.....$16.65
2"x 9".....P/N 01-00386.....$23.70
1/4" Corner Roller.....P/N 01-00387.....$10.95
1/2" Corner Roller.....P/N 01-00388.....$10.95
1/2"x 3" Detail Roller.....P/N 01-00389.....$7.65
3/4"x 3" Detail Roller.....P/N 01-00390.....$8.95
3/4"x 6" Detail Roller.....P/N 01-00391.....$10.65

EPOXY LAYUP ROLLERS

3" wide roller with stipple adhesive cover. Has excellent stippling action for working out air bubbles in layups and has no tendency to lift the cloth. Use on all major layups. Order frame and cover separately.

Roller Frame Only.....P/N 01-24902.....$6.75
Cover Only .....P/N 01-24903.....$4.35

PRECISE ACCU-KNIFE SET

Heavy duty cutting edges, Complete knife set. Over 40 blades to choose from.
Specifications: • Blades are made of the highest-grade steel and are ground to razor sharpness for precision cutting. • Features include positive-holding blade lock • Nonslip handles. Complete with 8 different handles • 44 sharp blades • An aluminum-oxide, wet/dry sharpening stone • Packed in a handy plastic carrying-storage case with magnets to keep the blades in place

Fine precision cutting tools for the lab-highest quality knife set. Ultra-micro to heavy-duty cutting edges are perfect for corks, paraffin, plant samples, and rubber tubing. Exceptionally sharp knives are ideal for delicate, close-tolerance, accurate cutting needs.

High-grade steel construction - Blades are made of the highest-grade steel and are ground to razor sharpness for precision cutting. Features include positive-holding blade lock, nonslip handles, and a perfect weight for balance.

Over 40 blades - Comes complete with 8 different handles, 44 sharp blades, and an aluminum-oxide, wet/dry sharpening stone. Set is packed in a handy plastic carrying-storage case with magnets to keep the blades in place. P/N 12-00381 .....$67.50

DISPENSER FOR MEKP CATALYST

Perfect to measure and pour catalyst. The bottle will hold 16 oz. of catalyst and dispenses liquid safely and accurately from 2.5 to 35 cc. Measurements are instantly repeatable.

P/N 01-08503.....$12.65

POST CURE KIT

This kit consists of one post cure thermometer (P/N 01-00394) and 1 regulating thermostat (P/N 08-12148) that allows control of electrical devices for heating.
Snap Disc Fan Control 3/4 inch SPST Flanged Airstream Mount, Open On Rise, 180°F Cut-Out Temperature, 40°F Differential. Therm-O-Disc Style 60T11, Type 610013 P/N 01-00393 .....$22.00

JIFFY MIXER

This is a very effective 2-1/2" diameter stainless steel mixer on a 15" shaft. Attach to an air drill for fast, efficient mixing of larger batches. It will not dig into or gouge the sides or bottom of your mixing container.

P/N 01-00395 .....$22.60

X-ACTO TOOLS

NO. 5282 KNIFE SET -

Nos . 1, 2 and 5 knives plus 10 assorted extra blades Handy, fitted chest.

P/N 01-17300.....$29.75

NO. 5083 KNIFE SET -

Nos . 1, 2 and 6 knives plus 14 assorted extra blades in beautiful wooden chest.

P/N 01-17400.....$48.50

X-ACTO BLADE NO. 11 - Classic fine point blade. A general purpose blade. Package of 5. P/N 01-16500.....$6.60

X-ACTO BLADE NO. 18 - X-Acto Blade #18. For deep wood chiseling. 1/2" surface. Package of 5

P/N 01-16600.....$2.95

Other X-Acto items also available. Call for pricing.

COMPOSITE TOOLS

STANLEY TOOLS

STANLEY TAPE MEASURE

This 12 foot steel tape measure, with 1/2" blade, is graduated in tenths and hundredths of inches and also in fractions of inches (32nds). Very handy for all aircraft construction. A "must" for composite construction.

No. 33-272 ..... P/N 33-272 ..... $19.80

STANLEY UTILITY KNIFE

Aluminum, die-cast in two sections - provides blade storage. Has handy hang hole. Furnished with No. 11-921 blade and blade guard.

No. 10-099 ..... P/N 10-099 ..... $7.80

KNIFE BLADE

Heavy-duty pointed razor-type utility knife blade for No. 10-099 knife and most other makes of utility knives.

No. 11-921 (Pkg. of 5 Blades)
P/N 11-921 ..... $2.45

HOOK BLADE

For use with No. 10-099 knife and most other makes of utility knives to cut linoleum, roofing material, cartons, etc., without damage. The razor-sharp hooked ends cut to full thickness in one stroke.

No. 11-961Pkg. of 5 Blades ..... P/N 11-961 ..... $6.20

SPRING CLAMPS

Heavy-gauge steel clamps with vinyl grips and tips to prevent marring work. Jaws specially formed to hold flat or round objects. Two sizes available:

No. 3201-HT – Jaw Opening 1", Length 4"
P/N 83-261 ..... $2.75

No. 3202-HT – Jaw Opening 2", Length 6"
P/N 83-262 ..... $4.50

SINGLE-EDGE RAZOR BLADES

Used for trimming rough edges of laminates.

P/N 01-24904 ..... $0.15/ea.

Box of 100 30% Discount.

DOVETAIL SAW

Cuts a true, smooth and narrow kerf. Comfortable hardwood handle provides positive grip. Professional quality.

No. 15-022 ..... P/N 15-140 ..... $27.90

STRAIGHT EDGE

A 6-ft. long kiln-dried spruce board, 7/8" to 1" thick and 3" to 4" wide, used for checking the straightness of flying surfaces during composite construction.

P/N 01-25900 ..... $16.85

6" STEEL RULER

Flexible stainless steel rule graduated in l0ths and l00ths on one side and in quick-reading 32nds and 64ths on the other side.

6 inch ..... P/N 616 ..... $5.35
12 inch ..... P/N 12-02062 ..... $8.95

FELT TIP MARKERS

Used for marking locations on fiberglass throughout construction.

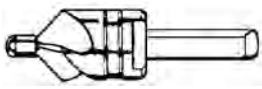
P/N 01-26000 ..... $0.42

12" LONG DRILL BITS

For use with standard electric drill for hard-to-reach jobs.

#10 (.1935" Dia.) ..... P/N 12-05500 ..... $7.75
1/4" Dia. ..... P/N 12-05600 ..... $8.50

COUNTERSINK



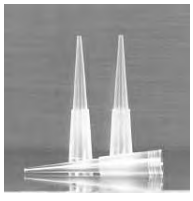
This assembly consists of a 1/2" dia. AT418E-4 100° cutter, a 1/4" dia. AT416- pilot and an AT409-1 adapter with 1/4" dia. shank for use with a hand drill. The adapter has a collet-like shaft to securely hold the replaceable pilot. Add pilot dash number to AT409. To complete part number see tool section for complete selection of pilots.

Complete Assemblies ..... See Page 707

COUNTERBORE

A 5/8" diameter boring tool, with 1/4" diameter pilot. 10" threaded extension is used for boring holes in hard to reach places. Used in the installation of the landing gear on the LongEZ and Cozy aircraft. 3/4" bore does not have 1/4" pilot and must use the pilot received with the 5/8" boring tool.

5/8" diameter w/pilot ..... P/N 12-00219 ..... $55.75
3/4" diameter without pilot ..... P/N 12-00220 ..... $49.85



MINI GLUE TIP

Fits most Yorker top dispenser bottles. Just slip a Mini Glue Tip on spout and seal with a pin. Always ready for use-no fuss to fill, no mess to clean. Made of polypropylene - glues don't stick. For shallow tip bends, heat in water, shape with fingers until cool.

P/N 01-27000 ..... Pkg. of 4 Tips $1.40

RUBBER SEALANT

No. 732 RTV general-purpose, clear, one-part silicone rubber. Cures to a firm silicone rubber in 24 hours at room temperature.

4.7 Oz. Tube ..... P/N 09-27800 ..... $7.95

ROTARY ("PIZZA") CUTTER

Makes clean cuts on fiberglass fabrics and other materials. The disc blade is made of high quality tungsten steel which is very sharp. Used by high-volume composite shops. Use with wooden backing board and handle knife with caution.

RTY-2 Cutter ..... P/N 01-00299 ..... $15.75
Replacemnt Blade ..... P/N 01-00300 ..... $6.95
Blades (5 Pack) ..... P/N 01-00301 ..... $27.75
Replacement Pinking Blade ..... P/N 12-01709 ..... $9.75

ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK

This all aluminum cutter however, will not "melt" when exposed to acetone, methylene chloride and other chemicals used to clean the cutters after use on wet layups. After use the aluminum rotary cutter is cleaned by simply leaving it in a can filled with acetone.

Aluminum Rotary Cutter ..... P/N 09-24906 ..... $38.85

90 DEGREE ALUMINUM ROTARY CUTTER FOR COMPOSITE WORK

This cutter handle is all aluminum with special stainless hardware for easy assembly when changing out rotary cutter blade. Will not melt when exposed to acetone, methylene chloride, and other chemicals. Good for wet layups. To clean, just drop in small container of acetone. ..... P/N 01-01047 ..... $36.50

PAINT BRUSHES

Natural, undyed bristle brushes with smooth, unpainted wooden handles. Unaffected by paints, dopes, resins, thinners or solvents.

1" Wide Brush ..... P/N 09-21200 ..... $0.43
2" Wide Brush ..... P/N 09-21300 ..... $0.59

RUBBER SQUEEGEE

Developed especially for working with epoxies, this 6", or 36" wide hard rubber squeegee is superior to the plastic types. Can be easily cleaned & reused many times.

6" Squeegee ..... P/N 01-24901 ..... $3.95 ea
36" Squeegee ..... P/N 01-00012 ..... $24.60ea

NOTCHED SPREADER

This plastic spreader is excellent for spreading epoxy at a steady rate to provide an even surface. Measures 4" x 4" and is notched on three sides in increments of 1/8", 3/16", 1/4".

P/N 01-24909 ..... $0.97 ea

ORDER ONLINE!

www.aircraftspruce.com

• 80,000 Parts!
• 24 Hour Access!
• Fast, Easy Navigation!

GRADUATED TAPER-TIP APPLICATOR

This graduated 2 oz. syringe is ideal for measuring and dispensing precise amounts of resins and other liquids. Note: The ink used for the graduation lines are not solvent resistant. They will rub off if contacted with a solvent.

P/N 01-25635 ..... $4.85

DISPENSER BOTTLE

Polyethylene bottle with Yorker (applicator) cap.

4 Oz. Bottle ..... P/N 01-24905 ..... $0.55
16 Oz. (1 Pint) Bottle ..... P/N 01-24906 ..... $0.88

INDUSTRIAL SYRINGE

Made of hi-impact polyethylene with seamless body and special safety-grip plunger. Capacity 10 cc. Tapered dispensing nozzle can be clipped with scissors at proper diameter to govern output. Excellent epoxy dispenser.

P/N 01-25000 ..... $2.75

MIL GAUGES

These color-coded mil gauges are solid anodized aluminum for long life and come in four sizes for a variety of FRP applications. Machined to close tolerances (0.0001") for accuracy and available in mils (inches) and microns (metric).

3-18 mils ..... P/N 01-00411 ..... $5.25
10-35 mils ..... P/N 01-00412 ..... $5.75
40-65 mils ..... P/N 01-00413 ..... $3.65

MULTI-MEASURE PLASTIC CONTAINERS

Use again and again for liquid ingredient accuracy. A must-have item when mixing resins. Seal the liquid in the container with the matching sized plastic lid.

1 Qt. mix cup ..... P/N 01-00915 ..... $0.95
1 Qt. lid ..... P/N 01-00926 ..... $0.60
2.5 Qt. mixing cup ..... P/N 01-00330 ..... $1.84
2.5 Qt. lid ..... P/N 01-00331 ..... $0.91

EPOXY MIXING CUPS

Unwaxed, flat bottom paper cups in three convenient sizes for small mixes.

3 Oz. ..... (100 Cups) ..... P/N 01-25600 ..... $7.85
8 Oz. ..... (50 Cups) ..... P/N 01-00416 ..... $9.85
12 Oz. ..... (60 Cups) ..... P/N 01-25700 ..... $14.75
16 Oz. ..... (24 Cups) ..... P/N 01-00324 ..... $7.95

MIXING STICKS

These mixing sticks are medical tongue depressors which work well for mixing small batches of epoxy. Size: 3/4" x 6".

Box of 500 ..... P/N 01-25800 ..... $10.85

TAPERED OFFSET SPATULA

This tapered spatula is stainless steel with wood handle. Ideal for making 3/8" radii on bulkheads, ribs, or anywhere a uniform radius is required.

P/N 01-24915 ..... $3.75 ea.

COMPOSITE TOOLS

DREMEL TOOLS

MODEL 100 MOTOTOOL - The Dremel 100 Series rotary tool offers single speed convenience for full-speed applications like routing, cutting, drilling and sanding applications. Its single speed setting is perfect for all-the-time high speed use. Ideal when one speed is all you need or for shaping, hollowing, grooving, slotting, inlaying and making tapered holes in soft metals, plastics and woods especially on curved surfaces. Constant Speed: 35,000 RPM. Cool-running ball bearing construction. Amperage: 1.15 ..... P/N 01-18600 ..... $46.95

MODEL 395 MOTOTOOL - Variable Speed: 5,000-32,000 RPM with 100% ball bearing construction for long life, smooth operation. External caps allow for easy replacement of motor brushes. Amperage: 1.2

P/N 01-18700 ..... $79.75

DREMEL TWO SPEED ROTARY TOOL KIT - Multipurpose Cutting Guide attachment. Ideal for multiple applications on a variety of materials and includes 21 genuine Dremel accessories. Model Number: 200-1/21. Amperage: 1.15. Cord length: 6. Speed: 15,000 or 35,000 RPM. Voltage: 120 AC, 50-60 Hz. Warranty: Limited 3 Years. P/N 01-01145 ..... $84.95

DREMEL MOTO TOOL KIT #200-1/15
Moto-tool features smooth running, two-speed permanently lubricated bronze sleeve bearing motor. Amperage: 1.15 Amps. Cord Length: 6ft. Speed: 15,000 or 35,000 rpm. Voltage: 120 AC, 50-60 HZ. Warranty: 3 Years
P/N 01-01129 ..... $72.50

NO. 402 MANDREL – The 402 mandrel is used primarily with cut-off wheels but is used with the following Dremel accessories: 409, 411, 412, 413, 420, 423, 425, 426, 456, 511, 512, 540 and 541. Shank Diameter 1/8, 3,2 mm

P/N 01-22000 ..... $2.45

REPLACEMENT MOTOR BRUSHES - (Specify Moto-Tool Model No.)
P/N 01-18701 ..... per pair $3.55

MULTIPRO CHUCK - The Dremel MultiPro chuck allows you to quickly and easily change accessories on your Dremel MultiPro rotary tools without changing collets. Will accept accessoroies with 1/32" - 1/8" shanks. Use only with corded MultiPro tool models 275, 285, 395, 595. P/N 01-00131 ..... $9.50

NO. 407 1/2" DRUM SANDER - Ideal for rough shaping of wood and smoothing of fiberglass. Sander bands are replaceable. Furnished w/ one band. 1/8" shank
P/N 01-19000 ..... $3.35

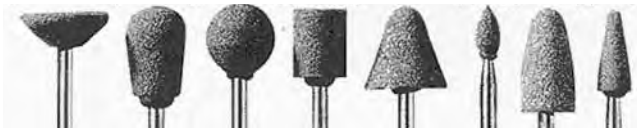
NO. 408 DRUM SANDER BANDS - 1/2" Diameter, Coarse grit. P/N 01-19100 ..... $2.45

CARBON MOTOR BRUSH - One pair of motor brushes for use with Dremel rotary tool model(s): 100, 200, 275, 285, 300, 395 and 595 (Type 4, 5 and 6) and Dremel contour sander 6000 (Type 1 and 2). P/N 01-01180 ..... $3.45

DREMEL 543 CUTTING / SHAPING WHEEL - For cutting and shaping on soft and hard woods, fiberglass, plastics and laminates (not metal.) This versatile wheel is coated with tungsten carbide grit for long life. It is coated on both sides, so it cuts and finishes in one operation. P/N 01-01056 ..... $17.50

ALUMINUM OXIDE GRINDING STONES

Use on metals, castings, welded joints, rivets and rust. Ideal for sharpening, deburring and general purpose grinding of most materials.



903 911 921 932 941 945 952 953

Cutter	Size	Part No.	Price	Cutter	Size	Part No.	Price
#911	7/16"	01-00135	$2.45	#945	3/16"	01-00138	$2.45
#932	3/8"	01-00137	$2.45	#952	3/8"	01-00139	$2.45
#941	5/8"	01-00132	$2.48	#953	1/4"	01-00140	$2.45

954 971 997 8153 8175 8193 8215

Cutter	Size	Part No.	Price	Cutter	Size	Part No.	Price
#971	5/8"	01-00142	$2.45	#8175	3/8"	01-00145	$2.45
#997	3/32"	01-00143	$2.45	#8193	5/8"	01-00146	$2.45
#8153	3/16"	01-00144	$2.45	#8215	1"	01-00147	$2.45

STRUCTURED TOOTH TUNGSTEN CARBIDE CUTTERS

Fast cutting sharp teeth for greater material removal. Use on fiberglass, wood, plastic, epoxy, rubber, laminates, particle board, soft metals, ceramic tile.

9933 9931 9934 9935 9936

Cutter	Size	Part No.	Price	Cutter	Size	Part No.	Price
#9931	1/4"	01-00148	$12.75	#9934	5/16"	01-00152	$12.75
#9933	1/4"	01-00151	$12.75	#9935	5/16"	01-00153	$12.75
				#9936	3/4"	01-00154	$12.75

HIGH SPEED CUTTERS

High Speed Cutters can be used for shaping, hollowing, groving, slotting, making tapered holes in soft metals, plastics and woods. Number 198 and 199 cutters can be used to make small slits.

100 114 115 116 117 118 121 124 125 131

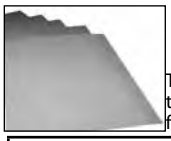
134 144 190 191 192 193 194 196 198 199

Cutter	Size	Part No.	Price	Cutter	Size	Part No.	Price
#100	1/4"	01-19200	$4.90	#134	5/16"	01-19800	$4.90
#114	5/16"	01-19300	$4.90	#144	5/16"	01-20000	$5.95
#115	5/16"	01-20800	$7.50	#190	3/32"	01-20200	$4.95
#116	1/4"	01-20900	$4.90	#191	1/8"	01-20300	$4.90
#117	1/4"	01-21000	$7.50	#193	5/64"	01-20500	$4.90
#118	1/8"	01-21200	$4.90	#194	1/8"	01-20600	$6.95
#121	1/4"	01-19400	$4.90	#192	3/16"	01-20400	$7.50
#124	5/16"	01-19600	$4.90	#196	7/32"	01-20700	$7.50
#125	1/4"	01-21300	$7.50	#199	3/8"	01-21700	$4.95

SANDING BLOCK

A hard rubber tool which comfortably fits the hand for scratch- to finish-sanding. Used by professionals for years in all sanding operations. Simply cut a piece of sandpaper 2-3/4" x 9" and insert each end into the sanding block. Paper is held securely by nail retainers. Makes the sanding operation much easier.

Model No. 100 ..... P/N 01-26400 ..... $10.50



SANDPAPER

The weights and grits listed have been found to be the most effective for sanding fiberglass/epoxy surfaces. Sheet Size: 9" x 11".

Sandpaper Type		Part No.	Price /Sheet Less than 50 Sheets
Aluminum Oxide 36 Grit	Open Coat "D" Weight	01-26200	$1.55

SANDPAPER 3M™

Wet or dry Tri-M-Ite (3M) is a silicon carbide abrasive paper made especially for producing satin-smooth finishes on metal and other doped, lacquered or enameled surfaces. Wet or dry performs best when used with water or oil, but can also be used dry. Sheet size 9" x 11". Available in 220-A, 280-A, 320-A or 400-A grit.

(Type A paper has an especially light, flexible backing).

Sandpaper Grit Size	Part No.	Price/ Sheet
120-A	09-20550	$1.15
220-A	09-20600	$0.96
280-A	09-20700	$0.96
320-A	09-20800	$1.06
400-A	09-20900	$0.98

CURVED TOOTH FILE

Milled files designed for smooth, fast work on annealed steels, hard plastics and composite materials. 14" length, 1-11/32x5/16 sections, 8 teeth per inch. P/N 01-00392 ..... $44.60

SANDING DETAILER KITS

The Sanding Detailer is ideal for finishing those hard to reach areas. The abrasive belt can be indexed. The Sanding Detailer is spring loaded to put tension on the abrasive belt. After the abrasive belt is used up, the user can simply compress the tool and replace the abrasive belt with a fresh one. They are color coded for easy identification of grit. The replacement belts are color coded on the inside.

The Standard Kit includes (shown in picture):
1 Gray 80 Grit
1 Red 120 Grit
1 Orange 180 Grit
1 Blue 240 Grit
Grit tool along with 5 Replacement Belts of each grit
The Finishing Kit includes:
1 Blue 240 Grit
1 Green 320 Grit
1 Yellow 400 Grit
1 Black 500 Grit
Grit tool along with 5 Replacement Belts of each grit

Description	Part No.	Price
Standard Kit, Coarser Grits	01-01411	$26.50
Finishing Kit, Finer Grits	01-01412	$26.50
80 Grit Belt- Replacements	01-01413	$4.95
120 Grit Belts- Replacements	01-01414	$4.95
180 Grit Belts- Replacements	01-01416	$4.95
240 Grit Belts- Replacements	01-01417	$4.95
320 Grit Belts- Replacements	01-01418	$4.95
400 Grit Belts- Replacements	01-01419	$4.95
500 Grit Belts- Replacements	01-01422	$4.95

PREPPIN' WEAPON SANDING BLOCK

Preppin' Weapon is a handy sanding block made of Styrofoam core and high impact ABS that won't break when dropped. Easy to grip for wet or dry sanding. Contoured to fit the shape of a hand and is sized to fit a 1/4" sheet of plain backed 8 x 11 sandpaper or a 2 3/4" wide file paper. It's coil spring design holds single or multiple sheets equally tight and saves reloading time by stacking up to 4 sheets and tearing them away as the abrasive wears out. Save reloading time by using colors to indicate grits. Excellent for builders of aircraft, boats, cars, etc.

Yellow ..... P/N 12-00505 ..... $20.50
Red ..... P/N 12-00506 ..... $19.85
Green ..... P/N 12-00507 ..... $19.95

MINI-SANDER

A unique sanding tool which uses a 1-1/2" wide strip of sandpaper formed to make a belt. Locked taut by a patented mechanism that snaps into place with a finger pull. Its knife edge sides and padded body sand close to right angle fittings & fit into small concave recesses. Sander body is 7/8"h x 4"l and made of high impact plastic. Buy ready-made belts or make your own (6 belts from standard sheet).

Mini-Sander ..... P/N 01-26800 ..... $5.75
Wet or dry Mini-Strips, 3 - #500, 3 - #320, 3 - #220
Pkg. of 9 Strips ..... P/N 01-26900 ..... $5.95
New Continuous Belts (load free) Aluminum Oxide #120
Package of 3 ..... P/N 01-26910 ..... $5.65
New Continuous Belts (load free) Aluminum Oxide #220
Package of 3 ..... P/N 01-26915 ..... $5.85

PERMA-GRIT CONTOUR SANDING BLOCKS

These user friendly sanding blocks are made from extruded, anodized aluminum. The 32mm (1.25") Radius Curve is covered on the external and internal radius with Tungsten Carbide abrasive sheets. The Contour Blocks come in either the Coarse (60US grit approx.) or Fine (120US grit approx.) Small block is 5.5" long and large block is 11" long.

Benefits:
- Shape and sand curves, grooves, etc. quickly and easily
- Great for fillets, leading edges, under cambers, etc.
- Extremely tough, will not wear out like normal sandpaper
- Will last for years without having to change the sheets
- Does not clog easily (brush or knock out)
- Easy to remove glues, resins, paint, epoxy etc. w/ paint remover

140MM Contour Block (COURSE) ..... P/N 01-00591 ..... $23.25
140MM Contour Block (FINE) ..... P/N 01-00592 ..... $22.95
280MM Contour Block (COURSE) ..... P/N 01-00593 ..... $33.65
280MM Contour Block (FINE) ..... P/N 01-00594 ..... $34.95

PERMA-GRIT HAND TOOLS

CM

HAND TOOLS

Perma-Grit Tools are made of Tungsten Carbide Grit, one of the hardest elements available, second only to diamonds. They are specifically designed and developed for aircraft builders, woodworkers, and modelers. These tools will cut, sand and shape tough composite materials, saving homebuilders hours of building time. Ideal for fuselage shaping and wing building, these tools are highly recommended by several kitplane manufacturers. Available in coarse (180) & fine (320) grit.

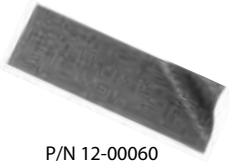
Model No.	Part No.	Description	Price
F-101	12-00040	230mm x 38mm Flat Fine File	$10.75
F-102	12-00041	230mm x 38mm Flat Coarse	$10.75
R-200F	12-00042	230mm x 26mm / 36mm diameter Fine	$10.75
R-200C	12-00043	230mm x 26mm / 36mm diameter Coarse	$10.75
R-201C	12-00044	230mm x 38mm Tangent Coarse	$10.75
R-201F	12-00045	230mm x 38mm Tangent Fine	$10.50
R-202C	12-00046	18mm diameter tube Coarse	$10.85
R-202F	12-00047	18mm diameter tube Fine	$11.50
R-203C	12-00048	12mm diameter tube Coarse	$10.75
R-203F	12-00049	12mm diameter tube Fine	$10.95
R-204C	12-00050	6 mm round Coarse grit	$10.75
R-204F	12-00051	6 mm round Fine grit	$10.50
S-204C	12-00052	6 mm square Coarse grit	$10.75
S-204F	12-00053	6 mm square Fine grit	$10.75
R-101	12-00054	230mm x 38mm diameter Internal Fine grit	$11.50
R-102	12-00055	230mm x 38mm diameter Internal Coarse grit	$10.75
Set 8C	12-00056	contains: 8 popular shapes in Tool Roll F-101, F102, R-200C, R-201C, R-202C, R-203C, R-204C, S-204C	$74.75
Set 8F	12-00057	contains: 8 popular shapes in Tool Roll F-101, F102, R-200F, R-201F, R-202F, R-203F, R-204F, S-204F	$82.75
TR1	12-00058	Tool Roll - Holds 8 tools, red plastic w/velcro fastener	$6.25

ROTARY FILES

Supplied with a 3mm integral arbor so they may be used in reversible drive drills and hobby drills. These files are well balanced and run smoothly, and cur a wide range of materials with little need for secondary finishing. Available in coarse and fine grit.

Model No.	Part No.	Description	Price
RF1C	12-00070	Narrow Cone coarse	$13.75
RF1F	12-00071	Narrow Cone fine	$13.65
RF2C	12-00072	Wide Cone Coarse	$13.75
RF2F	12-00073	Wide Cone Fine	$13.50
RF3C	12-00074	Drum Coarse	$13.75
RF3F	12-00075	Drum Fine	$13.75
RF4C	12-00076	Pancake Coarse	$13.75
RF4F	12-00077	Pancake Fine	$13.75
RF5C	12-00078	Domehead Coarse	$13.75
RF5F	12-00079	Domehead Fine	$13.75
RF6C	12-00080	1/8 diameter Rod Coarse	$13.75
RF6F	12-02247	1/8 diameter Rod Fine	$13.50

SANDING BLOCKS & FLEXI-STRIPS



P/N 12-00060

These verstile sanding blocks are ideal for sanding large areas, creating straight edges, producing dihedral angles, profiling leading edges, feathering trailing edges, and more. The sanding blocks are coarse grit on one side and fine grit on the opposing side. The flexible grit strips can be cut and shaped to any form, external or internal.

Model #	Part No.	Description	Price
SB140	12-00064	140mm x 51mm Coarse one side, fine opp.	$23.50
SB280	12-00065	280mm x 51mm Coarse one side, fine opp.	$31.85
SB560	12-00066	560mm x 51mm Coarse one side, fine opp.	$47.50
FXT-103	12-00060	51mm x 280mm Fine Grit Strip	$10.75
FXT-104	12-00061	51mm x 280mm Coarse Grit Strip	$10.75
FXT-106	12-00062	51mm x 140mm Fine Grit Strip	$8.75
FXT-107	12-00063	51mm x 140mm Coarse Grit Strip	$8.75

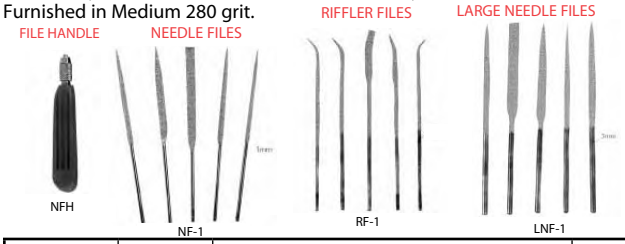
ROTARY CUTTING DISCS

These durable cutting discs are abailable in two sizes (19mm and 32mm) and come complete with a 3mm steel arbor to fit hobby drills. Will cut all woods, piano wire, composites, ceramics, stone, etc.

Model No.	Part No.	Description	Price
RD1	12-00067	19mm diameter disc with arbor	$11.90
RD2	12-00068	32mm disc with arbor	$12.95
RD3	12-00069	19 & 32mm disc with arbor	$20.75

NEEDLE FILES

These extremely versatile tools are excellent for shaping and finishing. They will cut in any direction and do not clog easily. Our needle files cut quickly and leave an excellent finish. Very popular for detail work. Furnished in Medium 280 grit.



Model No.	Part No.	Description	Price
NF1H	12-00081	Set of 5 needle files w/ Handle	$47.50
NF1	12-00082	Set of 5 needle files w/o Handle	$42.50
NF-F	12-00083	Flat needle file	$11.25
NF-K	12-00084	Knife needle file only	$10.95
NF-R	12-00085	Round needle file only	$10.95
NF-S	12-00086	Square needle file only	$10.80
NF-T	12-00087	Triangle needle file only	$11.25
RIF-1	12-00088	HSet of 5 Riffler files w/ Handle	$48.95
RIF1	12-00089	Set of 5 Riffler files w/o Handle	$44.25
RIF-F	12-00090	Flat Riffler file only	$11.25
RIF-H	12-00091	Half-round Riffler file only	$10.80
RIF-R	12-00092	Round Riffler file only	$10.90
RIF-S	12-00093	Square Riffler file only	$10.80
RIF-T	12-00094	Triangle Riffler file only	$10.80
LNF-1	12-00095	Set of 5 Large needle files / no handle	$47.50
LNF-F	12-00096	Flat Large needle file only	$12.95
LNF-H	12-00097	Half-Round Large needle file only	$12.90
LNF-R	12-00098	Round Large needle file only	$12.95
LNF-S	12-00099	Square Large needle file only	$12.40
LNF-T	12-00100	Triangle Large needle file only	$12.95
NFH	12-00101	Needle File handle only	$4.40

3/8" INCH NEEDLE FILE KIT WITH HANDLE

Set of 5 files: Hand, Round, Halfround, Square and 3-Square Extremely versatile tools, popular for detailed work.These file cuts in any direction and does not clog easily. Cuts quickly leaving an excellent finish.

P/N 12-01752..... $51.95

LARGE NEEDLE FILE HANDLE

Comfortable plastic handle with brass collet to accept all large (18cms) needle files.Overall length 115mm. Collect 5mm

PN 12-00166 ..... $4.35

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

INVISIBLE GLOVES #1211

Invisible Gloves #1211 are a soft paste-like substance that when applied to hands provide protection against caustic and carcinogenic chemical products including hydraulic fluid, paints, ink, MEK, zinc chromate, jet fuel, graphite, engine exhaust by-products, adhesives and much more. Invisible Gloves meets military and industrial safety standards and can protect any area of the body (hands, arms, face, legs, etc...) exposed to hazardous products. Especially useful in working with materials used in composite aircraft construction. One pint yields 100 pair of gloves. Invisible Gloves #1211 are easily removed with water. Allows complete freedom of hand and finger movement. Hands will not heat up and tools will not slip.

P/N 12-15800 .....$7.95/pint

GLOVES IN A BOTTLE

Protect your hands with a protective skin lotion called Gloves in a Bottle. Perfect for homebuilders, particularly those who work with composite aircraft, it binds with skin, forming an invisible pair of gloves to help protect against machinery and chemicals. It also protects against cracking and drying due to cold weather. 8 oz. .....P/N 01-00656 ..... $15.65

RAVEN GLOVES

Powder-Free Nitrile. Superior Puncture & Abrasion Resistance. Latex-Free Textured Grip Beaded Cuff Ambidextrous. 6 mil Nitrile. Sold in boxes of 100 gloves.

Medium .....P/N 01-01402 ..... $13.75
Large .....P/N 01-01403 ..... $13.75
X-Large .....P/N 01-01404 ..... $13.75
XX-Large .....P/N 01-01406 ..... $13.75

THICKSTER GLOVES

Lightly Powdered Exam Grade Latex. Extra Thick Latex Protection. 12" Length for Added Protection. Textured Grip. Beaded Cuff. Ambidextrous. 14 mil Latex. Sold in boxes of 50 gloves.

Medium .....P/N 01-01394 ..... $14.95
Large .....P/N 01-01395 ..... $14.95
X-Large .....P/N 01-01396 ..... $14.95
XX-Large .....P/N 01-01397 ..... $14.95

SERIES 8 WASH-OFF HAND PROTECTION

SERIES 8 - A less expensive "clone" of the famous PR88 hand creme developed in Europe, Series 8 is highly recommended by Rutan Aircraft Factory for working with epoxies. It protects hands from most epoxies, grease, oil paint, paste, gasoline, tar, lacquer, acetone, styrene, fiberglass and many more substances. It helps prevent chapping, cracking and drying of hands, and is an excellent aid to persons with sensitive skin. No soap is needed for cleanup - hands wash clean with water alone.

32 Oz. (Qt.) Plastic Jar .....P/N 13-38306.....$19.65

PLY NO. 9 PROTECTIVE HAND GEL

Provides a thin, invisible, flexible film which is an excellent barrier to epoxy resins, rubber adhesives, vinyl plasticizers, polyester resins and glass fibers. Epoxy and gel wash off easily in soap and water.

One-Lb. Jar.....P/N 01-36100.....$8.50

DENATURED ALCOHOL

Can be mixed with soap and water. Is harmless to rubber. Use as a solvent for thinning, removing and cleaning epoxy, brushes, and equipment.

Gallon ..... P/N 01-00399..... $12.95

REPLACETONE

Cleans polyester and epoxy resins from tools and hands without the hazards associated with chemical cleaning solvents. It is a non-volatile, non-flammable, and a biodegradable replacement for acetone and MEK solvents. Replacetone separates resins to the bottom of the cleaning container, but it does not dissolve them. Pour off non-emulsified Replacetone and use again.

Quart ..... P/N 01-08823 .....$15.85
Gallon..... P/N 01-08834 .....$47.50

LATEX GLOVES

Disposable but reusable gloves which resist tearing. Large size. Fits right or left hand. Box of 100.

P/N 01-36550 .....$10.85

COTTON GLOVES

Lightweight liners - wear under latex gloves. More comfort, improved sensitivity.

P/N 01-36600 .....$0.95/Pair

BUTYL GLOVES

These gloves are resistant to the permeation of epoxy resins and curing agents and have been found to offer by far the best protection of any glove available.

P/N 01-36700 ..... $23.50

TYVEK SUITS

These are the tough, full-body suits with hoods that professional painters use. Available in extra large or extra extra large.

X-Large ..... P/N 01-36800.....$7.75
XX-Large..... P/N 01-36805.....$17.50

MAXSHIELD DISPOSABLE PROTECTIVE CLOTHINGS

FULL BODY COVERAGE: RECYCLED TYVEK® - Jumpsuit with Hood Covers. It's the ultimate protection in a Tyvek® jumpsuit, covering you from head to toe with an integrated hood and elastic-topped shoe covers. If you work in an environment where it's important to keep a barrier between you and microscopic particles, this is the Tyvek® jumpsuit for you.

Size	PN	Price
Small	12-01827-S	$6.70
Medium	12-01827-M	$5.95
XL	12-01827-XL	$6.99

THE TYVEK® SUIT - The Lowest-Priced Recycled Coverall. You work with messy stuff... dirt, paint, solvents, chemicals, oil, grease. Protect your skin and clothing with an affordable barrier garment – the Tyvek® suit. These multipurpose suits are so durable you can wear them over and over. But they're priced so low, you can afford to throw them away when it's time.

Size	PN	Price
Small	12-01826-S	$5.85
Medium	12-01826-M	$5.85
Large	12-01826-L	$5.85
XL	12-01826-XL	$5.75

RECYCLED TYVEK® APRONS - The Better-Than-Plastic Apron. A regular throw-away plastic apron might be good enough for small jobs. But for complete protection from food splashes, hot oil, dangerous chemicals, and other big messes, the serious professional chooses a Tyvek® apron. Features: • Bib style for full protection. • 28" x 36" in size. • Serged seams for strength. • Long ties to customize the fit,

PN 12-01824 ..... $2.10

TYVEK® DISPOSABLE SHOE COVERS - Boot Covers High top boot covers w/elastic top.

PN 12-01825 ..... $1.75

TYVEK® DISPOSABLE - Shoe Covers, Boot Covers With a Tyvek® disposable shoe covers you don't have to compromise. That's because Tyvek® disposable shoe covers deliver the best balance of protection, durability and comfort. Color: White.

PN 12-01995 ..... $1.39

SPRUCE SPARS – CAPSTRIP – STRINGERS

WP

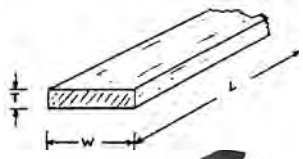
GENERAL ORDERING INFORMATION

Aircraft spruce spars are available either S2S (surfaced 2 sides, top & bottom, with rough edges in 4" & 6" nominal width) or S4S (surfaced all 4 sides to thickness & width). Prices in table below are for S4S spars. If S2S is desired so builder can trim to exact width, specify S2S and use 4" or 6" width prices from table. Request quote on spar widths wider than 6". Spars for certificated aircraft such as Aeronca, Stearman, Taylorcraft and Piper are available and may be priced from the table. Since many of these early aircraft were "handmade", the spars are often not uniform in size for a particular model. Therefore, the finished net dimensions should be specified when ordering replacement spars. Please price to nearest fraction.

Thousands of feet of S2S aircraft quality spruce are stocked in our Corona, CA. and Peachtree City, GA. warehouses. Orders for spars, spruce kits and capstrip can usually be shipped within three weeks after receipt of order. Spars wider than 6" must be milled from 8" specially selected stock which requires a long and indefinite lead time. Prices on request.

For additional technical information refer to a complete reprint of spruce specification MIL-S-6073 and plywood specification MIL-P-6070.
P/N 13-14900..... $4.95

When ordering either spars or capstrip, designate the thickness first, then the width and length.
Examples: 3/4"T x 4-1/4"W x 14'L spar; 1/4"T x 1/2"W x 5'L capstrip.



Faster delivery can be assured if guidelines regarding minimum acceptable lengths are provided. Orders are often delayed awaiting delivery of lumber to the even footage specified whereas shipment could be made if the minimum usable lengths were indicated. Example: 3/4" nominal 6" x 12' (131-1/2" min.).

Spruce and tubing kits may be combined with plywood and other building supplies for a single truck delivery charge.

BARGAIN BAG OF SPRUCE

Assortment of at least ten pieces, in random lengths from 1 ft. to 5 ft., of rough, S2S or S4S remnants and cutoffs. A usable selection is assured. Approx. wt. 20 lbs. P/N 02-03600.....$37.50

METRIC SIZES - Spruce can be cut to metric sizes upon request only as special order, non cancelable and non refundable.
Using our current part numbers please select one size greater than desired and at check out in "Special Instructions" advise exact metric dimensions needed.

SPRUCE SPAR STOCK—MIL SPEC. MIL-S-6073

PRICE PER LINEAL FOOT*

THICKNESS (Inches)	WIDTH (Inches)													
	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6
1/8	$3.25	$3.25	$3.25	$3.25	$3.25	$4.10	$4.10	$4.10	$4.10	$4.85	$4.85	$4.85	$4.85	$5.50
3/16	$2.35	$2.85	$3.10	$3.25	$3.25	$4.10	$4.10	$4.10	$4.10	$4.85	$4.85	$4.85	$5.00	$5.50
1/4	$2.95	$3.25	$3.25	$3.25	$3.25	$4.10	$4.10	$4.10	$4.10	$4.85	$4.85	$4.85	$4.85	$5.50
5/16	$5.25	$5.25	$5.25	$6.25	$6.25	$7.25	$8.00	$8.00	$8.00	$9.50	$9.50	$9.50	$9.50	$11.25
3/8	$5.50	$6.25	$6.25	$6.25	$6.25	$8.00	$8.00	$8.00	$8.00	$9.50	$9.50	$9.50	$9.50	$11.25
1/2	$6.25	$6.25	$6.25	$6.25	$6.25	$8.00	$8.00	$8.00	$8.00	$9.50	$9.50	$9.50	$9.50	$11.25
5/8	$6.25	$6.25	$6.25	$6.25	$6.25	$8.00	$8.00	$8.00	$8.00	$9.50	$9.50	$9.50	$9.50	$11.25
11/16	$6.25	$6.25	$6.25	$6.25	$6.25	$8.00	$8.00	$8.00	$8.00	$9.50	$9.50	$9.50	$9.50	$11.25
3/4	$7.25	$8.00	$8.00	$8.00	$8.00	$10.00	$10.00	$10.00	$10.00	$10.75	$11.00	$11.50	$12.00	$12.50
13/16	$7.25	$8.00	$8.00	$8.00	$8.00	$9.25	$10.00	$10.00	$10.00	$12.00	$12.00	$12.00	$12.00	$14.25
7/8	$8.00	$8.00	$8.00	$8.00	$8.00	$10.00	$10.00	$10.00	$10.00	$12.00	$12.00	$12.00	$12.00	$14.25
15/16	$8.00	$8.00	$8.00	$8.00	$8.00	$10.00	$10.00	$10.00	$10.00	$12.00	$12.00	$12.00	$12.00	$14.25
1	$8.00	$8.00	$8.00	$8.00	$8.00	$10.00	$10.00	$10.00	$10.00	$12.00	$12.00	$12.00	$12.00	$14.25
1-1/8	$8.75	$9.50	$9.50	$9.50	$9.50	$12.00	$12.00	$12.00	$12.00	$14.50	$14.50	$14.50	$14.50	$17.00
1-1/4	$9.50	$9.50	$9.50	$9.50	$9.50	$12.00	$12.00	$12.00	$12.00	$14.50	$14.50	$14.50	$14.50	$17.00
1-1/2	$9.50	$9.50	---	$9.50	$9.50	$12.00	--	--	---	$14.50	---	---	---	$17.00
1-5/8	---	$10.00	---	---	$13.25	---	---	---	---	---	---	---	$18.00	$25.00

* Please order by part number and also state exact thickness, width and length to verify part number. Spruce part numbers begin with "02" and finish with thickness and width. Examples: 3/4"T x 5-1/4"W is P/N 02-34514; 1-1/4"T x 6"w is P/N 02-1146. Provide part number and footage required of each size. Specify any particular lengths required. Thicker & wider sizes subject to availability. Request quotation.

FOR SPARS 6-1/4" TO 9" WIDE, SEE OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM

FINISHED CAPSTRIP, LONGERONS, STRINGERS

PRICE PER LINEAL FOOT*

THICKNESS (Inches)	WIDTH (Inches)															
	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	1-3/4	2	2-1/4	2-1/2
1/8	$0.21	$0.21	$0.23	$0.25	$0.30	$0.32	$0.35	$0.43	$0.49	$0.55	$0.71	$0.83	$0.99	$1.12	$1.27	$1.40
3/16	$0.21	$0.21	$0.23	$0.25	$0.30	$0.32	$0.35	$0.43	$0.49	$0.55	$0.71	$0.83	$0.99	$1.12	$1.28	$1.39
1/4		$0.21	$0.23	$0.25	$0.30	$0.32	$0.35	$0.43	$0.49	$0.55	$0.71	$0.84	$0.99	$1.13	$1.27	$1.39
5/16			$0.26	$0.30	$0.43	$0.49	$0.52	$0.55	$0.58	$0.64	$0.84	$1.04	$1.12	$1.30	$1.50	$1.70
3/8				$0.44	$0.51	$0.60	$0.75	$0.89	$1.04	$1.20	$1.49	$1.80	$2.05	$2.10	$2.65	$2.90
1/2						$0.68	$0.81	$0.98	$1.12	$1.28	$1.65	$1.99	$2.20	$2.60	$3.05	$3.25
5/8							$0.98	$1.14	$1.32	$1.43	$1.71	$2.10	$2.30	$2.80	$3.15	$3.35
3/4								$1.20	$1.35	$1.52	$1.88	$2.20	$2.40	$2.90	$3.25	$3.55
7/8									$1.55	$1.71	$2.00	$2.40	$2.75	$3.15	$3.55	$3.85
1										$2.35	$2.35	$2.90	$3.15	$3.50	$3.95	$4.15

*Prices shown are for lengths less than 7 feet. Add 20% for lengths 7-10 feet and 35% for lengths over 10 feet.
Please order by part number and also state exact thickness and width. Begin part number with "02", then thickness & width.
Example: 1/4"T x 3/8"W is P/N 02-1438. Capstrip is furnished in lengths as specified by customer.

COMPLETE SPRUCE KITS

Acro Sport	02-03700	$509.65
Acro Sport II	02-03800	$1,227.75
Baby Great Lakes	02-03900	$782.51
Bobcat	02-25100	$715.00
Christavia MK 1	01-39880	$865.00
Christavia MK 4	01-39910	$1,660.17
Corby Starlet CJ-1 (less spars)	02-04300	$930.57
Cvjetkovic CA-65	02-04400	$2,337.00
Cygnet	02-04500	$853.00
EAA Bi-Plane (Original Wing)	02-00223	$1,225.00
EAA Bi-Plane (P-Wing)	02-04600	$1,216.00
Fly Baby Spruce Kit	01-00977	$1,905.55
GN-1 Aircamper **	02-04700	$1,717.99
GP-4	02-25200	$4,284.40
Hatz Bi-Plane	02-04800	$1,726.75
Kelly-D	02-04900	$804.00
Mitchell B-10	02-05000	$423.95
One Design	See Page 15 for Kits	
Osprey II **	02-05100	$4,203.60
Pietenpol Aircamper Wing Kit	01-00582	$906.78
Pietenpol Aircamper Fuselage Kit	01-00583	$156.12
Pietenpol Aircamper Stabilizer & Elevator	01-00584	$143.38
Pietenpol Aircamper Rudder & Fin Kit	01-00585	$29.64
Pitts Special (Basic) M-6 or S-1D	02-05200	$1,143.13
Pober Pixie (spruce & plywood)	01-01136	$1,778.67
Rand KR-1 **	02-05400	$836.86
Rand KR-2 **	02-05500	$1,008.91
Rand KR-2S	02-05510	$1,079.72
Rutan VariViggen	02-05600	$435.00
Skybolt	02-05700	$1,259.84
Smith Miniplane	02-05800	$607.73
VP-1	01-00222	$698.60
VP-2	02-08800	$825.60
Volmer Sportsman VJ-22 (less wings)	02-06000	$1,634.43
War Aircraft Corsair	02-06100	$1,042.60
War Aircraft P-47	02-06200	$478.44
War Aircraft FW-190	02-06300	$1,083.00
War Aircraft Sea Fury	02-06400	$564.00
Wittman Tailwind**	02-06500	$962.00

** Wing & aileron spars finished to net dimensions. Not beveled.

SPAR KITS

Acro Sport	02-06600	$672.80
Acro Sport II	02-03810	$711.00
Baby Great Lakes	02-06700	$541.50
Bakeng Duce	02-06800	$496.00
Barracuda	02-06900	$868.75
Bowers Fly Baby (Spars)	02-07000	$585.00
Bowers Complete Wing Kit	02-07100	$1,143.28
Christavia MK 4	01-39980	$1,660.17
Corby Starlet (Two Piece Wing Spar Kit)	02-09000	$464.07
Cvjetkovic CA-65	02-07300	$1,651.00
EAA Bi-Plane (Original Wing)	02-07400	$796.00
EAA Bi-Plane (P- Wing)	02-00222	$811.00
Hatz Bi-Plane	02-07500	$1,149.00
Kelly-D	02-07600	$900.00
Marquart Charger	02-07700	$895.00
Pitts Special M-6 or S-1D	02-07800	$545.85
One Design	See Page 15 for Kits	
Sauser P6E	02-02000	$1,052.60
Skybolt	02-07900	$1,021.80
Smith Miniplane	02-08000	$358.05
Stolp Starduster Single Place	02-08200	$591.90
Starduster "Too"	02-08300	$890.00
Starlet	02-08400	$379.95
Wittman Tailwind	02-08500	$396.00
Wittman "V"	02-08600	$337.00

SPRUCE KITS FOR UNLISTED DESIGNS CAN BE FURNISHED IF A MATERIALS LIST IS SUBMITTED.

TYPICAL WEIGHTS OF SPRUCE KITS

EAA Bi-Plane Complete Kit	99 Lbs.
Pitts Special Complete Kit	73 Lbs.
Pitts Special Spar Kit Only	35 Lbs.
Miniplane Complete Kit	49 Lbs.
Fly Baby Complete Kit	132 Lbs.
KR-1 Complete Kit	61 Lbs.

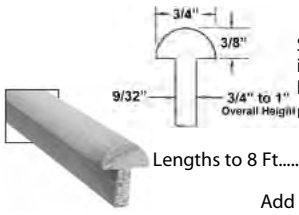
NOTE: Our spruce kits are produced from materials lists which are believed to be accurate. However, since designers may modify certain dimensions after the original plans are released, we urge the builder to verify sizes and current price before ordering.

WE CHARGE NO PACKING CHARGES ON SPRUCE

TRIANGULAR CORNER BLOCKING

90° Corner Blocking
Order by the foot.

Size	Price Part No.	Per Ft.	Size	Part No.	Price
1/4"	02-17600	$0.35	1/2"	02-18000	$0.66
5/16"	02-17700	$0.45	5/8"	02-18100	$0.68
3/8"	02-17800	$0.27	3/4"	02-18200	$1.27
7/16"	02-17900	$0.47	7/8"	02-18300	$1.36



"T" STRINGER STOCK

Standard Spruce stringer material finished to the dimensions illustrated. Lengths over 8 feet require truck shipment.

Lengths to 8 Ft.....P/N 02-18400 ..... $1.45/ft.

Add 20% for lengths over 8 feet.

AIRCRAFT SPRUCE AND PLYWOOD REFERENCE MANUAL

Reprint of Government Specifications MIL-S-6073 and MIL-P-6070.

P/N 13-14900..... $4.95

BALSA WOOD

Balsa is the lightest commercial wood in the world, weighing less than 10 lbs./cu.ft. Pound for pound, it is one of the strongest - both its stiffness and bending strength exceed White Spruce, Western Yellow Pine, Douglas Fir, White Oak and many other commercially used woods. It is easily cut, turned, carved, shaped, glued, sanded and finished, all with ordinary wood working tools and techniques. It can be shaped with abrasive wheels either wet or dry. It can be cut into extremely thin veneers. Almost any kind of coating will adhere to it. Meets specifications MIL-B-2747 and MIL-S-7998.

Furnished as 2" thick boards, 3 ft. long from 3"-6" wide. Material which may be glued together by the builder to make the required size pieces.

2" x 4" x 3 ft Pc..... P/N 02-03500.....$17.85/ea.

ACTUAL SIZES OF BOARDS CAN VARY

AIRCRAFT NAILS

Flat, bonderized steel nails, brass plated to prevent rusting and cement coated to improve holding power. Manufactured to Federal Specification FF-N-105 (formerly AN301). Order by part no.

Part No.	Size		Price		
	Length	Gauge	1/4 Lb.	1/2 Lb.	1 Lb
AN301-20-2	1/4"	20	$3.63	$7.25	$14.50
AN301-20-3	3/8"	20	$3.15	$6.30	$12.60
AN301-20-4	1/2"	20	$3.20	$6.40	$12.80
AN301-20-5	5/8"	20	$2.70	$5.40	$10.80
AN301-20-6	3/4"	20	$2.63	$5.25	$10.50
AN301-20-8	1"	20	$2.48	$4.95	$9.90

There are approximately 9,000 3/8" x 20 steel nails per pound.

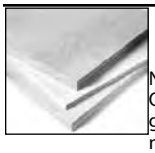
DOMESTIC MIL-P-6070 AIRCRAFT PLYWOOD

American-made structural aircraft-grade plywood is made of imported African Mahogany or American Birch veneers laminated in a hot press to hardwood cores of Poplar or Bass wood with waterproof glue. Will meet all requirements of specification MIL-P-6070, which calls for shear testing after immersion in boiling water for 3 hours. Far superior to many plywoods in which all plies are 1/16" thick and laminated in a cold press to make up the total thickness. Tests should be made on cold-press plywoods before use in aerobatic aircraft.

Thickness			No. of Plies	90° Mahogany			90° Birch		
In.		Approx. MM.		Approx. Wt. 4' x 8' Sheet	Part No.**	4' x 8' Sheet	Approx. Wt. 4' x 8' Sheet	Part No.**	4' x 8' Sheet
1/16	(.070)	1.5	3	6 Lbs.	02-189--	$110.80	7 Lbs.	02-243--	$89.90
3/32	(.100)	2.5	3	10 Lbs.	02-191--	$132.70	12 Lbs.	02-244--	$95.25
1/8	(.125)	3.2	3	12 Lbs.	02-193--	$134.65	15 Lbs.	02-245--	$98.25
3/16	(.190)	4.8	3-5	20 Lbs.	02-195--	$207.95	24 Lbs.	02-246--	$199.50
1/4	(.250)	6.4	5	25 Lbs.	02-197--	$231.95	30 Lbs.	02-247--	$259.95
5/16	(.312)	7.9	5	Lbs.	02-198--	$243.95	30 Lbs.	02-251--	$269.95
3/8	(.375)	9.5	5	Lbs.	02-199--	$279.65	30 Lbs.	02-266--	$280.95
7/16	(.437)	11.1	7	Lbs.	02-120--	$284.95	30 Lbs.	02-267--	$378.00
1/2	(.500)	12.7	7	Lbs.	02-121--	$310.00	30 Lbs.	02-260--	$321.95
				45° Mahogany			45° Birch		
1/16	(.070)	1.5	3	6 Lbs.	02-188--	$214.80	7 Lbs.	02-248--	$212.95
3/32	(.100)	2.5	3	10 Lbs.	02-190--	$239.95	12 Lbs.	02-249--	$227.95
1/8	(.125)	3.2	3	12 Lbs.	02-192--	$251.95	15 Lbs.	02-250--	$218.95

*Domestic plywood is sold only in 2'x4' (8 Sq.Ft.), 4'x4' (16 Sq.Ft.), 2'x8' (16 Sq.Ft.), and full 4' x 8' sheets. If ordering less than full sheet, compute cost based on price/sq.ft. shown in above table.

** The part numbers of full 4' x 8' sheets end with "80". For less than full sheets, the last two digits will change according to the size ordered. Change the last two digits in the part number to "10" for 4' x 4', "20" for 2' x 8' and "30 for 2' x 4'. Example: 1/16" mahogany 90° is 02-18980 (4' x 8'), 02-18910 (4' x4'), 02-18920 (2' x 8') and 02-18930 (2' x4').



FINNISH BIRCH AIRCRAFT PLYWOOD (METRIC)

Note: Full sheets are 4' x 4' and half sheets are 2' x 4'

Quality Birch Aircraft grade plywood produced to AB/B grade on all thicknesses. Finnish birch plywood is furnished in 48" x 48" sheets, depending on current availability. Prices fluctuate with changes in sheet sizes. Full sheets require truck shipment unless cut in half for UPS. Color may vary. Attention: 2' x 4' Plywood are cut with grain. If cross cut required, specify at time of order.

Thickness		Plies	Half Sheet 2'x4'		Full Sheet 4'x4'	
Nom. Inch.	mm		Part No.	Price	Part No.	Price
1/64	0.4	3	02-20250	$27.88	02-20200	$55.75
1/32	0.8	3	02-20350	$15.33	02-20300	$30.65
3/64	1.0	3	02-50050	$19.35	02-50000	$38.70
1/16	1.5	3	02-20450	$18.40	02-20400	$36.80
3/32	2.5	5	02-20550	$29.88	02-20500	$59.75
1/8	3	5	02-20650	$32.38	02-20600	$64.75
3/16	5	10	02-20750	$43.88	02-20700	$87.75
1/4	6	12	02-20850	$53.45	02-20800	$106.90

Corby Starlet 2MM x 48" x 48"....P/N 02-28050....$48.50
1/4 Birch/Poplar 5ply, 45°....P/N 02-27180....$420.95

OKOUME PLYWOOD

Okoume (o-KUE-me), also referred to as Gaboon, is an African hardwood widely used in Europe over the past century. Light pinkish brown in color, sometimes lustrous with variable interlocking grain, the rotary cut panel can be painted or finished bright. The natural durability of this species is extremely low and care must be taken to finish all surfaces, face and edges. Often recommended for use with epoxy saturation systems, the panel exhibits high strength to weight ratios. Face veneers are made from 1.3 mm thick A/B grade rotary cut veneer. Cores and crossbands are solid-joined and the panel glued with waterproof glue. Okoume panels are extensively used by race class boat builders, rowing shell builders and in various applications. Where its lighter weight, good bending properties and ease of finishing are a value, 5/32" thickness is used in the One Design Kit Aircraft and applicable to a wide variety of Homebuilt Aircraft, sold in 4'x8' sheets. Wt. of 5/32" sheet is 8.8 lb. Wt. of 1/4" sheet is 28 lbs. Thickness varies from 4mm to 6mm. Can be cut down for shipping. Certified bs1088

4mm thick x 4' x 8' sheet....P/N 02-20100....$69.50
6mm thick x 4' x 8' sheet....P/N 02-00076....$99.85

LITE PLY PLYWOOD

The beautiful, pliable answer to shaped and curved construction problems. Lite Ply ® is distinguished by its even grain, virtually snow white appearance and unusual resilience. It is a true "white wood, " poplar and finishes uniformly, whether stained or painted.

Supplied for over 50 years, Lite Ply ® has proven to be an excellent wood for industries where weight is a concern. Lite Ply ® has been proven to be a cost effective alternative to other light weight panels.

4' X 8' Sheet 1/8" 3MM....P/N 02-00115....$36.50
4' X 8' Sheet 1/4" 6MM....P/N 02-00116....$56.50

ROYAL MARINE A-A FIR PLYWOOD

First quality marine plywood that meets or exceeds requirements of specifications PSI-74. All are Douglas Fir. Insist on A-A grade for your aircraft!

$4.00 packing charge for less than 3 sheets unless cut to 2'x4' pieces for UPS shipment.

Thick-ness	No. of Plies	Part No.*	Price			
			2'x2'	2'x4'	4'x4'	4'x8'
1/4"	3	02-210--	$8.45	$15.50	$31.50	$63.75
3/8"	4	02-211--	$10.85	$19.50	$39.50	$79.75
1/2"	5	02-212--	$11.25	$22.00	$44.75	$79.50
5/8"	7	02-213--	$11.00	$22.00	$44.00	$89.70
3/4"	7	02-214--	$12.50	$24.25	$48.75	$97.65
1"	7	02-215--	$17.00	$33.00	$66.50	$133.75

*Please order by part number, note thickness & size for verification. The part numbers for full 4'x8' sheets end with "80". For less than full sheets, the last 2 digits of the part number. will change according to size ordered. Change last 2 digits of the part no to "20" for 2'x2', "40" for 2'x4' & "60" for 4'x4'. Example: 1/4" 2'x4' is 02-21040.

BASSWOOD MIL-P-6070 AIRCRAFT PLYWOOD

Basswood meets MIL-P-6070 but is lighter and has more flexibility than Mahogany & Birch plywood, but has slightly less structural strength.

Thickness	No. of Plies	Part No.*	Price			
			2'x2'	2'x4'	4'x4'	4'x8'
1/16"	3	02-253--	$15.75	$30.50	$61.50	$123.95
3/32"	3	02-254--	$15.50	$31.50	$63.50	$127.95
1/8"	3	02-255--	$16.75	$32.25	$65.00	$130.95
3/16"	3	02-256--	$18.00	$35.00	$70.50	$148.75
1/4"	5	02-257--	$30.75	$48.50	$97.50	$195.95
5/16'	5	02-258--	$24.50	$49.71	$99.43	$198.85
3/8"	5	02-261--	$27.75	$53.50	$106.95	$215.95
7/16"	7	02-262--	$32.75	$126.95	$126.95	$274.95
1/2"	7	02-263--	$38.25	$74.00	$147.95	$316.00
5/8"	9	02-265--	$42.00	$81.00	$192.95	$384.95
3/4"	9	02-264--	$57.50	$110.95	$221.95	$444.95

NOTE: All sheets 4'x8'. All plies are basswood. Grain is 90°. Part nos for full 4'x8' sheets end with "80". For less than full sheets, the last 2 digits will change according to the size ordered. Change the last 2 digits in the part no to "60" for 4'x4', "20" for 2'x2' and "40" for 2'x4'. See example in domestic plywood table.

5/16" 5 PLY BIRCH/ BASSWOOD PLYWOOD

2X2....P/N 02-27220....$36.00
2X4....P/N 02-27240....$69.50
4X4....P/N 02-27260....$138.95
4X8....P/N 02-27280....$298.65
4X8 90°....P/N 02-25880....$198.85

ATTENTION - 90° 2' x 4' Plywood are cut with grain. If cross cut required, specify at time of order

INSTANT GLUES – POLYFIX™ GLUES

INSTANT GLUES

These American made Instant Glue products were used extensively in construction of the "Around the World Non-stop" Voyager aircraft and are highly recommended for many homebuilt aircraft applications by Voyager Aircraft, Inc. and Rutan Aircraft Factory. They create a fast, permanent bond on many similar and dissimilar materials such as woods, metals and composite materials.

HOT STUFF™ - Odorless THIN have a consistency resembling that of water, used mainly for bonding parts which fit very well. 2oz
P/N 01-35500 ..... $10.75

UFO™– "UFO" Odorless 'THIN' will not attack foam,making foam bonding possible. Fiberglass skins, right on the foam, are practical and easy with "UFO" Odorless 'THIN'. 2oz. P/N 01-01038 ..... $21.75

SUPER 'T'™ - A consistency similar to that of syrup and has the ability to fill small gaps between parts which don't fit perfectly. SUPER 'T'™ cures at a slower rate than HOT STUFF™, (10-25 seconds depending on the material). 2oz. P/N 01-35600 ..... $10.75

SPECIAL 'T'™ - Special 'T'™ and new UFO™ Odorless THICK are very thick cyanoacrylates with a consistency resembling cold honey. SPECIAL 'T'™ and UFO™ Odorless THICK have greater gap-filling ability than SUPER 'T'™ and more positioning time after contact of parts. The rate of cure is slow enough, (usually 50-60 seconds depending on the material), to allow precise alignment of parts, after assembly. 2oz.
P/N 01-01039 ..... $11.50

UFO™ THICK - Odorless. Those who are sensitive to cyanoacrylate curing fumes will enjoy using the new UFO™ in the place of Special 'T'™. Will not attack foam, making foam bonding possible. NCF HOT or MILD should be used to speed the cure. For foam, use Spray n' Cure™ accelerator. 2oz. P/N 01-01040 ..... $21.95

NCF QUICK™ - Used with HOT STUFF, UFO Odorless THIN, SUPER T, and UFO Odorless THICK., and with it you can do almost magical things. NCF Quick works in three ways to make HOT STUFF , SUPER 'T' and SPECIAL 'T' Easier, Faster, Stronger and able to bond some of the most unusual materials you can think of. P/N 01-00689 ..... $12.95

NCFM™ - Mild Formula accelerator for use with HOT STUFF™, UFO™ Odorless THIN, SUPER T™, and UFO™ Odorless THICK., and with it you can do almost magical things. NCFM™ MAY MELT SOME EXPANDED FOAM PRODUCTS. 2oz. P/N 01-35700 ..... $7.50

NCF™ - An extremely fast acting accelerator for all instant glues. "NCF" does everything NCFM" will do, in a fraction of the time. "NCF" has an extraordinary on-part life. P/N 01-01041 ..... $8.50

SPRAY'N CURE™ - FREE of all chlorinated and fluorinated solvents. 2 minute on-part life after the area is completely dry. Special Note: User must allow 50 to 60 seconds (at room temperature) for complete drying before bonding, white foam friendly P/N 01-01042 ..... $5.25

NCF-5M - The NCF Mild is a mild formula accelerator, capable of dramatically increasing cure time, but not quite as quickly as the NCF Hot. NCF Mild decreases the curing time of the glue and forces the glue to cure when it wouldn't otherwise. This accelerator is active for several minutes, so you can spray several pieces at once if you are making multiple bonds. NCF Mild and Hot are generally not suitable for use with white foam. NCF-5M is a 4.9oz bottle with a plastic spray pump.
P/N 01-35750 ..... $11.50

NCF QUICK AEROSOL ACCELERATOR - QA-3 is a 3oz aerosol can of the NCF Quick accelerator for CA glue The same NCF Quick you already love in a smaller, handier can! Our NCF Quick accelerator is the best you will find anywhere. All of our accelerators dramatically decrease the curing time of the glue and force the glue to cure when it wouldn't otherwise, but NCF Quick is less expensive per ounce, has a more pleasant odor than the others, and comes in a convenient 6oz aerosol can for easy application. This accelerator is active for several minutes, so you can spray several pieces at once if you are making multiple bonds. P/N 01-01295 ..... $7.85

SUPER SOLVENT™ - Ultra Solvent™ is a remarkable debonder and cleaner for any instant glue. Use it for hand clean-up, removes instant glue from most clothing and surfaces. Some fabric, colorings or materials may be affected, so test-patch on an inconspicuous place.
P/N 01-35800 ..... $9.75

INSTA WELD 1

Insta-Weld 1 "Thin" instant adhesive should be used when you have a clean break with no gap to fill. It has the consistency of water. To use, spray the broken area with Insta-Weld Activator (sold separately), clamp the parts together, then apply a small amount of Insta-Weld 1. The adhesive will wick into the crack and create and instant repair. Try Insta-Weld on everything. It will either work, or not work, instantly. Does NOT work on olefin based plastics like polyethylene, polypropylene, TPO and TEO. 2 fl. oz. (59 ml) bottle. P/N 01-01233 ..... $21.70

POLYFIX 7000 EXTRA THICK

This non clog bottle will take care of the problems of plugged up tips. This Extra Thick C.A. polyfix works on ceramics, glass, metal, rubber laminating, soft wood, hard wood and is also water resistant. This C.A. can be carved with a knife or razor blade and can be sanded with foam which leaves an indistinguishable finish from plastic.
P/N 01-01217 ..... $19.95

POLYFIX 8000 HIGH VISCOSITY GAP FILLING

This non clog bottle will take care of the problems of plugged up tips. This High Viscosity gap filling C.A. polyfix works on ceramics, glass, metal, rubber laminating, soft wood, hard wood and is also water resistant. This C.A. can be carved with a knife or razor blade and can be sanded with foam which leaves an indistinguishable finish from plastic.
P/N 01-01218 ..... $19.95

POLYFIX 15000 THIN INDUSTRIAL

This non clog bottle will take care of the problems of plugged up tips. This thin industrial C.A. polyfix works on ceramics, glass, metal, rubber laminating, soft wood, hard wood and is also water resistant. This C.A. can be carved with a knife or razor blade and can be sanded with foam which leaves an indistinguishable finish from plastic.
P/N 01-01219 ..... $19.95

POLYFIX™ 11000 GAP FILLING CYANOACRYLATE

This is a higher viscosity ca for loose fitting joints in which the adhesive must bridge gaps. Normally, the thicker ca is applied to one surface and then the parts are held tightly together for about 5 to 15 seconds. For large surface areas including those with close fitting joints such as lamination Polyfix™ 11000 gap filling should be used. To prevent premature curing, don't spread the glue into a thin film, lay down a serpentine bead with about 1" separation on one surface, then assemble the parts, letting the pressure spread the ca out. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 11000 Gap Fill 1/2 oz	01-01016	$6.50
Polyfix™ 11000 Gap Fill 3-1/2 oz. Brush on	01-01238	$6.65
Polyfix™ 11000 Gap Fill 1 oz	01-01017	$7.90
Polyfix™ 11000 Gap Fill 2 oz	01-01018	$12.75
Polyfix™ 11000 Gap Fill 8 oz	01-01019	$36.75

POLYFIX™ 4000 INDUSTRIAL FLEXIBLE THIN

This low odor flexible thin ca is ideal for many applications. Low odor flexible does not turn brittle and remains clear, even if Accelerator. With Polyfix™ 10000 Accelerator it has superior shock resistance and still has good penetrating qualities and its application can be easier to control for ca and has a different, less irritating odor compared to regular ca's, but still can proven to be superior when bonding anodized aluminum. 1 fl. oz. MIL SPEC-A-46050-C. (CAS NO. 6606-65-1) P/N 01-01020 ..... $7.50

POLYFIX™ 3000 CLEAR FLEXIBLE RUBBER GAP FILLING

Flex gap clear rubber toughened can be used in applications where you do not want the adhesive to be seen it is still superior to standard ca.'s when esthetics's are important and a flexible bond is required this product is your best choice. It forms to soft urethane and vinyl plastic, and shock resistant bonds. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 3000 Rubber Fill 1 0Z	01-01021	$6.75
Polyfix™ 3000 Rubber Fill 2 OZ	01-01022	$12.50

POLYFIX NON-CLOG CYANOACRYLATE APPLICATOR

Reach in a small area where you need to do a repair. Can reach 5-1/2" or if you need to control small drops. Sold in boxes of 24.

Description	Part No.	Price
Non-Clog Applicator Regular Tip	01-01006	$15.50
Non-Clog Applicator Fine Tip	01-01007	$15.50

POLYFIX™ GLUES AND ADHESIVES

POLYFIX™ 17000 INDUSTRIAL ODORLESS THIN

This has a water thin viscosity that wicks deep into joints by capillary action and curses in a matter of a few seconds. Surface to be bonded must be tight fitting and should be bonded must be tight fitting and should be held together while applying the ca around the edges of the seams, at the moment ca's cure eliminates the irritating fumes from the evaporating monomer that makes repeated of ca's unpleasant at times. MIL SPEC-A-46050-C (CAS NO. 27816-23-5)

Description	Part No.	Price
Polyfix™ 17000 Industrial Thin 1/2 oz	01-01023	$9.25
Polyfix™ 17000 Industrial Thin 1 oz	01-01024	$16.95
Polyfix™ 17000 Industrial Thin 2 oz	01-01025	$28.95

POLYFIX™ 17500 PLUS INDUSTRIAL ODORLESS GAP FILLING

Apply a light fog of Polyfix™ 10000 accelerator and apply Polyfix™ 17500+ gap filling. Cures to a more flexible consistence for better shock absorption, when ever a larger amount of ca is to be used in such applications as saturating fiberglass or kevlar. Polyfix™ 17500+ gap filling eliminates the irritating fumes from the evaporation monomer that makes repeated use of ca unpleasant at times. MIL SPEC-A-46050-C. (CAS NO. 27816-23-5)

Description	Part No.	Price
Polyfix™ 17500 Industrial Gap Fill 1/2 oz	01-01026	$9.95
Polyfix™ 17500 Industrial Gap Fill 1 oz	01-01027	$19.50
Polyfix™ 17500 Industrial Gap Fill 2 oz.	01-01028	$30.95

POLYFIX™ 64000 INDUSTRIAL CARBON GAP CYANOACRYLATE

Polyfix™ 64000 carbon extra strength ca is a carbon toughened cynaoacrylate that forms superior shock resistant bonds on non-porus surface the black colored ca has added flexibility for the bonding carbonfiber and other advanced materials as graphite, polycarbon with honeycomb, normax aramid, graphite with aluminum honeycomb. MIL SPEC-A-46050-C (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 64000 Carbon Gap Cyanoacrylate 1/2 oz	01-01029	$5.95
Polyfix™ 64000 Carbon Gap Cyanoacrylate 1 oz	01-01030	$11.50
Polyfix™ 64000 Carbon Gap Cyanoacrylate 16 oz	01-01031	$173.95

POLYFIX™ POLYDUST CATALYTIC

The patented Thermal Process Catciytically (I.C. chemically) generates heat to 142 degrees fahrenheit and actualy thermal sets or fuses the repair to the Patent material. POLYFIX™ 10000 Accelerator POLYFIX™ 14000 Thin Cyanoacrylate (PJ 33) POLYDUST Catalytic filler By using these three products that was certified by Cessna Aircraft, U.S. Army Aviation Systems, Boeing Aircraft. (CAS NO. 601-35-4)

Warning: If you use any other products with the POLYFIX™ polydust catalytic, AIRCRAFT SPRUCE AND SPECIALTY INC. AND REDAM/ RB INC. WILL NOT BE RESPONSIBLE FOR ANY ACCIDENTS

Description	Part No.	Price
Polyfix™ Polydust Catalytic 10M/MG	01-01032	$5.90
Polyfix™ Polydust Catalytic 1/2 PT	01-01033	$39.95
Polyfix™ Polydust Catalytic 1 PT	01-01034	$68.75

POLYFIX™ 10000 ACCELERATOR IN PLASTIC BOTTLES

Non-flammable and less then 10% degrade when applied on ca's comparing to methanol and acetone accelerator that has 13/15% degrade. This accelerator allows ca's to quickly cure by enhancing the alkaline conditions during polymerization. POLYFIX™ 10000 in a spray bottle is normally used to cure the ca that flows from joints or cracks when parts are pressed together. Apply an additional bead of thick ca along seam and then curing with POLYFIX™ significantly in hances a crack's strength. For difficult to bond material, POLYFIX™ 10000 can be applied to one surface and ca to the opposite surface. When brought together, they will bond instantly. MIL SPEC-A-4605-C-TYPE II A OR III A. (CAS NO. 99-97-8). (CAS NO. 64742-48-9)

Description	Part No.	Price
Polyfix™ 10000 Accelerator 2 oz.	01-01035	$11.75
Polyfix™ 10000 Accelerator Refill 8 oz	01-01036	$18.50

POLYFIX™ 6000 DEBONDER

Will soften cured ca. If parts are bonded incorrectly or your fingers are stuck together a few drops of POLYFIX™ 6000 debonder. Will dissolve the ca in about a minute. Apply on bonded skin and roll apart fingers. Once unstuck, use Acetone to clean off softned ca then wash off with soap and water POLYFIX™ 6000 debonder will easily remove the adhesive residue. 1 fl. oz. (CAS NO. 68-12-2) P/N 01-01037.....$4.50

POLYFIX 14000 THIN CYANOACRYLATE

Polyfix™ 14000 Thin Cyanoacrylate has a super thin viscosity that penetrate deep into cracks by capillary action and cures in a matter of a few seconds. Surfaces to be bonded must be tight fitting and should be held together while you apply the ca around the edges of the seams at the moment ca's cure they give off a vapor that can irritate the nose and eyes, so be prepared. Thin ca's work very well on any type of material, form more than just a surface bond. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 14000 Thin Cyanoacrylate 1/2 oz	01-01008	$3.95
Polyfix™ 14000 Thin Cyanoacrylate 1 oz	01-01009	$7.80
Polyfix™ 14000 Thin Cyanoacrylate 2 oz	01-01010	$12.75
Polyfix™ 14000 Thin Cyanoacrylate 8 oz	01-01011	$34.95

POLYFIX 9000 EXTRA THICK

It's all a round ca for ceramics, glass, metal, rubber laminating, soft wood, hard wood. Water resistant. This ca is the best for most clear plastic including GE's Lexan when used with Polyfix™ 10000 Accelerator it will fill most voids it can be carved with a knife or razor blade and sanded to foam a finish indistinguishable from plastic its extra thick. Thickness makes it easy to work with most applications. MIL SPEC-A-46050-C (CAS NO. 7085-85-0)

Description	Part No.	Price
Polyfix™ 9000 Extra Thick 1/2 oz	01-01012	$4.45
Polyfix™ 9000 Extra Thick 1 oz	01-01013	$7.90
Polyfix™ 9000 Extra Thick 2 oz	01-01014	$12.45
Polyfix™ 9000 Extra Thick 8 oz	01-01015	$34.95

POLYFIX™ PLASTIC REPAIR KITS

Polyfix™ Thermal Fusion is a 3-part system that uses chemical reaction to heat the repair to 142°F, fusing it to the parent part. This system repairs ABS, royalite, graphite, lexan, polycarbon, Kevlar, plexiglass, fiberglass and many other materials. The system combines Industrial cyanoacrylate glue, a catalytic filler, and an accelerator. May be used on speed fairings, wing tips, cowlings, glare shields, and more. Kits include Polyfix™ Industrial chemical, polydust, gloves, finger cots, fiberglass mat, protection hand cream, no mixing tools, and an easy to follow instruction manual. Zero Shrinkage.

PLASTIC REPAIR KIT (SMALL)- Size: 1/4" x 1/8" x 30". 1/2oz. 14000 CA. Thin. 1/2oz 10000 Accelerator. 2 M/Grams Catalytic. 1-3" x 8" Fiberglass. 1/2oz Hand Cream. 1-Pair Latex Gloves. 6 Finger Cots. 1 Manual (33 Page w/words/Pictures) MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 90-97-8). (CAS NO. 64742-48-9) P/N 01-01045..... $22.45

PLASTIC REPAIR KIT (MEDIUM) - Size: 1/4" x 1/8" x 60". 1 Manual (33 Page w/words/Pictures). 1oz 14000 CA. Thin. 4 M/Grams Catalytic. 1/2oz. Hand Cream. 1oz 10000 Accelerator. 1-3 x 12" Fiberglass. 1 Pair Latex Gloves. 10 Fingercots. G.S.A NATIONAL STOCK NO. POLYFIX. 1-LB 1800 NUMBER 8040-01-364-799. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 90-97-8). (CAS NO. 64742-48-9)
P/N 01-00235..... $34.75

PLASTIC REPAIR KIT (LARGE) - Size: 1/4" x 1/8" x 120". 1 Manual (33 Page w/words/Pictures). 2oz. 14000 CA THIN. 2oz 10000 Accelerator. 8 M/Grams Catalytic. 10" x 10" Fiberglass (mat). 1/2oz Hand Cream. 2 Pairs Latext Gloves. 20 Fingercots. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 99-97-8). (CAS NO. 64742-48-9)
P/N 01-00236..... $59.80

PLASTIC REPAIR KIT (X-LARGE) - Size: 1/4" x 1/8" x 600". 1 Manual (33 Page w/words/Pictures). 10 oz. 14000 CA Thin. 50 M/Grams Catalytic. 1oz. Debonder. 12 Pair Latex Gloves. 10 Piece Assortment of Sandpaper. 1 Pair Scissors. 10oz 10000 Accelerator. 18" x 18" Fiberglass. 1oz. Hand Cream. 50 Fingercots. 1 Sanding Block. MIL SPEC-A-46050-C. (CAS NO. 7085-85-0). (CAS NO. 601-35-4). MIL-A-46050-C TYPE II A OR III A. (CAS NO. 99-97-8). (CAS NO. 64742-48-9). (CAS NO. 68-12-2). P/N 01-00237..... $292.95

CASCOPHEN

A Resorcinol Formaldehyde Adhesive capable of curing at room temperature and providing strong, durable, waterproof bonds. Comes in two parts, a liquid resin (part A) and a powered catalyst (part B). The liquid resin is an alcohol-water solution of a partially condensed resorcinol-formaldehyde resin containing a suitable reinforcing cellulosic filler. The hardener is a tan powder formulated from paraformaldehyde and a suitable cellulosic filler. Produces a cured glue line which is resistant to fresh water or salt water, most acids and organic solvents, and lubricating oils and greases. Being thermoset, the bond is resistant to elevated temps. and conversely, no loss in bond strength occurs at temperatures as low as -40°F. These features make it advantageous for use as a general marine and aircraft use. It provides strong bonds between many wood and non-wood surfaces. These include treated woods, many plastics, natural and synthetic rubber, primed metal, leather, textiles, paper and fiber boards.

Pint Kit (Pint A, 1/4lb B).....P/N 02-00036.....$23.50
Quart Kit (Qt A, 1/2lb B).....P/N 02-00037.....$33.85
Gallon Kit (Gal A, 2lbs B).....P/N 02-00038.....$119.50

FPL-16A HUGHES GLUE

This is an exceptionally fine two-part white epoxy glue for homebuilt and experimental aircraft. It is based on a formula developed by Forest Products Laboratories. It is excellent not only for wood but for many other applications such as a metal to wood adhesive, metal to metal, just about anything with the exception of some plastics. It has been used by builders for many years with universal acceptance. Its low viscosity makes it very easy to work. Shelf life: Resin - more than 1 yr. Hardener - Indefinite.

Qt Kit (1 qt. resin, 4oz hardener, Wt 4 lbs).....P/N 02-23400.....$52.50
Gal Kit (1 gal resin, 16oz hardener, Wt.13 lbs).....P/N 02-23500.....$114.95

HYSOL EA-9430 GLUE

This new and improved Hysol glue replaces the old EA-9410-2 glue. EA-9430 has the same characteristics as the EA-9410, but has a 50 minute pot life instead of the 30 minute pot life of the EA-9410 at 77°F. Used extensively in the Strojnik S2A sailplane and many other homebuilts.

P/N 02-18600.....$78.75

WEST SYSTEM SIX10 THICKENED EPOXY ADHESIVE

Six10 Adhesive gives you the strength and reliability of a two-part WEST SYSTEM epoxy with the convenience of a single part product. Six10 is dispensed with a standard caulking gun. Non-sagging Six10 bonds tenaciously to wood, metals, fiberglass and concrete. It cures in temperatures as low as 50°F. Working time is 42 minutes at 72°F. Cures to a solid in 5–6 hours and will take high loads in 24 hours. Cure time is faster at warm temperatures and slower in cool temperatures. Cartridge holds 190 ml of resin and hardener. To use, replace the retaining nut and plug on the West System Six10 dispensing cartridge with the 600 Static Mixer that comes attached to the cartridge. Dispense mixed 2 part epoxy adhesive using a standard caulking gun. The efficient internal geometry of the 600 Mixer thoroughly blends resin and hardener in a short mixing length for good application control and a minimum of waste. Additional 600 StaticMixers are available in packages of two or twelve.

Part No.	Description	Unit Size	Price
01-01069	Epoxy Adhesive Cartridge	190 ml	$19.85
01-01071	Static Mixers	2 ea	$3.79

FASTWELD 10 A/B HIGH SETTING EPOXY

Fastweld 10 A/B epoxy adhesive is a rapid-setting, two-component paste offering a convenient one-to-one mixing ratio by volume or weight. Fastweld 10 A/B epoxy adhesive produces strong bonds in a very short period. It is especially suited for bonding small parts and for repair work. Pot life: 3-4 minutes at 77° F, Cure Time: 4 hours. Shelf life: 3 years.

P/N 09-03454.....$22.90

3M™ EPX Pneumatic Mix Nozzle 9742

P/N 09-01372.....$2.25

FASTWELD 10 A/B HIGH SETTING EXPOXY GUN

Dual cartridge dispenser gun designed for use with 50ml style adhesive cartridges.

P/N 09-03455.....$68.75

T-88 STRUCTURAL ADHESIVE

T-88 is a non-brittle structural adhesive which gives superior finished results even when used under adverse working conditions. T-88 will cure in temperatures as low as 35°F which makes it an excellent choice for homebuilders living in colder climates. It is recommended by the builders of many types of home-built aircraft and is excellent for bonding aluminum, steel or wood. When fully cured, it is not affected by water, oil, gasoline and most other chemicals.

1/2 Pt Kit.... P/N 02-00046.....$19.50 Pt. Kit..... P/N 02-00047 ..... $25.50
Qt. Kit..... P/N 02-00048.....$38.70 Gal. Kit..... P/N 02-00049 .....$109.80

T-88 UNIVERSAL CARTRIDGES

With the Universal Cartridge any medium to high quality caulking gun will work just fine. When you evaluate the Universal Cartridge notice that without a mixture tip it is perfect for accurately measuring small batches of adhesive. This is something that is very hard to do in a mixing cup without generating a lot of waste. Of course when the cartridge is used with the mixing tip you get both accurate measuring and thorough mixing making large, continuous gluing jobs much easier with flawless products performance. Note: Cartridge includes one mixing tube. Extra mixing tubes and caps are sold seperately.

P/N 02-00103..... $21.50

REDI-MIX MIXER TUBE

The static mixer tube attaches to the cartridge with a retaining nut which screws on securely to the REDIMIX gun. The mixer tip tapers to 1/8" but may be cut back to about 1/4". Very small quantities of epoxy may be prepared in this manner without any waste or added cost. P/N 02-90030.....$2.60

WELDWOOD GLUE

A powdered, urea formaldehyde wood glue activated by mixing with water. Forms a bond stronger than the wood itself. Mets Fed. Spec. A-A-3052. Low VOC.

1 Lb.....P/N 0203 .....$17.75
4.5 Lb.....P/N 0204 .....$61.50

SCOTCH WELD 3M™ STRUCTURAL ADHESIVE

Commonly known as "Scotch Weld", this two part epoxy structural adhesive will bond wood, metal, plastics and rubber. It has a pot life of nearly 2 hours after mixing, and a 24 month shelf life. Forms flexible yet very strong bonds. Color:Gray. 2 oz. kit..... P/N 02-00045 .....$47.50

OUIK FIX EPOXY PUTTY STICKS

Quikfix BC 101 is a hand mixable, fast curing, general purpose epoxy putty stick that mixes in just one minute to provide fast repairs to many surfaces including metals, wood, glass, concrete, ceramics and numerous plastics. One hour after mixing, QuikFix BC 101 can be drilled, sawed, sanded, filed, tapped, machined, or painted. Color: Gray (after cure).

3.5" stick ..... P/N 01-00333.....$11.95
7" stick..... P/N 01-00332.....$13.95

BOND-AIDE WOOD EPOXY PUTTY

Bond-Aide P-1500W is a wood epoxy putty compound that cures in minutes to form permanent repairs on woods, plaster, ceramics and many plastics with no shrinkage. Excellent for bonding wood to wood, wood to metal, and wood to glass or ceramics. P-1500W has a multitude of uses in aircraft restoration, rebuilding, and repair.

1 tube 2-part Bond-Aide P-1500W ..... P/N 02-18650 .....$14.75/ea

G/FLEX EPOXY ADHESIVE

A toughened, versatile, liquid epoxy for permanent waterproof bonding of fiberglass, ceramics, metals, plastics, damp and difficult-to-bond woods. Modulus of elasticity of 150,000 PSI. Can absorb the stress of expansion, contraction, shock and vibration. Can be modified with West System fillers and additives, and used to wet-out fiberglass tapes and fabrics. Mixed at a 1:1 ratio, G/flex gives you 45 minutes of working time at room temperature. It reaches an initial cure in 7 to 10 hrs and full cure in 24 hrs.

Epoxy Adhesive.....P/N 01-01162 .....$20.19

650-K Epoxy Kit - Contains 4 fl. oz. G/flex 650 resin, 4 fl. oz. G/flex 650 hardener (8 fl. oz. mixed epoxy), 2 reusable mixing stick/applicators, 2 12-cc syringes, 4 grams Adhesive Filler, 4 mixing cups, 1 pair disposable neoprene gloves, 4 alcohol cleaning pads and complete handling and repair instructions.....P/N 01-01161 .....$29.98

655-K Epoxy Repair Kit - Contains 4.5 fl. oz. G/flex 655 resin, 4.5 fl. oz. G/flex 655 hardener (9 fl. oz. of mixed epoxy), 2 reusable mixing stick/applicators, 4 alcohol cleaning pads, 1 pair disposable neoprene gloves, 10 mixing palettes and complete handling and repair instructions.

P/N 01-01163 .....$29.98

PTM&W ES6279 AEROPOXY EPOXY ADHESIVE

Manufactured by PTM & W Industries, Inc. ES6279 is a light grayish-tan two part adhesive that was developed specifically for difficult bonding problems involving similar or dissimilar materials. ES6279 provides excellent adhesion to a wide variety of materials such as aluminum, steel, brass, glass, ceramics, and wood. The mix ratio of 1 to 1 by weight or volume allows easy measuring, and the creamy, smooth viscosity allows easy, uniform application. The cured material has excellent strength as well as good resistance to weak acids, moisture, and weather. ES6279 has been used successfully for many years in a variety of general bonding uses as well as numerous production applications.

Part No.	Description	Wt. (lbs.)	Price
02-30015	1/2 quart part A only	3.0	$39.65
02-30020	1/2 quart part B only	3.0	$36.75
02-30025	ES6279 QUART KIT	6.0	$76.90
02-30030	1/2 gallon part A only	12.0	$106.95
02-30035	1/2 gallon part B only	12.0	$114.95
02-30040	ES6279 GALLON KIT	24.0	$220.95
02-30045	1/2 pail part A only	60.0	$466.95
02-30050	1/2 pail part B only	60.0	$418.95
02-30055	ES6279 PAIL KIT	120.0	$884.00

PTM&W ES6209 AEROPOXY STRUCTURAL ADHESIVE

ES6209 is a translucent, straw colored two component epoxy adhesive with a thick, liquid consistency. ES6209 is an excellent structural adhesive for use when good flow and surface wetting are required. Though pourable it has a controlled flow viscosity to minimize run-out from the adhesive joint. The 1 to 1 combining ratio by weight or volume makes it easy to measure and mix. The working time of over an hour provides plenty of time to coat and assemble the materials to be bonded. ES6209 has excellent adhesion to composite and metal parts typically used in kitplane construction. It bonds rigid foam, wood, ceramics, fiberglass and most metals with ease. When cured ES6209 provides tough, durable structural joints. Mix Ratio: 1 to 1 by weight or volume; Color: Translucent Amber, Mixed Viscosity: 45,000-55,000cps; Pot Life 4fl. oz. Mass: 60-90 min @ 77°F; Cure Time @ 77°F 18-24 hrs, @ 140°F 2-3 hrs.

Quart Kit..... P/N 01-00295 .....$48.50

METAL SET A4 ALUMINUM FILLED EPOXY ADHESIVE

Metalset A4® is a powerful epoxy adhesive that has been used for years by all branches of the U.S. Military as well as every major airline and auto manufacturer in the world. A4 is used for hundreds of industrial bonding applications and offers excellent adhesion to porous or non-porous surfaces. It can be applied to vertical surfaces without sagging and cures overnight with negligible shrinking. Once cured, A4 offers good machining qualities (sanding, drilling, tapping), and resists alkalies, dilute acids and solvents. Applications include stopping leaks in pipes, valves and tanks (i.e. car gas tanks), bonding like and unlike surfaces, filling metal joints, dents, etc., anchoring bolts in wood, concrete, and repairing metal surfaces.

6 oz tube - 16 hour cure time.....P/N 02-00220 .....$13.75
11 oz tube.....P/N 02-00223 .....$1,225.00

GORILLA GLUE
TOUGHEST GLUE ON EARTH

Gorilla Glue is known as the toughest glue on planet Earth. A high strength adhesive that quickly bonds wood, metals, stones, ceramics, and more. Gorilla Glue is a versatile, interior/exterior adhesive ideal for building projects. 8 oz. bottle.

Benefits: • 100% Waterproof • Incredibly Strong and Versatile • Stainable and Paintable • Easily Sanded • More Coverage • A Long Open Working Time • Dries Light Tan • Non-toxic • Acid-Free

8oz. .....P/N 02-00101 ..... $12.85
Single use (4 tubes) .....P/N 02-00225 .....$4.95

PTM&W ES6228 METAL BONDING ADHESIVE

ES6228 is a thin paste viscosity epoxy adhesive designed to provide good bonds to metal surfaces. A unique feature of ES6228 is its ability to bond to slightly oily metal surfaces. This is useful in situations where the complete removal of residual mill oil on metal surfaces is not possible. The thin paste consistency of ES6228 wets the metal surface well, for good adhesion. This viscosity also provides some gap filling capabilities, so "close-fitting" joints are adequate, and matched-metal joints are not required. ES6228 has a 1:1 mix ratio, by weight or volume, for easy measuring. The white resin and black hardener combine to a smooth gray system that is easy to mix and apply, The cured material has very good properties, with high bond strength and elongation, for tough durable assemblies.

Quart Kit (4.5 lbs).....P/N 01-00415 .....$64.50
Gallon Kit (18 lbs).....P/N 01-00414 .....$203.95

Product Specifications	ES6228-A Resin	ES6228-B Hardener	Test Method
Color	White	Black	Visual
Viscosity,cps	Thin Paste	Thin Paste	ASTM D2393
Specific Gravity	1.32	1.30	ASTM D1475
Density Lb./cu.in.	.0477	.0470	ASTM D792
Mix ratio	100:100 by weight or volume		PTM & W

SYSTEM THREE ROTFIX

Rotfix is an easy-to-use, low viscosity epoxy wood restoration system for consolidation of rotted, deteriorated, dried out, or spongy wood. It creates a strong water-resistant base for repair and restoration. Penetrates deep into wood for maximum strength. Use with Sculpwood for permanent structural repair or severely damaged wood. Kit includes 16 oz measuring/application bottle.

1.5 pint (24 oz) Kit .....P/N 02-90050.....$43.70/ea

SYSTEM THREE SCULPWOOD

Sculpwood is a moldable, carvable, sandable epoxy putty for replacement of damaged wood. It forms a strong, permanent bond to most rigid surfaces and can be sawed, nailed, carved, machined, sanded, stained, painted, and screwed. Porous, rotted, or deteriorate wood should first be treated with RotFix.

2 pint (32 oz) Kit .....P/N 02-90055 .....$42.50/ea

SYSTEM THREE QUICK CURE EPOXY

Quick Cure is a 5 min. epoxy from System Three which bonds wood, metals, fiberglass, ceramics, plastics and glass. Excellent for making quick repairs, as it hardens in 5 minutes at room temperature. Mixing ratio: 1 to 1. Not recommended for applications in excess of 200°F.

Pint Kit..... P/N 02-30060 ..... $29.95
Quart Kit ..... P/N 02-30065 ..... $53.85

GORILLA SUPER GLUE

Its high strength and quick set time make Gorilla Super Glue the go-to for a variety of household projects. Developed for long-lasting repairs in an instant, Gorilla Super Glue is formulated with tiny rubber particles for increased impact resistance. We call it Impact-Tough® because it stands up to wear and tear unlike any other instant glue.

Gorilla Super Glue Gel is an easy-to-use, thicker and more controlled formula great for multiple surfaces and vertical applications.

Super Glue.....P/N 09-04093 .....$3.35
Super Glue Gel.....P/N 09-04094 .....$3.35

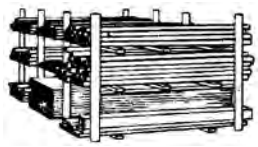
METLWELD EPOXY ADHESIVE

MetlWeld ia a 2-part, equal volume ratio, room temperature curing epoxy adhesive. MetlWeld develops strength earlier than other comparable 1:1 systems and may be used at temps. as low as 50˚F. Metal to be bonded should be freshly sanded and clean from grease, wax, oil and other contaminants. Allow 48 hours min. to cure and develop strength at 77˚F (longer at cooler temps.) before subjecting to stress. Bonds plain & anondized aluminum, glazed & unglazed ceramic; concrete; copper; glass; galvanized and stainless steel; neoprene rubber and most porous materials. Does not bond acrylic, polyethylene, polypropylene, polystyrene or vinyl plastics.

1/2 Pint Kit.....P/N 01-00406 .....$21.50
Pint Kit .....P/N 01-00407 .....$32.50
Quart Kit.....P/N 01-00408 .....$45.90

4130 STRUCTURAL TUBING

4130 ALLOY STEEL ROUND SEAMLESS TUBING MIL-T-6736 NORMALIZED /ANNEALED



4130 is a chromium-molybdenum general purpose alloy steel tubing that is weldable and is capable of developing good strength. It has been for years the standard of the aircraft industry. Tensile Strength: 90,000 PSI. The stock sizes listed below can be furnished in lengths from 1 foot to 12 feet. Large orders are filled in random lengths from 10 to 12 feet unless specific lengths are requested. No charge is made for cutting stock sizes of tubing to mailable length. Quotations furnished on unlisted sizes.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER.
PLEASE INDICATE AT TIME OF ORDER

O.D. (In.)	Wall Thickness	I.D. (In.)	Wt. Per Ft.	Part No.	Price Per Ft.
3/16	.035	.131	.0478	03-00183	$4.45
1/4	.028	.194	.0672	03-00250	$8.50
	.035	.180	.0804	03-00300	$2.65
	.049	.152	.1052	03-00400	$4.85
	.058	.134	.1189	03-00500	$13.50
	.065	.120	.1284	03-00510	$4.95
5/16	.028	.256	.0852	03-00600	$7.75
	.035	.243	.1039	03-00700	$4.65
	.049	.215	.1382	03-00800	$5.80
	.058	.196	.1580	03-00810	$6.25
	.065	.182	.1722	03-00900	$8.70
	.095	.123	.2212	03-01000	$6.94
3/8	.028	.319	.1038	03-01100	$5.25
	.035	.305	.1271	03-01200	$3.50
	.049	.277	.1706	03-01300	$3.45
	.058	.259	.1964	03-01400	$3.35
	.065	.249	.2152	03-01500	$4.35
	.083	.209	.2588	03-01600	$5.25
	.095	.185	.2841	03-01610	$5.75
7/16	.035	.367	.1506	03-01700	$4.30
	.049	.340	.2036	03-01800	$4.99
	.058	.125	.236	03-00067	$6.50
	.065	.307	.2589	03-02000	$5.25
	.095	.247	.3480	03-02100	$7.38
	.120	.197	.4075	03-02200	$8.50
1/2	.028	.444	.1411	03-02300	$4.80
	.035	.430	.1738	03-02400	$2.97
	.049	.402	.2360	03-02500	$3.15
	.058	.384	.2738	03-02600	$3.50
	.065	.370	.3020	03-02700	$3.85
	.083	.334	.3696	03-02710	$4.00
	.095	.310	.4109	03-02800	$6.50
	.120	.260	.4870	03-02900	$5.97
9/16	.035	.492	.1974	03-03000	$8.25
	.049	.464	.2690	03-03100	$5.85
	.065	.432	.3457	03-03200	$9.25
	.120	.322	.5677	03-03400	$8.96
5/8	.028	.569	.1785	03-03500	$5.50
	.035	.555	.2205	03-03600	$1.96
	.049	.527	.3014	03-03700	$4.40
	.058	.509	.3512	03-03800	$3.99
	.065	.495	.3888	03-03900	$4.45
	.095	.435	.5377	03-04000	$7.90
	.120	.385	.6472	03-04100	$5.35
	.156	.313	.7814	03-04110	$9.89
3/4	.028	.694	.2159	03-04250	$5.75
	.035	.680	.2673	03-04300	$3.35
	.049	.652	.3668	03-04400	$3.83
	.058	.634	.4287	03-04500	$4.20
	.065	.620	.4755	03-04600	$4.35
	.095	.560	.6646	03-04700	$7.50
	.120	.510	.8074	03-04800	$5.95
	.156	.437	.9897	03-04900	$7.50
	.188	.375	1.128	03-05000	$9.50
7/8	.035	.805	.3140	03-05300	$3.90
	.049	.777	.4323	03-05400	$3.90
	.058	.759	.5061	03-05500	$4.55
	.065	.745	.5623	03-05600	$5.15
	.083	.709	.7021	03-05700	$5.75
	.095	.685	.7914	03-05800	$6.25
	.120	.635	.9676	03-05900	$6.75
	.188	.500	1.379	03-06000	$9.87

Please call for price on any unlisted size.
Discount of 10% for 100 ft. or more of the same part number.

O.D. (In.)	Wall Thickness	I.D. (In.)	Wt. Per Ft.	Part No.	Price Per Ft.
1	.028	.944	.2907	03-06110	$7.25
	.035	.930	.3607	03-06100	$3.78
	.049	.902	.4977	03-06200	$3.95
	.058	.884	.5835	03-06300	$4.40
	.065	.870	.6491	03-06400	$3.95
	.083	.834	1.0	03-06450	$5.75
	.095	.810	.9182	03-06500	$4.45
	.120	.760	1.128	03-06600	$6.38
	.156	.687	1.406	03-06700	$8.25
	.188	.625	1.630	03-06800	$12.75
1-1/8	.035	1.055	.4074	03-06900	$5.92
	.049	1.027	.5631	03-07000	$4.98
	.058	1.009	.6609	03-07100	$3.40
	.065	.995	.7359	03-07200	$5.35
	.095	.935	1.045	03-07300	$5.75
	.120	.885	1.288	03-07400	$9.35
1-1/4	.035	1.180	.4542	03-07500	$5.45
	.049	1.152	.6285	03-07600	$5.25
	.058	1.134	.7384	03-07700	$4.25
	.065	1.120	.8226	03-07800	$4.85
	.083	1.084	2.132	03-07810	$5.35
	.095	1.060	1.172	03-07900	$5.85
	.120	1.010	1.448	03-08000	$6.85
	.156	.938	1.823	03-08100	$9.50
1-3/8	.035	1.305	.5009	03-08210	$5.75
	.049	1.277	.6939	03-08200	$6.80
	.058	1.259	.8158	03-08300	$4.55
	.065	1.245	.9094	03-08400	$4.55
	.095	1.185	1.299	03-08500	$5.75
	.120	1.135	1.609	03-08600	$8.25
	.188	1.000	2.383	03-08700	$13.00
1-1/2	.035	1.430	.5476	03-08800	$5.93
	.049	1.402	.7593	03-08900	$8.75
	.058	1.384	.8932	03-09000	$4.95
	.065	1.370	.9962	03-09100	$4.95
	.083	1.334	1.256	03-09110	$4.95
	.095	1.310	1.426	03-09200	$6.75
	.120	1.260	1.769	03-09300	$7.75
	.188	1.125	2.634	03-09400	$12.75
1-5/8	.058	1.509	.9707	03-09600	$10.93
	.065	1.495	1.083	03-09700	$5.93
	.083	1.459	1.10	03-00042	$6.75
	.095	1.435	1.552	03-09800	$7.85
	.120	1.385	1.929	03-09900	$9.90
	.156	1.312	2.447	03-10000	$15.85
	.188	1.250	2.885	03-10100	$16.50
1-3/4	.049	1.652	.8902	03-10200	$7.50
	.058	1.634	1.048	03-10210	$8.98
	.065	1.620	1.170	03-10300	$8.00
	.095	1.560	1.679	03-10400	$5.70
	.120	1.510	2.089	03-10500	$9.85
	.188	1.375	3.136	03-10510	$18.65
1-7/8	.250	1.375	2.249	03-10600	$19.50
2	.049	1.902	1.021	03-10710	$12.50
	.065	1.870	1.343	03-10800	$6.90
	.095	1.810	1.933	03-10900	$9.75
	.120	1.760	2.409	03-11000	$11.50
	.188	1.625	3.638	03-00193	$18.75
2-1/4	.120	2.010	2.730	03-11100	$10.75
2-1/2	.095	1.81	1.933	03-11150	$14.80
	.250	2.000	6.008	03-11206	$24.70
	.120	2.260	3.050	03-11200	$14.50
2-3/4	.120	2.510	3.235	03-00206	$19.75
	.125	2.510	3.370	03-11210	$24.50

Ordering tubing/bar by the foot.
Add a dash number after part number to indicate length of tubing required.
Ex: 3 ft required add -3, 03-00100-3.

4130 TUBING KITS

We furnish complete 4130 tubing kits for a variety of aircraft designs including the Skybolt, Pitts Special, Acro Sport, Starduster, Osprey, and many more. The kits contain sufficient round, square, & streamline tubing to produce the pieces shown on our materials list for each design. We urge the builder to verify his own materials list against ours. Request kit list you require & current quotation. Enjoy big savings by purchasing a complete tubing kit for your aircraft at one time.

TUBE SEAL (LINE OIL)

Prevents rust and corrosion inside aircraft tubing structures. Will climb tubing wall and spread over entire surface. Will penetrate and reveal small pin holes in a weld and in time, due to exposure, will congeal and seal the hole. Directions on label. One quart will treat two light aircraft fuselages. Quart .....P/N 03-14000.....$26.00

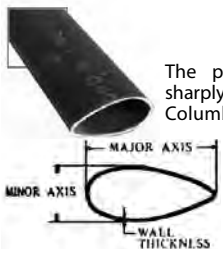
BARGAIN BAG 4130 TUBING

Starter Kit - An assortment of 4130 tubing, rod and bar in short lengths to practice welding. At least 15 ft. of tubing in assorted sizes and wall thicknesses. Furnished subject to availability of cutoffs.

P/N 03-15900.....$27.85

STEEL TUBING & ROD

ME



4130 STREAMLINE TUBING MIL-T6736 NORMALIZED

The prices for streamline tubing have increased sharply. The only manufacturer of streamline tubing, Columbia Summerill, have encountered problems with cracking on the trailing edge intermittently for many years and it has been a worrisome problem for builders. In an effort to control the situation, Columbia Summerill have installed sophisticated inspection equipment in their plant to assure that no cracked tubing gets into the field again. The cost of the equipment is reflected in the prices for the tubing which must be shared by all.

Major Axis	Minor Axis	Wall	Equivalent Round Tension	Equivalent Tubing Compr.	Wt./ Ft.	Part No.	Price Per Ft
1.180	.500	.035	7/8"	7/16"	.3140	03-11400	$17.00
1.349	.571	.049	1"	5/8"	.4977	03-11500	$14.50
1.685	.714	.049	1-1/4"	3/4"	.6285	03-11600	$21.75
2.023	.857	.049	1-1/2"	1"	.7593	03-11700	$22.85
2.360	1.000	.049	1-3/4"	1-1/8"	.8902	03-11800	$23.75
2.697	1.143	.065	2"	1-1/4"	1.021	03-00192	$55.75
3.372	1.429	.049	2-1/2"	1-1/2"	1.283	03-12000	$48.65

4130 AIRFRAME SQUARE & RECTANGULAR TUBING MIL-T-6736 NORMALIZED

O.D. (In.)	Wall (In.)	Weight Per Ft.	Part No.	Price Per Ft.
1/2 x 1/2	.035	.2213	03-12200	$7.97
1/2 x 1	.065	.6055	03-12350	$9.93
5/8 x 5/8	.035	.2808	03-12400	$7.93
	.049	.4234	03-12500	$8.97
	.065	.388	03-12600	$10.78
3/4 x 3/4	.035	.3403	03-12700	$8.75
	.049	.4671	03-12800	$8.50
	.065	.6055	03-13000	$11.90
	.065	.7160	03-13300	$13.75
1 x 1	.035	.4593	03-13400	$9.96
	.049	.6337	03-13500	$9.75
	.065	.8265	03-13700	$10.75
3/4 x 1-1/2	.049	.9057	03-13900	$11.95
1 x 1-3/4	.065	1.158	03-13950	$16.43

E-4340 ROUND STEEL ROD

SPEC.MIL-S-8503COLDFINISHEDANNEALED

E4340 rod has high fatigue strength and maintains its hardness and strength qualities even at high temperatures. Excellent for use in highly stressed parts. Meets AMS2032 and is furnished normalized and tempered cold finished.

Dia. (In.)	Wt./Ft. (Lbs.)	Part No.	Price / Ft.
1	2.67	03-26700	$44.50
1-1/4	4.173	03-26850	$18.50
1-3/8	5.049	03-26900	$12.70
2	11.20	03-26950	$77.80

STAINLESS STEEL ROD TYPE 304 CD

3/16" Diameter type 304 CD stainless steel rod. Used in "new canard" for Long-EZ as specified by RAF.

P/N 03-26600 .....$2.70/ft.

STAINLESS STEEL TUBING

Tubing Type	O.D.	Wall	Part No.	Price/Ft.
304 Welded	3/8"	.028"	03-16100	$6.75
321 Welded	1-1/2"	.035"	03-16300	$20.90
321 Welded	1- 3/4"	.035"	03-16400	$22.93
321 Welded	2"	.035"	03-16500	$24.85
304 Seamless	1/8	.020"	03-00148	$11.78
304 Seamless	1/8"	.035"	03-16010	$3.95
304 Seamless	3/16"	.035"	03-16020	$4.97
304 Seamless	1/4"	.035"	03-16030	$2.95
304 Seamless	5/16"	.035"	03-16040	$5.75
304 Seamless	3/8"	.035"	03-16045	$3.20
304 Seamless	1/2"	.035"	03-16050	$7.97
304 Seamless	5/8"	.035"	03-16060	$5.85
321 Seamless	1-1/4"	.028"	03-16540	$22.50
321 Seamless	1-1/2"	.035"	03-16560	$28.60

BUSHING STOCK 1015/1020 STEEL

Seamless mechanical tubing may be used either statically or dynamically. Its close tolerance, good finish and dense structure make it ideal for parts such as shafts, bushings, bearings, etc. Tensile strength 80,000 PSI. Drill or ream for proper bolt fit.

SPECIFY CUTTING INSTRUCTIONS FOR SHIPMENT

O.D.	I.D.	Wall	Part No.	Price/Ft.
3/8"	1/4"	.065"	03-16700	$2.60
1/2"	3/8"	.065"	03-16900	$1.88
5/8"	1/2"	.065"	03-17100	$1.69

ROUND BRASS SEAMLESS TUBING

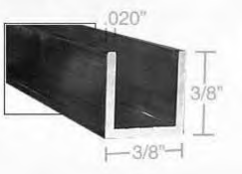
O.D.	I.D	Wall	Part No.	Price / Ft.
1 /4"	3/16"	.032"	03-17300	$4.90
5 /16"	3/16"	.065"	03-17400	$5.60
7 / 16"	5/16"	.065"	03-17600	$8.70
1/ 2"	3/8"	.065"	03-17800	$14.65

4130 ROUND STEEL ROD COLD FINISHED

SPEC. MLL-S-6758A-NORMALIZED

Dia (In.)	Wt./Ft.	Part No.	Price / Ft.
1/8	.042	03-20100	$0.63
3/16	.092	03-20200	$0.89
1/4	.167	03-20300	$1.90
5/16	.261	03-20400	$1.85
3/8	.376	03-20500	$1.26
7/16	.511	03-20600	$2.35
1/2	.668	03-20700	$4.40
9/16	.845	03-20800	$3.35
5/8	1.043	03-20900	$5.35
3/4	1.502	03-21000	$5.35
7/8	2.044	03-21100	$9.50
1	2.670	03-21200	$9.50
1-1/4	4.173	03-21300	$11.63
1-3/8	5.049	03-21400	$22.85
1-1/2	6.008	03-21500	$23.75
1-3/4	8.178	03-21600	$39.85

Ordering tubing/bar by the foot. Add a dash number after part number to indicate length of tubing required. Ex: 3 ft required add -3, 03-00100-3.



3/8" PIPER CHANNEL

Available in mild steel. 0.020" thick.
6-ft. length..... P/N 05-04564.....$8.95

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER.
PLEASE INDICATE AT TIME OF ORDER

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

4130 SHEET

4130 STEEL SHEETS & STRIPS MIL-S-6345A NORMALIZED

This chromium-molybdenum alloy is one of the most widely used aircraft steels because of its combination of weldability, ease of fabrication and mild hardenability. It will respond to heat treatment to high strength levels and yet, in the annealed condition, it has adequate strength for many applications. Used for the manufacture of parts and components. Tensile strength 75,000-85,000 PSI. Furnished cold-rolled and oiled in sheet thicknesses of .025-.125 inch. Sheets of .190-.250 inch and greater thickness are hot-rolled, pickled and oiled. Sheared to sheet and strip sizes listed below. Subject to availability of normalized sheet, annealed 4130 sheet may be substituted.

4130 STEEL SHEET

Thickness (In.)	Price per Piece												
	6" x 12'		9" x 9"		9" x 18"		18" x 18"		18" x 36"		18" x 72"		Wt.**
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	(Lbs.)
.025	03-21800	$1.56	03-21850	$2.85	03-21900	$4.95	03-22000	$11.25	03-22100	$22.75	03-22150	$45.00	2.30
.032	03-22510	$4.75	03-22515	$5.50	03-22520	$10.75	03-22525	$21.25	03-22530	$42.25	03-22535	$83.75	---
.040	03-22600	$3.35	03-22650	$3.77	03-22700	$7.48	03-22800	$14.96	03-22900	$29.93	03-22950	$59.85	3.75
.050	03-23000	$1.97	03-23050	$4.45	03-23100	$8.96	03-23200	$17.50	03-23300	$35.75	03-23350	$69.85	4.80
.063	03-23400	$5.25	03-23450	$6.75	03-23500	$11.75	03-23600	$21.75	03-23700	$42.65	03-23750	$83.75	5.85
.071	03-23800	$6.75	03-23850	$7.75	03-23900	$14.85	03-24000	$29.85	03-24100	$59.60	03-24150	$119.95	6.55
.080	03-24200	$6.25	03-24250	$8.50	03-24300	$14.75	03-24400	$26.75	03-24500	$51.75	03-24550	$103.95	7.15
.090	03-24600	$8.75	03-55500	$9.25	03-24700	$18.25	03-24800	$36.25	03-24900	$72.25	03-24950	$144.95	8.15
.100	03-25000	$7.25	---	---	03-25100	$15.90	03-25200	$32.00	03-25300	$63.75	03-25350	$127.75	10.45
.125	03-55300	$9.95	03-25370	$13.25	03-25400	$22.75	03-25500	$42.50	03-25600	$82.00	---	---	11.25
.190	---	--	03-25660	$16.50	03-25700	$49.75	03-25750	$64.75	03-26025	$168.95	---	---	17.50
.250	---	---	03-25850	$23.75	03-25900	$63.75	03-25950	$98.75	03-26050	$183.75	03-00106	$374.00	94.00

** Wt. per 18" x 18" sheet.

Less 10% discount on 6 sheets 18" x 36" or 3 sheets of 18" x 72" per part number.

4130 STEEL STRIPS

Thickness	Size	Part No.	Price*
.025	5/8" x 72"	03-18000-6	$1.56
.025	1" x 72"	03-18100-6	$2.55
.032	5/8" x 72"	03-18110-6	$2.95
.032	1" x 72"	03-18120-6	$4.75
.032	2" x 72"	03-18130-6	$9.50
.032	3" x 72"	03-18140-6	$14.25
.040	5/8" x 72	03-18200-6	$2.10
.040	1" x 72"	03-18300-6	$3.35
.040	2" x 72"	03-18310-6	$6.64
.040	3" x 72"	03-18320-6	$10.00
.050	1" x 72"	03-18400-6	$4.20
.050	2" x 72"	03-18410-6	$8.75
.050	3" x 72"	03-18420-6	$12.25
.063	5/8" x 72"	03-18500-6	$3.35
.063	3/4" x 72"	03-18600-6	$3.35
.063	1" x 72"	03-18700-6	$5.25
.063	1-1/4" x 72"	03-18800-6	$6.75
.063	1-1/2" x 72"	03-18900-6	$6.75
.063	2" x 72"	03-19000-6	$10.25
.063	3" x 72"	03-19100-6	$13.50
.071	5/8" x 72"	03-19180-6	$4.20
.071	1" x 72"	03-19200-6	$6.75
.071	2" x 72"	03-19210-6	$13.50
.071	3" x 72"	03-19220-6	$19.92
.080	5/8" x 72"	03-19280-6	$4.20
.080	1" x 72"	03-19290-6	$6.25
.080	2" x 72"	03-19300-6	$11.75
.090	1" x 72"	03-19400-6	$8.75
.090	1-1/2" x 72"	03-19500-6	$12.25
.090	2" x 72"	03-19520-6	$17.50
.090	3" x 72"	03-19600-6	$24.25
.100	1" x 72"	03-19610-6	$7.25
.100	1-1/2" x 72"	03-19620-6	$10.75
.100	3" x 72"	03-19630-6	$21.50
.125	1" x 72"	03-19700-6	$9.93
.125	1-1/2" x 72"	03-19800-6	$13.25
.125	2" x 72"	03-19820-6	$19.50
.125	3" x 72"	03-19900-6	$26.00
.250	1-1/4" x 18"	03-20000	$10.95

* 3-Ft. lengths available at the half price of 6' lengths.

6 ft. lengths are subject to UPS oversize charges. Consider 3 ft. lengths which ship at cheaper rates

4130 STEEL SHEET

(As Used in Christavia Kits)

Thickness	Size	Part No.	Price
.040	8" x8"	03-56302	$2.93
.040	12" x 12"	03-56304	$6.64
.040	12" x 20"	03-56316	$11.13
.040	10" x 26'	03-56312	$12.03
.040	12" x 24"	03-56306	$13.35
.040	14" x 30"	03-56308	$19.40
.040	18" x30"	03-56310	$24.90
.040	24" x 24"	03-56314	---
.050	4" x 24"	03-56320	$5.25
.050	12" x 12"	03-56318	$8.00
.050	8" x 24"	03-56322	$10.60
.050	12" x 24"	03-56324	$15.50
.063	10" x 10"	03-56326	$6.75
.063	10" x 14"	03-56332	$8.50
.063	12" x 12"	03-56328	$9.93
.063	12" x 24"	03-56330	$18.50
.071	4" x 4"	03-56334	$1.44
.071	12" x 12"	03-56336	$13.50
.071	12" x 24"	03-56338	$19.93
.080	2" x 10"	03-56354	$2.10
.080	12" x 24"	03-56340	$22.50
.090	2" x 10"	03-56344	$2.25
.090	6" x 8"	03-56342	$10.70
.090	12" x 24"	03-56346	$32.25
.125	10" x 24"	03-56348	$29.25
.125	12" x 24"	03-56350	$35.70

E4340 RECTANGULAR FLAT STEEL

SPEC. MIL-S-5000 ANNEALED

This chromium-nickel-molybdenum alloy, "king" of the hardening grades of alloy steels, possesses much deeper hardenability than the 4100 series. The fatigue-tensile ratio makes it ideal for highly stressed parts such as landing gear legs, and is often referred to as "spring steel". Tensile strength is about 110,000 PSI. It is difficult to weld but can be welded by any of the common welding processes providing the section is preheated and stress relieved after welding.

Size (In.)	Wt./Ft (Lbs.)	Part No.	Price/Ft.
1/4 x 1-1/2	1.275	03-26100	$8.75
1/4 x 2	1.702	03-26150	$12.50
3/8 x 2	2.550	03-26200	$19.65
1/2 x 3	5.100	03-26300	$34.60
1/2 x 4	6.800	03-26400	$39.50

VACUUM MELTED LOW ALLOY 4130 STEEL WELDING WIRE

This high quality welding rod is produced from vacuum melted material. This material has ultra-low levels of oxygen, hydrogen, and nitrogen and is extremely low in trace elements. This rod is cleaner than standard rods and is the best available for 4130 welding. .062 dia. 36" long. Appro. 32 units per pound.

P/N 03-27600 ..... $66.75/lb.

BRASS BRAZING ROD

1/16" ..... P/N 03-27625 ..... $12.50/lb.
3/32" ..... P/N 03-00118 ..... $11.50/lb.

WELDING ROD NO. 7

For big-strength welds in steel plate, sheet, structural shapes, pipe and steel castings. Supplied in 36" lengths in sizes 1/16", 3/32" and 1/8".

NO. 32CMS – Recommended for 4130 steel structures for most satisfactory results. This rod is heat-treatable after welding.

1/16" Dia ..... P/N 03-27000 ..... $9.50/lb.
3/32" Dia ..... P/N 03-27100 ..... $15.85/lb.
1/8" Dia. ..... P/N 03-27200 ..... $9.85/lb.

NO. 7 – Used in general commercial welding and by many mechanics for non-heat-treated airframe repairs.

1/16" Dia ..... P/N 03-27300 ..... $9.50/lb.
3/32" Dia ..... P/N 03-27400 ..... $8.45/lb.
1/8" Dia. ..... P/N 03-27500 ..... $11.75/lb.

WELD BRUSH

Stainless steel bristles set in curved wooden handle. Just right for cleaning welds. 1/2" Wide x 8" Long.

P/N 03-26500 ..... $2.27

For Alumium Welding Rod, see page 56.
For Welding Equipment, see pages 783-785.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER.
PLEASE INDICATE AT TIME OF ORDER

ALUMINUM – THE MOST COMMON GRADES

ME

1100 This grade is commercially pure aluminum. It is soft and ductile and has excellent workability. It is ideal for applications involving intricate forming because it work hardens more slowly than other alloys. It is the most weldable of aluminum alloys, by any method. It is non heat-treatable. It has excellent resistance to corrosion and is widely used in the chemical and food processing industries. It responds well to decorative finishes which make it suitable for giftware.

2011 This is the most free-machining of the common aluminum alloys. It also has excellent mechanical properties. Thus, it is widely used for automatic screw machine products in parts requiring extensive machining.

2014 & 2017 The 2017 alloy combines excellent machinability and high strength with the result that it is one of the most widely used alloys for automatic screw machine work. It is a tough, ductile alloy suitable for heavy-duty structural parts. Its strength is slightly less than that of 2014.

2024 This is one of the best known of the high strength aluminum alloys. With its high strength and excellent fatigue resistance, it is used to advantage on structures and parts where good strength-to-weight ratio is desired. It is readily machined to a high finish. It is readily formed in the annealed condition and may be subsequently heat treated. Arc or gas welding is generally not recommended, although this alloy may be spot, seam or flash welded. Since corrosion resistance is relatively low, 2024 is commonly used with an anodized finish or in clad form ("Alclad") with a thin surface layer of high purity aluminum. Applications: aircraft structural components, aircraft fittings, hardware, truck wheels and parts for the transportation industry.

3003 This is the most widely used of all aluminum alloys. It is essentially commercially pure aluminum with the addition of manganese which increases the strength some 20% over the 1100 grade. Thus, it has all the excellent characteristics of 1100 with higher strength. It has excellent corrosion resistance. It has excellent workability and it may be deep drawn or spun, welded or brazed. It is non heat treatable. Applications: cooking utensils, decorative trim, awnings, siding, storage tanks, chemical equipment.

5005 This alloy is generally considered to be an improved version of 3003. It has the same general mechanical properties as 3003 but appears to stand up better in actual service. It is readily workable. It can be deep drawn or spun, welded or brazed. It has excellent corrosion resistance. It is non heat-treatable. It is well suited for anodizing and has less tendency to streak or discolor. Applications same as 3003.

5052 This is the highest strength alloy of the more common non heat-treatable grades. Fatigue strength is higher than most aluminum alloys.In addition this grade has particularly good resistance to marine atmosphere and salt water corrosion. It has excellent workability. It may be drawn or formed into intricate shapes and its slightly greater strength in the annealed condition minimizes tearing that occurs in 1100 and 3003. Applications: Used in a wide variety of applications from aircraft components to home appliances, marine and transportation industry parts, heavy duty cooking utensils and equipment for bulk processing of food.

5083 & 5086 For many years there has been a need for aluminum sheet and plate alloys that would offer, for high strength welded applications, several distinct benefits over such alloys as 5052 and 6061. Some of the benefits fabricators have been seeking are greater design efficiency, better welding characteristics, good forming properties, excellent resistance to corrosion and the same economy as in other non heat-treatable alloys. Metallurgical research has developed 5083 and 5086 as superior weldable alloys which fill these needs. Both alloys have virtually the same characteristics with 5083 having slightly higher mechanical properties due to the increased manganese content over 5086. Applications: unfired pressure vessels, missile containers, heavy-duty truck and trailer assemblies, boat hulls and superstructures.

6061 This is the least expensive and most versatile of the heat-treatable aluminum alloys. It has most of the good qualities of aluminum. It offers a range of good mechanical properties and good corrosion resistance. It can be fabricated by most of the commonly used techniques. In the annealed condition it has good workability. In the T4 condition fairly severe forming operations may be accomplished. The full T6 properties may be obtained by artificial aging. It is welded by all methods and can be furnace brazed. It is available in the clad form ("Alclad") with a thin surface layer of high purity aluminum to improve both appearance and corrosion resistance. Applications: This grade is used for a wide variety of products and applications from truck bodies and frames to screw machine parts and structural components. 6061 is used where appearance and better corrosion resistance with good strength are required.

6063 This grade is commonly referred to as the architectural alloy. It was developed as an extrusion alloy with relatively high tensile properties, excellent finishing characteristics and a high degree of resistance to corrosion. This alloy is most often found in various interior and exterior architectural applications, such as windows, doors, store fronts and assorted trim items. It is the alloy best suited for anodizing applications - either plain or in a variety of colors.

7075 This is one of the highest strength aluminum alloys available. Its strength-to weight ratio is excellent and it is ideally used for highly stressed parts. It may be formed in the annealed condition and subsequently heat treated. Spot or flash welding can be used, although arc and gas welding are not recommended. It is available in the clad ("Alclad") form to improve the corrosion resistance with the over-all high strength being only moderately affected. Applications: Used where highest strength is needed.

ALUMINUM ALLOY DESIGNATIONS

The aluminum industry uses a four-digit index system for the designation of its wrought aluminum alloys.

As outlined below, the first digit indicates the alloy group according to the major alloying elements.

1XXX SERIES

In this group. minimum aluminum content is 99%. and there is no major alloying element.

The second digit indicates modifications in impurity limits. If the second digit is zero, there is no special control on individual impurities. Digits 1 through 9, which are assigned consecutively as needed, indicate special control of one or more individual impurities.

The last two digits indicate specific minimum aluminum content. Although the absolute minimum aluminum content in this group is 99% the minimum for certain grades is higher than 99%, and the last two digits represent the hundredths of a per cent over 99.

Thus, 1030 would indicate 99.30% minimum aluminum. without special control on individual impurities. The designations 1130, 1230, 1330, etc.. indicate the same purity with special control on one or more impurities. Likewise. 1100 indicates minimum aluminum content of 99.00% with individual impurity control.

2XXX THROUGH 9XXX SERIES

The major alloying elements are indicated by the first digit, as follows:

2xxx	Copper
3xxx	Manganese
4xxx	Silicon
5xxx	Magnesium
6xxx	Magnesium and silicon
7xxx	Zinc
8xxx	Other element
9xxx	Unused series

The second digit indicates alloy modification. If the second digit is zero. it indicates the original alloy: digits 1 through 9, which are assigned consecutively, indicate alloy modifications. The last two digits have no special significance, serving only to identify the different alloys in the group.

EXPERIMENTAL ALLOYS

Experimental alloys are designated according to the four digit system, but they are prefixed by the letter X. The prefix is dropped when the alloy becomes standard. During development, and before they are designated as experimental, new alloys are identified by serial numbers assigned by their originators. Use of the serial number is discontinued when the X number is assigned.

ALUMINUM TEMPER DESIGNATIONS

Temper designations of wrought aluminum alloys consist of suffixes to the numeric alloy designations. For example, in 3003-H14, 3003 denotes the alloy and "H14" denotes the temper, or degree of hardness. The temper designation also reveals the method by which the hardness was obtained. Temper designations differ between non heat-treatable alloys and heat-treatable alloys. and their meanings are given below:

NON HEAT-TREATABLE ALLOYS

The letter "H" is always followed by 2 or 3 digits. The first digit indicates the particular method used to obtain the temper. as follows:

— HI means strain hardened only.

— H2 means strain hardened, then partially annealed.

— H3 means strain hardened, then stabilized.

The temper is indicated by the second digit as follows:

2	1/4 hard
4	I/2 hard
6	3/4 hard
8	full hard
9	extra hard

Added digits indicate modification of standard practice.

HEAT-TREATABLE ALLOYS

-F	As fabricated
-O	Annealed
-T	Heat treated

The letter "T" is always followed by one or more digits. These digits indicate the method used to produce the stable tempers, as follows:

-T3	Solution heat treated, then cold worked.
-T351	Solution heat treated, stress-relieved stretched, then cold worked.
-T36	Solution heat treated, then cold worked (controlled).
-T4	Solution heat treated, then naturally aged.
-T451	Solution heat treated, then stress relieved stretched.
-T5	Artificially aged only.
-T6	Solution heat treated, then artificially aged.
-T61	Solution heat treated (boiling water quench), then artificially aged.
-T651	Solution heat treated, stress-relieved stretched, then artificially aged (precipitation heat treatment).
-T652	Solution heat treated, stress relieved by compression. then artificially aged.
-T7	Solution heat treated, then stabilized.
-T8	Solution heat treated, cold worked, then artificially aged.
-T81	Solution heat treated, cold worked (controlled), then artificially aged.
-T851	Solution heat treated, cold worked, stress-relieved stretched, then artificially aged.
-T9	Solution heat treated, artificially aged, then cold worked.
-T10	Artificially aged, then cold worked.
	Added digits indicate modification of standard practice.

COMPARISON OF MODERN & OLD SYSTEMS OF ALUMINUM ALLOY DESIGNATION

Although the old system of aluminum identification has been obsolete for many years, stock with the old markings is still occasionally found. The following comparison is presented as an aid in identifying such materials in terms of the modern system.

In the old system, alloy composition was indicated by a one- or two-digit number followed by the letter "S" to indicate that it was a wrought alloy, i.e., an alloy that could be shaped by rolling, drawing or forging. Any variation in the basic composition was indicated by a letter preceding the numerical alloy designation. For example, A17S was a modification of the basic alloy 17S. In modern terminology these two alloys are designated 2117S and 2017S, respectively. Temper was designated by a second letter: "O" for soft (annealed), "H"for strain hardness of non heat-treatable alloys, and "T"for hardness of heat-treatable alloys. Degree of hardness of non heat-treatable alloys was indicated by a fraction preceding the letter "H". For example, 3S1/4H would be quarter-hard 3S alloy.

The following Table gives examples of the old and modern designations of some common aluminum alloys.

Modern System	Old System
1100	2S
3003	3S
3003-0	3SO
2014	14S
2017	17S
2117	A17S
2018	18S
2218	B18S
2024T	24ST
5052	52S
7075T6	75ST6

ALUMINUM PLATE & SHEET DATA

ALUMINUM ALLOY CHARACTERISTICS

Alloy		Temper	Gen'l. Availability: Flat Sheet	Coil Sheet	Cut to Length Sheet	Plate	Typical Characteristics*: Corrosion Resistance	Cold Workability	Machinability	Brazability	Weldability: Gas	Arc	Resistance, spot and steam	Specified Mechanical Properties: Tensile Strength - Ksi: Ultimate Minimum	Ultimate Maximum	Yield Minimum	Yield Maximum	Elongation in 2" or 4 times diameter -percent minimum: Sheet	Plate
Non-Heat Treatable Alloys	1100	O	x	x	x	-	A	A	D	A	A	A	B	11	15.5	3.5[1]	-	15-30	-
		H14	X	X	X	-	A	A	C	A	A	A	A	16	21	14[1]	-	3-9	-
		F	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
	3003	O	X	X	X	-	A	A	D	A	A	A	B	14	19	5[1]	-	14-25	-
		H14	X	X	X	-	A	B	C	A	A	A	A	20	26	17[1]	-	1-7	-
		F	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
	5052	O	X	X	X	-	A	A	D	C	A	A	B	25	31	9.5[1]	-	15-20	-
		H32	X	X	X	X	A	B	C	C	A	A	A	31	38	23[1]	-	4-9	11-12
		H34	X	X	X	-	A	B	C	C	A	A	A	34	41	26[1]	-	3-7	-
Heat-Treatable Alloys	Bare 2024	O[3]	X	-	-	X	C	B	D	D	D	C	B	-	32	-	14	12	12
		T3	X	-	-	-	C	C	B	D	D	C	A	63-64	-	42	-	10-15	-
		T351	-	-	-	X	C	C	B	D	D	C	A	56-64	-	40-41	-	-	4-12
		T42[2]	-	-	-	-	C	C	B	D	D	C	A	58-62	-	38	-	12-15	4-12
	Alclad 2024	O[3]	X	X	-	X	A	B	D	D	D	C	B	-	30-32	-	14	10-12	12
		T3	X	-	-	-	A	D	B	D	D	C	A	58-63	-	39-40	-	10-15	-
		T351	-	-	-	X	A	D	B	D	D	C	A	56-63	-	40-41	-	-	4-8
		T42[2]	-	-	-	-	A	D	B	D	D	C	A	55-61	-	34-38	-	10-15	4-12
	6061	O[31]	X	X	-	X	A	A	D	A	A	A	B	-	22	12	12	10-18	16-18
		T4	X	-	-	-	A	C	C	A	A	A	A	30	-	16	-	10-16	-
		T6	X	-	-	-	A	C	C	A	A	A	A	42	-	35	-	4-10	-
		T651	-	-	-	X	A	C	C	A	A	A	A	40-42	-	35	-	-	6-10
		T42[2]	-	-	-	-	A	C	C	A	A	A	A	30	-	14	-	10-16	16-18
	Bare 7075	O[1]	X	-	-	-	C	D	D	D	D	D	B	-	40	-	21	10	-
		T6	X	-	-	-	C	D	B	D	D	D	B	76-77	-	65-66	-	7-8	-
		T651	-	-	-	X	C	D	B	D	D	D	B	67-77	-	53-66	-	-	2-8
	Alclad 7075	O[1]	X	X	-	-	A	B	C	D	D	D	B	-	36-39	-	20-21	9-10	-
		T6	X	-	-	-	A	D	B	D	D	D	B	68-75	-	58-64	-	5-8	-

Ratings A, B, C, D are relative in decreasing order of merit. weldability and brazability ratings are specifically defined as:

A - Generally weldable by all commercial procedures and methods.

B - Weldable with special technique or specific applications which justify preliminary trials or testing to develop welding procedure and weld performance.

C -Limited weldability because of crack sensitivity or loss on resistance to corrosion, and all mechanical properties.

D - No commonly used welding methods have so far been developed.

1 - These yield strengths not determined unless specifically requested.

2 - Although sheet and plate are not sold in this temper, material heat treated from any temper by the user should attain the mechanical properties applicable to this temper.

3 - Annealed (0 temper) material shall, upon heat treatment, be capable of developing the mechanical properties applicable to T 42 temper material.

4 - Annealed (0 temper) material shall, upon heat treatment and aging, be capable of developing the mechanical properties applicable to T 67 temper material.

APPROXIMATE MINIMUM RADII FOR 90° COLD BEND

Where range is shown, use smaller radius with extreme caution.

ALLOY	TEMPER	RADII' For Various Thicknesses Expresses in Terms of Thickness "t": 1/64 Inch	1/32 Inch	1/16 Inch	1/8 Inch	3/16 Inch	1/4 Inch	3/8 Inch	1/2 Inch
	-O	O	O	O	O	O	O	O	1t-2t
	-H12	O	O	O	O	O-1t	O-1t	O-1t	1t-3t
1100	-H14	O	O	O	O	O-1t	O-1t	O-1t	2t-3t
	-H16	O	O	O-1t	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2-1/2t-3-1/2t	3t-4t
	-H18	O-1t	1/2-1-1/2t	1t-2t	1-1/2t-3t	2t-4t	2t-4t	3t-5t	3t-6t
Alclad	-O	O	O	O	O	O-1t	O-1t	1-1/2t-3t	3t-5t
	-T3	1t-2t	1-1/2t-3t	2t-4t	3t-5t	4t-6t	4t-6t	5t-7t	5-1/2t-8t
2014	-T4	1t-2t	1-1/2t-3t	2t-4t	3t-5t	4t-6t	4t-6t	5t-7t	5-1/2t-8t
	-T6	2t-4t	3t-5t	3t-5t	4t-6t	5t-7t	6t-10t	7t-10t	8t-11t
	-O[2]	O	O	O	O	O-1t	O-1t	1-1/2t-3t	3t-5t
	-T3[23]	1-1/2t-3t	2t-4t	3t-5t	4t-6t	4t-6t	5t-7t	6t-8t	6t-9t
2024	-36[2]	2t-4t	3t-5t	4t-6t	5t-7t	5t-7t	6t-10t	7t-10t	8t-11t
	-T42	1-1/2t-3t	2t-4t	3t-5t	4t-6t	4t-6t	5t-7t	6t-8t	6t-9t
	-T81	3-1/2t-5t	4-1/2t-6t	5t-7t	6-1/2t-8t	7t-9t	8t-10t	9t-11t	9t-12t
	-T86	4t-5-1/2t	5t-7t	6t-8t	7t-10t	8t-11t	10t-13t	10t-13t	1t-2t
	-O	O	O	O	O	O	O	O	1t-2t
	-H12	O	O	O	O	O-1t	O-1t	O-1t	1t-3t
3003	-H14	O	O	O	O-1t	O-1t	1/2t-1-1/2t	1t-2-1/2t	1-1/2t-3t
	-H16	0-1t	01t	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2t-4t	1-1/2t-4t	3t-5t
	-H18	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2t-4t	3t-5t	4t-6t	4t-7t	5t-8t
	-O	O	O	O	O	O-1t	O-1t	1/2t-1-1/2t	1t-2t
	-H32	O	O	O	O-1t	O-1t	1/2t-1-1/2t	1t-2t	1-1/2t-2-1/2t
5052	-H34	O	O	O-1t	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2t-3t	2-1/2t-3-1/2t
	-H36	0-1t	1/2t-1-1/2t	1t-2t	1-1/2t--3t	2t-4t	2t-4t	2-1/2t-5t	3t-5-1/2t
	-H38	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2t-4t	3t-5t	4t-6t	4t-7t	5t-8t
	-O	O	O	O	O	O-1t	O-1t	1/2t-2t	1t-1-1/2t
6061	-T4[2]	O-1t	O-1t	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2t-4t	2-1/2t-4t	3t-5t
	-T6[2]	O-1t	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2t-4t	3t-4t	3-1/2t-5-1/2t	4t-6t
7075	-O	O	O	O-1t	1/2t-1-1/2t	1t-2t	1-1/2t-3t	2-1/2t-4t	3t-5t
	-T6[2]	2t-4t	3t-5t	4t-6t	5t-7t	5t-7t	6t10t	7t-11t	7t-12t

1.Minimum permissible radius over which sheet or plate may be bent varies with nature of forming operation. type of forming equipment, and design and conditions of tools. Minimum working radius for a given material or hardest alloy and temper for a given radius can be ascertained only by actual trial under contemplated conditions of fabrication. Where range is shown, use a smaller radius with extreme caution.

2. Alclad sheet can be bent over slightly smaller radii than the corresponding tempers of the uncoated alloy.

3. Immediately after quenching, this alloy can be formed over appreciable smaller radii. 4217661360076962

ALUMINUM – STAINLESS-GALVANIZED SHEET

ALUMINUM SHEET

Aluminum alloy sheet is sold in the thicknesses and sheet sizes shown in the table. Order by part number. No guarantee against scratches is possible due to the handling required to cut sheets to sizes shown.

CUTTING CHARGES: We can cut standard sheet sizes shown in the table to special sizes, but special order cutting charges will apply. Cutting Charges range from $20 to $50 or more depending on sizes desired and number of cuts. Special shapes are not cut, only straight edges. Request quote on Cutting Charges prior to order, as special cut pieces are not returnable.

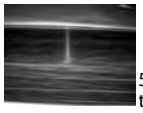
Alloy & Temper	Surface Finish	Thickness (In.)	Wt./ Sq.Ft. (Lbs.)	Price Per Sheet 4′ x 12′ Part No.	4′ x 12′ Price	4′ x 8′ Part No.	4′ x 8′ Price	4′ x 6′ Part No.	4′ x 6′ Price	4′ x 4′ Part No.	4′ x 4′ Price	2′ x 4′ Part No.	2′ x 4′ Price
2024T3	Alclad	.016	.230	03-27710	$108.75	03-27720	$72.86	03-27730	$54.38	03-27740	$35.89	03-27750	$18.49
		.020	.288	03-27810	$120.75	03-27820	$80.90	03-27830	$60.38	03-27840	$39.85	03-27850	$20.53
		.025	.360	03-27910	$132.75	03-27920	$88.94	03-27930	$66.38	03-27940	$43.81	03-27950	$22.57
		.032	.461	03-28010	$169.99	03-28020	$113.89	03-28030	$85.00	03-28040	$56.10	03-28050	$28.90
		.040	.576	03-28110	$203.95	03-28120	$136.65	03-28130	$101.98	03-28140	$67.30	03-28150	$34.67
		.050	.720	03-28210	$221.95	03-28220	$148.71	03-28230	$110.98	03-28240	$73.24	03-28250	$37.73
		.063	.907	03-28310	$269.95	03-28320	$180.87	03-28330	$134.98	03-28340	$89.08	03-28350	$45.89
		.071	1.02	03-28410	$325.00	03-28420	$217.75	03-28430	$162.50	03-28440	$107.25	03-28450	$55.25
		.080	1.15	03-28510	$406.00	03-28520	$271.95	03-28530	$202.95	03-28540	$133.95	03-28550	$68.75
		.090	1.30	03-28610	$456.95	03-28620	$297.95	03-28630	$221.95	03-28640	$145.95	03-28650	$75.25
		.125	1.80	03-28710	$631.00	03-28720	$421.95	03-28730	$314.95	03-28740	$207.95	03-28750	$106.95
		.160	-	03-70010	$962.00	03-70020	$639.00	03-70030	$480.95	03-70040	$316.00	03-70050	$159.95
		.190	2.74	03-28810	$916.00	03-28820	$612.00	03-28830	$457.95	03-28840	$299.75	03-28850	$168.75
	Bare	.250	3.60	03-28910	$1,126.00	03-28920	$753.00	03-28930	$610.00	03-28940	$370.95	03-28950	$190.95
2024-0	Alclad	.032	.461	03-29010	$154.75	03-29020	$102.95	03-29030	$77.00	03-29040	$50.75	03-29050	$26.00
		.040	.576	03-29110	$178.85	03-29120	$119.83	03-29130	$89.43	03-29140	$59.02	03-29150	$30.41
6061T4	Bare	.025	.353	03-29210	$126.95	03-29220	$76.00	03-29230	$56.50	03-29240	$37.25	03-29250	$19.00
		.032	.452	03-29310	$96.75	03-29320	$64.50	03-29330	$48.00	03-29340	$31.50	03-29350	$16.00
		.040	.564	03-29410	$117.00	03-29420	$78.75	03-29430	$58.50	03-29440	$38.50	03-29450	$19.75
		.050	.706	03-29510	$147.75	03-29520	$99.25	03-29530	$74.00	03-29540	$48.75	03-29550	$25.00
		.063	.889	03-29610	$187.75	03-29620	$124.95	03-29630	$93.50	03-29640	$61.50	03-29650	$31.50
		.080	1.13	03-29710	$234.95	03-29720	$156.95	03-29730	$116.95	03-29740	$77.25	03-29750	$39.50
		.125	1.76	03-29810	$369.00	03-29820	$246.95	03-29830	$183.95	03-29840	$120.95	03-29850	$62.25
6061T6	Bare	.016	.228	03-08910	$90.75	03-08920	$59.00	03-08930	$44.50	03-08940	$29.25	03-08950	$15.00
		.020	.285	03-09910	$106.75	03-09920	$70.46	03-09930	$53.38	03-09940	$35.23	03-09950	$18.15
		.025	.353	03-29910	$115.75	03-29920	$77.55	03-29930	$57.88	03-29940	$38.20	03-29950	$19.68
		.032	.452	03-30010	$98.85	03-30020	$65.50	03-30030	$48.75	03-30040	$32.00	03-30050	$16.25
		.040	.570	03-31110	$121.95	03-31120	$81.25	03-31130	$60.50	03-31140	$39.75	03-31150	$19.75
		.050	.713	03-31210	$153.95	03-31220	$99.85	03-31230	$76.50	03-31240	$49.90	03-31250	$25.75
		.063	.889	03-30110	$193.95	03-30120	$128.95	03-30130	$96.50	03-30140	$63.75	03-30150	$32.50
		.090	1.27	03-30210	$269.00	03-30220	$177.95	03-30230	$131.95	03-30240	$87.50	03-30250	$44.75
		.125	1.76	03-30310	$382.95	03-30320	$255.95	03-30330	$190.95	03-30340	$125.95	03-30350	$64.75
		.190		03-10010	$597.00	03-10020	$398.95	03-10030	$298.95	03-10040	$196.95	0310050	$104.95
6061-0	Bare	.020	.282	03-30410	$82.00	03-30420	$54.50	03-30430	$41.00	03-30440	$26.75	03-30450	$13.50
		.040	.564	03-30510	$105.80	03-30520	$70.89	03-30530	$52.90	03-30540	$34.91	03-30550	$17.99
		.063	.889	03-30610	$169.95	03-30620	$112.95	03-30630	$84.50	03-30640	$55.75	03-30650	$28.50
		.080	1.13	03-30710	$212.95	03-30720	$141.95	03-30730	$105.95	03-30740	$70.00	03-30750	$35.75
7075T6	Alclad	.025	.364	03-60010	$149.50	03-60020	$101.95	03-60030	$76.00	03-60040	$50.50	03-60050	$25.75
		.032	.466	03-61010	$175.95	03-61020	$116.95	03-61030	$87.50	03-61040	$58.25	03-61050	$29.50
		.040	.582	03-62010	$207.95	03-62020	$137.95	03-62030	$102.95	03-62040	$68.75	03-62050	$35.00
		.050	.727	03-63010	$259.95	03-63020	$172.95	03-63030	$128.95	03-63040	$86.25	03-63050	$43.75
		.063	.916	03-64010	$326.95	03-64020	$217.95	03-64030	$162.95	03-64040	$107.95	03-64050	$55.25
		.125	1.82	03-65010	$660.00	03-65020	$439.95	03-65030	$329.95	03-65040	$219.95	03-65050	$111.95
7075-0	Alclad	.025	.364	03-66010	$128.95	03-66020	$80.25	03-66030	$60.00	03-66040	$40.00	03-66050	$20.25
		.032	.466	S10	$155.95	03-67020	$103.95	03-67030	$77.50	03-67040	$51.50	03-67050	$26.25
		.040	.582	03-68010	$189.95	03-68020	$125.95	03-68030	$94.50	03-68040	$63.00	03-68050	$32.00
		.063	.916	03-69010	$313.95	03-69020	$209.95	03-69030	$156.95	03-69040	$104.95	03-69050	$53.50

For 2′x2′ piece of aluminum sheet, take 2′x4′ price ÷ 2, and then add 15%. For 2′x2′ piece, change last two digits of P/N to "60". Thicknesses of .016, .020, .025, .032, and .040 can be rolled and boxed for UPS shipment with insurance coverage, but we cannot guarantee rolled sheets will lay flat without creasing when unpacked. Full sheets of heavier gauges or cut sheets exceeding 108" length plus girth (once down and once around) must be shipped by truck. Maximum sheet size for UPS shipment is 2′ x 4′. QUANTITY DISCOUNT SCHEDULE: 10% on 6-10 Full Sheets; 15% on 11-15 Full Sheets. May be assorted thicknesses and alloys. Write for quotation on larger orders. Heavy gauge 2024T4 aluminum plate available in .375, . 500 and .625 thickness. Indicate sheet size required.

3003H-14 SOFT ALUMINUM SHEET

Thick.	P/N #	4′ x 12′	P/N #	4′ x 8′	P/N #	4′ x 6′	P/N #	4′ x 4′
.020	03-31410	$54.50**	03-31420	$43.25	03-31430	$32.25	03-31440	$21.50
.025	03-32410	$65.50	03-32420	$42.75	03-32430	$32.75	03-32440	$21.25
.032	03-33410	$83.75	03-33420	$55.75	03-33430	$41.50	03-33440	$27.25
.040	03-34410	$98.25	03-34420	$64.50	03-34430	$48.75	03-34440	$32.00
.050	03-34510	$125.95	03-34520	$82.75	03-34530	$62.50	03-34540	$41.25
.063	03-34610	$156.95	03-34620	$102.95	03-34630	$78.00	03-34640	$51.50

** Length of full sheet of .025 thickness is 10 ft.
For 2′x4′ pcs. of 3003H-14 use "45" as last 2 digits of P/N (Ex: 03-34645)



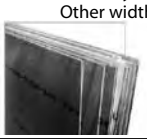
5052H-32 ALUMINUM SHEET FOR FUEL TANKS

5052H32 Aluminum alloy sheets for fabrication of fuel tanks. Available in full sheets (48"x144") & 1/2 sheets (48"x72") only, in .040 & .050 thicknesses. May be combined with other aluminum sheets for discount. See shipping specs above.

.032 Thickness — Full Sheet ..... P/N 03-30810 ..... $77.75
Half Sheet ..... P/N 03-30860 ..... $38.50
.040 Thickness — Full Sheet ..... P/N 03-30900 ..... $99.85
Half Sheet ..... P/N 03-30950 ..... $49.90
.050 Thickness — Full Sheet ..... P/N 03-31000 ..... $125.95
Half Sheet ..... P/N 03-31050 ..... $62.50

016 ALUMINUM LEADING EDGE 2024T3

12" Wide X 12 ft. (rolled for mailing). Sold in 12 ft. lengths only. P/N 03-30800 ..... $39.90 Ea.
18" Wide x 12 ft. (rolled for mailing). Sold in 12 ft. lengths only. P/N 03-30850 ..... $54.50 Ea.
Other widths available at proportionate cost plus shearing charge.



STAINLESS STEEL & GALVANIZED FIREWALL SHEET

Material	Width	Thknes (In.)	Weight/ Lin. Ft.(Lbs)	Part No.	Price/ Lin.Ft.
301 Stainless, 1/2 Hard	36"	.016	2.016	03-31200	$17.70
304 Stainless	48"	.018	2.173	03-20010	$12.25
302/304 Stainless, Ann.*	48"	.035	4.38	03-31300	$24.50
Galvanized Sheet, 26 Ga.	48"	.022	2.718	03-31400	$4.75

* 2B Finish

Material	Size	Weight/Lin. Ft.(Lbs)	Part No.	Price ea.
301 SS 1/2 Hard	3′ x .025"	26	03-00062	$31.75

For 03-00062 Add -1 thru -9 for desired length in feet.

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER.
PLEASE INDICATE AT TIME OF ORDER

ALUMINUM TUBING

ME

ROUND DRAWN ALUMINUM TUBING 2024T3

O.D. (In.)	I.D. (In.)	Wall Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
1/4	.180	.035	.2081	03-31600	$4.45
5/16	.243	.035	.0366	03-31700	$6.75
	.215	.049	.0487	03-31800	$8.98
3/8	.305	.035	.0449	03-32000	$7.90
	.277	.049	.0602	03-32100	$10.60
	.245	.065	.0755	03-32200	$10.25
1/2	.430	.035	.0612	03-32500	$5.60
	.402	.049	.0829	03-32600	$8.00
	.384	.058	.0970	03-32700	$8.65
	.370	.065	.1061	03-32800	$6.85
5/8	.555	.035	.0775	03-32900	$10.95
	.527	.049	.1060	03-33000	$5.75
	.509	.058	.1234	03-33100	$10.55
	.495	.065	.1367	03-33200	$8.25
3/4	.680	.035	.0938	03-33300	$6.55
	.652	.049	.1288	03-33400	$6.75
	.620	.065	.1670	03-33600	$7.39
7/8	.805	.035	.1423	03-33650	$6.43
	.777	.049	.1530	03-33700	$9.60
	.759	.058	.1777	03-33800	$10.50
	.745	.065	.1979	03-33900	$6.94
	.635	.120	.3398	03-34000	$24.95
1	.930	.035	.1250	03-34100	$6.25
	.902	.049	.1754	03-34200	$6.92
	.884	.058	.2028	03-34250	$30.50
	.870	.065	.2295	03-34400	$7.60
	.834	.083	.2866	03-34500	$9.85
1-1/4	1.180	.035	.1601	03-34600	$8.95
	1.152	.049	.2213	03-34700	$8.25
	1.120	.065	.3000	03-00045	$11.90
1-3/8	1.277	.049	.2448	03-34800	$12.25
1-1/2	1.402	.049	.2683	03-34900	$12.00
	1.370	.065	.3519	03-35000	$11.92
1-3/4	1.250	.250	1.428	03-35075	$25.80
2	1.870	.065	.4743	03-35200	$19.93

ROUND ALUMINUM TUBING 6061-0

Only available in 6' or 12' lengths. We can cut to smaller pieces for shipping, but total quantity ordered must equal 6 ft, 12 ft, 18 ft, 24 ft, etc. If manufacturing test reports are required, there is a minimum $15.00 charge per order. Please indicate in the special instructions box at the time of order that certs are required.

O.D. (In.)	I.D. (In.)	Wall Thickness	Wt./Ft. (Lb.)	Part No.	6 ft.	12 ft.
1/2	.430	.035	.0612	03-38500	$10.32	$20.64
3/4	.680	.035	.0920	03-38600	$23.70	$47.40
1	.930	.035	.1250	03-38700	$27.90	$55.80
1-1/4	1.180	.035	.1601	03-38800	$41.82	$83.64

Sold in full 6-ft or 12ft lengths only. No charge for cutting to 8 ft or less for UPS shipment.

6061T6 SQUARE ALUMINUM TUBING

Size (In.)	Wall Thickness	Wt/Ft (Lb.)	Part No.	Price Per Ft.
1/2x1/2	.058	.156	03-00008	$5.75
3/4x3/4	.049	.217	03-00009	$4.47
1 X 1	.065	.300	03-38900	$5.80
2 X 2	.125	1.120	03-00141	$7.75
6061T6511 2 x2	.190	1.420	03-00205	$7.88
6063T52 2 x 2	.125	1.120	03-39000	$5.45

5052-0 ALUMINUM TUBING

Rigid 5052-0 aluminum alloy tubing is used for low and medium pressure hydraulic systems, fuel lines and oil lines. This tubing will withstand a higher pressure than 3003-0 tubing.

O.D. (In.)	I.D. (In.)	Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
1/8	.069	.035	.0101	03-39100	$6.65
3/16	.132	.035	.0168	03-39200	$2.59
1/4	.152	.049	.0371	03-39250	$4.80
	.180	.035	.0281	03-39300	$1.56
5/16	.242	.035	.0360	03-39400	$1.60
3/8	.305	.035	.0449	03-39500	$1.90
	.277	.049	.0602	03-39550	$1.94
1/2	.436	.035	.0612	03-39600	$2.49
	.402	.049	.0829	03-39650	$2.60
5/8	.555	.035	.0760	03-39700	$2.50
	.527	.049	.1060	03-39750	$4.95
3/4	.680	.035	.0938	03-39800	$2.60
	.652	.049	.1288	03-39850	$3.60
1	.930	.035	.1256	03-39900	$4.70
	.902	.049	.1754	03-39950	$4.98

Sold in full 6-ft. or 12-ft. lengths only. No charge for cutting to 8 ft. or less for UPS shipment.Unlisted sizes of aluminum tubing available in full 12' lengths. No charge for cutting to 8' or less for UPS. Longer lengths shipped via truck. Ordering tubing/bar by the foot. Add a dash number after part number to indicate length of tubing required. Ex: 3 ft required add -3, 03-00100-3.

ROUND ALUMINUM TUBING 6061T6

O.D. (In.)	I.D. (In.)	Wall Thickness	Wt./Ft. (Lb.)	Part No.	Price Per Ft.
3/16	.118	.035	---	03-00012	$4.35
1/4	.180	.035	.0281	03-35300	$1.45
	.152	.049	.036	03-00014	$2.95
5/16	.215	.049	.0423	03-35350	$2.25
	.197	.058	.0561	03-35400	$4.50
3/8	.305	.035	.0449	03-35500	$1.75
	.259	.058	.0694	03-35600	$2.18
	.245	.065	.0755	03-35700	$2.26
	.209	.083	.0895	03-35750	$2.70
7/16	.308	.065	.090	03-35775	$3.75
1/2	.444	.028	.0496	03-35795	$2.35
	.430	.035	.0612	03-35800	$1.50
	.402	.049	.0816	03-35850	$1.99
	.384	.058	.0962	03-35900	$2.85
	.370	.065	.1040	03-35950	$2.83
	.260	.120	.168	03-35975	$4.35
5/8	.555	.035	.0775	03-36000	$2.76
	.527	.049	.1060	03-36010	$2.81
	.509	.058	.1227	03-36050	$3.70
	.495	.065	.1367	03-36100	$3.45
3/4	.680	.035	.093	03-36150	$2.20
	.652	.049	.1288	03-36200	$2.85
	.634	.058	.1506	03-36300	$2.70
	.620	.065	.164	03-36350	$2.99
7/8	.805	.035	.109	03-36375	$3.20
	.777	.049	.150	03-36380	$5.25
	.759	.058	.1777	03-36400	$4.70
	.745	.065	.1983	03-36450	$4.40
	.635	.120	.3350	03-36500	$6.75
1	.930	.035	.1275	03-36600	$2.74
	.902	.049	.1754	03-36610	$3.60
	.884	.058	.2060	03-36700	$3.25
	.870	.065	.2295	03-36800	$3.35
	.830	.083	.281	03-36850	$4.45
	.810	.095	.3244	03-36900	$6.25
	.750	.125	.404	03-36950	$5.88
	.500	.250	.693	03-36975	$4.35
1-1/8	1.027	.049	.185	03-36980	$5.50
	1.009	.058	.2321	03-37000	$3.80
	.875	.125	.4712	03-37100	$9.98
1-1/4	1.180	.035	.1601	03-37200	$4.20
	1.152	.049	.2213	03-37210	$5.35
	1.134	.058	.2601	03-37300	$4.40
	1.120	.065	.2907	03-37400	$4.60
	1.010	.120	.510	03-37450*	$6.90
1-3/8	1.259	.058	.2865	03-37500	$4.99
1-1/2	1.430	.035	.1928	03-37550	$4.25
	1.402	.049	.2683	03-37610	$6.44
	1.384	.058	.3137	03-37710	$9.75
	1.370	.065	.3519	03-37800	$4.95
	1.260	.125	.635	03-37850	$9.95
1-5/8	1.509	.058	.3409	03-37900	$5.50
1-3/4	1.680	.035	.2264	03-37910	$5.90
	1.652	.049	.3142	03-37925	$13.50
	1.634	.058	.3703	03-37950	$9.80
	1.584	.083	.5202	03-37975	$9.45
1-7/8	1.759	.058	.3954	03-38000	$6.75
2	1.902	.049	.3601	03-38100	$6.50
	1.884	.058	.4225	03-38200	$6.95
	1.870	.065	.4743	03-38300	$7.50
2-1/4	2.152	.049	.406	03-38307	$11.65
	2.120	.065	.5328	03-38308	$9.75
	1.959	.083	.824	03-38309	$32.50
	2.000	.125	.999	03-38310	$7.96
2-1/2	2.430	.035	.3254	03-38315	$11.60
	2.402	.049	.444	03-38318	$8.50
	2.370	.065	.5803	03-38320	$8.90
3	2.930	.035	.3891	03-38330	$18.60
	2.870	.065	.7140	03-38340	$16.80
4	3.930	.035	.5205	03-38350	$42.75
	3.902	.049	.7153	03-38360	$39.80

* This item will be supplied as either .120 or .125.

3003-0 VERSATUBE

Soft aluminum tubing for instrument air and vacuum lines, fuel and oil lines, and primer lines.

*Safety factor of 2
20% discount for full 50' coils of Versatube

O.D. (In.)	Wall Thickness	Max. Working Pressure* (PSI)	Part No.	Price Per Ft.
1/8	.025	1820	03-40200	$0.36
3/16	.028	880	03-40300	$0.43
1/4	.032	795	03-40400	$0.47
5/16	.035	630	03-40500	$0.68
3/8	.035	520	03-40600	$0.76
1/2	.035	390	03-40700	$0.88
5/8	.035	305	03-40800	$1.15

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER. PLEASE INDICATE AT TIME OF ORDER

ALUMINUM ROD – BAR – ANGLE

ROUND ALUMINUM ROD 2024T3/2024T4

Dia. (In.)	Wt./Ft. (Lb.)	Part No.	Price/Ft
1/8	.015	03-41300	$0.97
3/16	.033	03-41400	$0.89
1/4	.059	03-41500	$0.62
5/16	.092	03-41600	$1.06
3/8	.132	03-41700	$1.20
7/16	.1822	03-41750	$1.66
1/2	.235	03-41800	$2.28
5/8	.368	03-41900	$3.40
3/4	.529	03-42000	$3.60
7/8	.721	03-42100	$5.50
1	.941	03-42200	$5.90
1-1/8	1.205	03-42250	$7.96
1-1/4	1.47	03-42300	$9.50
1-3/8	1.800	03-42350	$10.50
1-1/2	2.12	03-42400	$16.70
2	3.76	03-42500	$20.75
2-1/2	5.88	03-42600	$31.80

No charge for cutting to 8 ft. or less for UPS shipment.
Over 8 ft. shipped via truck. Special sizes available (12 foot minimum)
If ordering only T3 or T4, please call 877-477-7823

ALUMINUM SQUARE & RECTANGLE BAR 2024T3/2024T4

Size (In.)	Wt./Ft. (Lb.)	Part No.	Price/Ft.
1/8 x 1	.150	03-42700	$1.85
1/8 x 1-1/4	.187	03-42750	$5.50
1/8 x 1-1/2	.225	03-42800	$2.80
1/8 x 2	.300	03-42900	$3.50
3/16 x 3/4	.169	03-43100	$6.97
3/16 x 1-1/4	.281	03-43200	$21.60
3/16 x 1-1/2	.3420	03-43250	$6.85
1/4 x 1/2	.147	03-00104	$1.65
1/4 x 3/4	.150	03-00199	$2.55
1/4 x 1	.300	03-43400	$3.35
1/4 x 1-1/4	.375	03-43500	$3.95
1/4 x 1-1/2	.450	03-43600	$4.70
1/4 x 2	.599	03-43700	$6.50
1/4 x 3	.900	03-43800	$9.80
1/4 x4	1.99	03-43850	$10.95
3/8 x 1	.4545	03-43875	$4.35
3/8 x 1-1/4	.562	03-43900	$16.25
3/8 x 1-1/2	.6818	03-43950	$7.55
3/8 x 2	.674	03-44000	$8.50
3/8 x 3	1.35	03-44100	$11.95
3/8 x 6	2.7	03-44200	$49.50
1/2 x 1/2	.3030	03-44250	$3.55
1/2 x 5/8	.375	03-44300	$15.75
1/2 x 1	.599	03-44400	$4.95
1/2 x 1-1/4	.7575	03-44450	$7.35
1/2 x 2	1.20	03-44500	$10.50
1/2 x 2-1/2	1.50	03-44600	$11.50
5/8 x 5/8	.468	03-44700	$4.35
5/8 x 1	.7575	03-44850	$7.50
3/4 x 3/4	.674	03-44900	$6.85
3/4 x 1-1/2	1.35	03-45000	$10.65
3/4 x 1-3/4	1.59	03-45550	$26.65
3/4 x 2	1.80	03-45100	$21.60
3/4 x 2-1/2	2.25	03-45200	$15.65
1 x 1	1.20	03-45300	$7.50
1 x 2	2.424	03-45450	$16.50
1 x 2-1/2	3.030	03-45475	$27.60
1/2 x 6	4.002	03-56000	$35.50

Unlisted sizes of aluminum rod and bar available in full 12 ft. lengths.
No charge for cutting to 8 ft. or less for UPS. Longer lengths shipped via truck.
If ordering only T3 or T4, please call 877-477-7823
Ordering tubing/bar by the foot. Add a dash number after part no. to indicate length of tubing req.
Example: 3 ft required add -3, 03-00100-3.

ALUMINUM ANGLE

Extruded aluminum angle is produced by forcing a heated aluminum billet through a die of the proper shape by means of a hydraulic press. Our 90° aluminum extrusions have fillet radius as illustrated.

Type	Size (In.) Wt./Ft. "A" x "B" x "T"	Part No.	Wt. Per Ft. (Lb.)	Price Per Ft
2024T3	1/2 x 1/2 x 1/16	03-46800	.070	$3.55
2024T3	5/8 x 5/8 x 1/16	03-46900	.095	$4.90
2024T3	3/4 x 3/4 x 1/16	03-47000	.109	$2.95
2024T3	7/8 x 7/8 x 1/8	03-47100	.238	$9.75
2024T3	1 x 1 x 1/16	03-47200	.154	$3.75
2024T3	1 x 1 x 1/8	03-47300	.282	$4.35
2024T3	1 x 1-1/2 x 1/8	03-47400	.354	$7.65
2024T3	1-1/2 x 1-1/2 x 1/16	03-47500	.229	$6.95
2024T3	1-1/2 x 1-1/2 x 1/8	03-47600	.432	$7.50
2024T3	2 x 2 x 1/8	03-47625	.581	$9.90
2024T3	3-1/2 x 3-1/2 x 1/4	03-47675	2.050	$92.75

Type	Size (In.) Wt./Ft. "A" x "B" x "T"	Part No.	Wt. Per Ft. (Lb.)	Price Per Ft
6061T6	3/4 x 3/4 x 1/16	03-00185	.106	$2.46
6061T6	3/4 x 3/4 x 1/8	03-47900	.200	$0.92
6061T6	1 x 1 x 1/16	03-00187	.150	$3.65
6061T6	1 x 1 x 1/8	03-48000	.270	$1.35
6061T6	1 x 3 x 1/8	03-48050	.581	$21.60
6061T6	1-1/4 x 1-1/4 x 1/8	03-00189	.350	$5.35
6061T6	1-1/2 x 1-1/4 x 1/8	03-48075	.390	$19.80
6061T6	1-1/2 x 1-1/2 x 1/8	03-48100	.430	$1.75
6061T6	1-1/2 x 1-1/2 x 3/16	03-48200	.625	$2.45
6061T6	1-1/2 x 1-1/2 x 1/4	03-48250	.831	$3.55
6061T6	1-1/2 x 2 x 1/8	03-48300	.506	$1.86
6061T6	1-3/4 x 1-3/4 x 1/8	03-48350	.490	$5.35
6061T6	2 x 2 x 1/8	03-48400	.470	$2.36
6061T6	2 x 2 x 3/16	03-48450	.850	$3.35
6061T6	2 x 2 x 1/4	03-48500	1.110	$4.40
6061T6	2 x 3 x 1/4	03-48550	1.400	$8.50
6061T6	2 x 2-1/2 x 1/4	03-48600	1.250	$8.80
6061T6	2-1/2 x 2-1/2 x 3/16	03-00007	.970	$7.49
6061T6	2-1/2 x 2-1/2 x 1/8	03-48650	.720	$2.85
6061T6	4 x 4 x 1/4	03-48680	2.28	$8.50

Standard lengths: 2024-12' and 20', 6061-25', 6063-16' (no fillet). No charge for cutting to 8 ft. or less for UPS. Many unlisted sizes available. Request quotation.

ALUMINUM ROUND, SQUARE AND RECTANGLE BARS, 6061T6

Size (In.)	Wt./Ft. (Lb.)	Part No.	Price/Ft.
3/16 Dia. Round	.032	03-45500	$0.98
1/4	.058	03-45600	$0.23
5/16	.090	03-45700	$0.82
3/8	.130	03-45800	$0.85
1/2	.231	03-45900	$0.86
5/8	.359	03-45920	$2.19
3/4	.519	03-46000	$2.02
7/8	.787	03-46010	$2.80
1	.923	03-46100	$5.95
1-1/4	1.436	03-45940	$4.93
1-1/2	2.068	03-45960	$7.50
1-5/8	2.44	03-46200	$8.90
1/4 x 1 Rect.	.294	03-46300	$1.37
3/4 x 3/4 Sq.	.660	03-46400	$4.50
3/16" x 1-1/4"	.275	03-46250	$1.29
1/4" x 1-1/2"	.441	03-46350	$1.89
1/4" x 2"	.675	03-00005	$2.29
1/4" x 3"	.881	03-46360	$3.35
1/2" x 3/4"	.441	03-46370	$1.72
1/2" x 1"	.587	03-46375	$4.70
1/2" x 1-1/4"	.734	03-46380	$3.75
1/2" x 2"	1.170	03-46390	$4.85
1" x 1"	1.170	03-46450	$8.50
1" x 1-1/4"	1.270	03-00006	$5.80
1" x 2-1/2"	1.790	03-00142	$22.70

IF MFG TEST REPORTS ARE REQUIRED THERE IS A $15.00 CHARGE PER ORDER. PLEASE INDICATE AT TIME OF ORDER

PIANO HINGE

MS20257P (supercedes AN257) hinge consists of two aluminum half hinges which mate and are held together by a hinge pin. Anodized finish. MS20257C is similar to MS20257P except made in stainless steel.

MS20001P aluminum hinge is extruded. The closed hinge loops cannot be pulled apart. Furnished with hinge pin. Anodized finish.

Part No.*	Open Width	Thickness	Price/Length	
			3 Ft.*	6 Ft.*
MS20257P1	3/4"	.032"	$4.45	$8.90
MS20257P2	1-1/16"	.040"	$5.90	$11.80
MS20257P3	1-1/4"	.040"	$4.75	$9.50
MS20257P4	1-1/2"	.040"	$4.83	$9.65
MS20257P5	2"	.051"	$6.85	$13.70
MS20001P3	1-1/4"	.040"	$28.88	$57.75
MS20001P4	1-1/2"	.040"	$28.45	$56.90
MS20001P5	1-3/4"	.051"	$31.50	$63.80
MS20001P6	2"	.051"	$30.00	$60.85
MS20257C1	3/4"	.031	$8.50	$17.99
MS20257C2	1-1/16"	.037	$6.95	$15.80
MS20257C3	1-1/4"	.050	$11.90	$23.80
MS20257C4	1-1/2"	.062	$10.25	$20.50
MS20257C5	2"	.062	$16.50	$33.65

* Add "-3" to part number for 3 ft. pc. and "-6" to part number for 6 ft. pc. Example: MS20001P6-3 is 3 ft. pc. of MS20001P6 hinge.

HINGE PIN ONLY – Stainless Steel
089" Dia. x 6'.....P/N 03-49000.....$3.95

BARGAIN BAG OF ALUMINUM TUBING

Approximately 20 ft. Assorted sizes of 2024 and 6061 aluminum tubing, angle, rod, and bar
P/N 03-40100.....$14.95

6063T52 U CHANNEL

3/4"x 3/4"x1/8".....P/N 03-38950.....$3.90/ft.
1"x1"x1/8".....P/N 03-39050.....$2.95/ft.
1-1/4"x1-1/4"x1/8".....P/N 03-39150.....$4.95/ft.

TRAILING EDGE

Fabricated of .025 aluminum 3003H14 to size illustrated. Wt.12oz. per 10ft. length. Shipped via truck. No charge for cutting to 8 ft. or less for UPS shipment.

10 Ft. Length.....P/N 03-48900.....$13.85

Less 20% on 12 or more lengths. Please add $2.00 carton charge for trailing edge - this box insures safe UPS shipment.

RECTANGULAR ALUMINUM STRINGERS

Rectangular stringers, 5/8" x 5/16" x .032" 3003H14 aluminum. Wt. 11 oz./12ft. length. Shipped via truck. No charge for cutting to 8ft. or less for UPS shipment.
12 Ft. Length.....P/N 03-48800.....$6.95

"HAT" SECTION ALUMINUM STRINGERS

Fabricated from .020 2024T3 aluminum. Wt. 5 oz. per 8-ft. length. May be spliced to form longer stringers.
8-Ft. Length.....P/N 03-46500.....$4.65
Less 10% on orders for 12 or more.

2024T3511 2 X 1-3/4 T ALUMINUM

2024T3511 2" X 1-3/4" T extruded aluminum. Price per foot.
P/N 03-00093.....$78.75

WELDING ROD FOR ALUMINUM

ALUMINUM

ER4043 – A versatile alloy well suited for welding 6061T-6, 5005, and 6063. Extremely ductile. 1/16" dia.....P/N 03-27520.....$16.60/lb.
3/32" dia.....P/N 03-27525.....$13.50/lb.

ER5356 – Combination of strength and ductility for welding 5083, 5086, and 7000 series. Deposit can be anodized after welding.
1/16" dia.....P/N 03-27530.....$14.50/lb.

ER347 – Popular aircraft type, stabilized austenitic stainless alloy for welding 302 and 304 base materials. Excellent for welding Ti stabilized grades such as 321 with high strength and elongation.
3/32" dia.....P/N 03-27550.....$19.65/lb.

UTP A-65 – A multi alloy wire for a wide range of base materials including stainless steel, low alloy high strength steel and especially outstanding for dissimilar metals with over 120,000 psi tensile strength and 25% elongation. Machinable. 1/16" dia.....P/N 03-27555.....$55.75/lb.
3/32" dia.....P/N 03-27560.....$39.50/lb.

BRAZING ALLOYS

UTP 1M – High strength, machinable torch rod for steel, brass, bronze and other copper alloys. Easy to apply, high strength, and versatile all purpose brazing rod. 1/8" dia.....P/N 03-27570.....$21.25/lb.

MAINTENANCE

UTP 612 – An all position mild steel coated electrode for arc welding. Operates on AC or DC current and can be welded by even the most inexperienced welder. 72,000 psi tensile strength, moisture resistant and conveniently packaged in 10 lb containers.
3/32" dia.....P/N 03-27575.....$14.60/lb.
1/16" dia.....P/N 03-27580.....$12.85/lb.

For additional Welding Equipment see pages

COPPER TUBING

O.D. (In.)	Wall Thickness	Part No.	Price/Ft.
1/8	.030	03-40900	$1.93
1/4	.030	03-41000	$2.75
5/16	.032	03-41100	$3.15
3/8	.032	03-41200	$3.75
1/2	.032	03-41250	$3.65

Seamless copper tubing for primer, fuel and oil pressure lines.
20% discount for full soft coils of 50 ft. of Copper Tubing.

COPPER BUS BAR

.125 X 1/2" wide
P/N 03-40890.....$3.80/ft.

LEAD SHEET

Lead sheet per specification QQ-L-201, Grade B. 1/8" thick. Wt. 8 lbs./sq.ft.
P/N 03-31500.....$74.75/ft.

Half Sheet (24"x 36", 48 Lbs.)
P/N 03-31520.....$447.95

Full Sheet (36" x48", 96 Lbs.).....
P/N 03-31540.....$897.00

ACRYLIC SHEET

American made acrylic sheet Grade C to Specification LP-391 is unshrunk. When heated to forming temperature of 220-250°F, it will shrink about 2.2% in length and width and will increase about 4% in thickness. When heated to a pliable state it can be drilled, sawed and machined. It has excellent resistance to weathering. It is less than half as heavy as glass and has good impact resistance. .060" or .080" thickness is generally used for side windows and .125" for windshields. Both sides are paper covered for protection. Sheet size: 48"x96". Sold in 2'x2' increments only. Order by part number (see table)

Thickness Inch	Weight Lb./Sq.Ft.	Part No.***	Price Per Sq. Ft.
.060 Clear	.37	03-498—	$2.50
.080 Clear	.49	03-499—	$2.75
.125 Clear	.62	03-500—	$2.80
.125 Tinted*	.77	03-501—	$4.06
.125 Tinted**	.77	03-502—	$4.58

* Smoke tint ** #2111 Green tint

*** Order by basic part number and add last two digits according to dimensions of piece, as follows: 2'x2' (4 Sq.Ft.) add "02"; 2'x4' (8 Sq.Ft.) add "04"; 4'x4'; (16 Sq.Ft.), add "08"; 4'x8' (32 Sq.Ft.), add "10". Example: 2'x4 .080 Clear is P/N 03-49904.

LEXAN

American made Kirex polycarbonate sheet (an equivalent to G.E. Lexan) is a very strong plastic which is guaranteed by manufacturer against breakage when used as a window for a 3 year period. It will scratch like Plexiglas, but will not break. Clear, masked both sides. Sheet size: 48"x96". Sold in 2'x2' increments only. Order by part number (see table)

Thickness Inch	Weight Lb./Sq.Ft.	Part No.*	Price Per Sq. Ft.
.060	.38	03-503—	$2.28
.080	.50	03-504—	$3.15
.093	.59	03-505—	$3.48
.125	.78	03-506—	$3.88

* Order by basic part number and add last two digits according to dimensions of piece, as follows: 2'x2' (4 Sq.Ft.), add "02"; 2'x4' (8 Sq.Ft.) add "04"; 4'x4' (16 Sq.Ft.), add "08"; 4'x8' (32 Sq.Ft.), add "10". Example: 4'x4' of .093 is P/N 03-50508.

CLEAR CELLULOSE ACETATE SHEET

May be used to make inspection rings, grommets and shapes which will adhere to fabric with dope or fabric cement. Sheet size: 20" x 50". Thickness: .030". P/N 03-50700.....$50.50/Sheet

GRAPHLITE CARBON FIER ROD

Prepreg tape has an inherent waviness which can reduce the strength and stiffness of a laminate. Graphlite rod eliminates fiber waviness and unlike tape, it can be placed along any curved surface and retain fiber alignment. Graphlite can be used in layers to form building blocks for stiffeners, spar caps, longerons and other axially loaded parts. Components made with Graphlite offer tension strength on the lower wing surface and compression strength on the upper surface that are almost equal. In addition, a single layer of rods is as thick as 10 layers of tape, meaning fewer passes and less effort. Graphlite rods increase compression strength, reduce fabrication costs by 50%, can be laid on compound curves, and require no special storage. Available in two rod types: standard module (SM) which is 33-34 MSI and intermediate module which is 42 msi. Sold by the roll. Typical light aircraft requires minimum of 1000 ft. Graphlite rod.

Rod Type	Rod Diameter	Tensile Strength	P/N	Price per roll
IM	0.067	503	03-50706	$93.50 /100 ft.
SM	0.125	503	03-50707	$16.85 /12 ft.
SM	0.158	503	03-50708	$153.95 /100 ft.
SM	0.063	785	03-50710	$84.60 /100 ft.

3M™ WINDOW SEALANTS

3M STRIP CAULK - This black, nonhardening compound in 12" strips is the most satisfactory product for sealing windshields and windows. 61 strips per box, more than enough for an average, leakproof windshield installation.

P/N 08578.....$17.95/Box

DOW 730 SOLVENT RESISTANT SEALANT

A one part RTV paste which cures at room temp. to a tough rubbery white solid. Used for bonding, sealing and caulking where resistance to fuels, oils and solvents is required. Excellent on fuel line pipe threads, repairing fuel lines and tanks, bonding components exposed to fuels, oils & solvents. temp. range -85° to 400°F. Stores refrigerated for years. 3 oz. tube..... P/N 09-00383 ..... $96.60

DOW SILASTIC RTV

General-purpose single-component silicone rubber. Adheres to metals, glass, paint, ceramics, most plastics, and wood. Cures to a firm silicone rubber in 24 hours at room temperature. Seals windshield glass, windows, repair worn rubber parts.

#732 RTV (Clear), 4.7 Oz. Tube..... P/N 09-27800 .....$7.95
#732 RTV (White), 4.7 Oz. Tube..... P/N 09-27810 .....$6.95
#732 RTV (White), 10.10 Oz. Tube..... P/N 09-27810 .....$6.95
#732 RTV (Black), 4.7 Oz. Tube.....P/N 09-27815 .....$6.95
#732 RTV (Black), 3 Oz. Tube.....P/N 09-27815 .....$6.95
#736 Red Silicone, 3 Oz. Tube..... P/N 09-27900 .....$11.50

DOW CORNING RTV-3145 ADHESIVE / SEALANT

Sealing openings in modules and housings; adding mechanical stability to individual components; assembly of components on PWBs; sealing in and around wires and electrical leads; yoke assembly.

Clear.....P/N 09-02041 .....$35.75
Gray.....P/N 09-02042 .....$35.50

NYLON

Nylon, a polyimide resin, is a light yet tough thermoplastic material. Its density is approximately . 041 lb./cu.in. It is a tough, resilient material with a low coefficient of frictionabrasion tests show that Nylon loses less material than do many metals, other plastics, and hard rubber. It can deform under load, then return to its original shape. Nylon retains its impact strength over a wide range of temperatures (-60° to 400°F). It has good resistance to most chemicals. It can be easily machined on most standard metal working machines, power hacksaws, band saws, or circular saws. It is desirable to use a saw with a coarse tooth blade.

NYLON PLATE

Thickness (Inch) (Lbs.)	Wt. per Sq. Ft.	Part No.	Price/ Sq. Ft.*
1/16	.39	03-51000	$6.65
1/8	.77	03-51100	$13.75
1/4	1.54	03-51200	$20.85
1/2	3.07	03-51300	$39.50
3/4	4.61	03-51400	$57.75
1	6.15	03-51500	$76.80

* SOLD BY THE SQUARE FOOT (12" X 12")
Smaller pieces are available.
Order as follows:
6" x 6" = 0.25
6" x 12"= 0.50
12" x 12"= 1
12" x 24"= 2
12" x 36"=3

NYLON ROUND ROD

Diameter (In.)	Part No.	Price/ Ft.
1/8	03-51600	$0.46
1/4	03-51700	$0.59
1/2	03-51800	$1.10
3/4	03-51900	$2.75
1	03-52000	$4.45
1-1/4	03-52100	$6.50
1-1/2	03-52200	$8.60
2	03-52300	$15.75

Less 10% for 4 ft. lengths.
Less 20% for full 8 ft. lengths. Furnish cutting instructions for UPS shipment.

HIGH PRESSURE LAMINATED PHENOLIC

Commonly called "Micarta", a trademark of Westinghouse. Laminated sheets, tube and rods are produced in many grades, sizes and colors. These laminates combine a base material - canvas, linen, paper, glass cloth or Nylon cloth, with a resin- phenolic, melamine, epoxy or silicone, under high heat and pressure to produce a new material with specific characteristics. These characteristics vary with the grade and its use.

GRADE L (LINEN BASE) PHENOLIC SHEET

Used for precision machining and high strength applications. Sheet Size: 36" x 48". Sold in 6" x 6", 6" x 12", 12" x 12", etc. pieces only.

Thickness (In.)	Wt. /Sq . Ft(Lbs.)	Part No.	Price. Per Sq. Ft.
1/16	.422	03-52400	$4.80
1/8	. 844	03-52500	$8.95
3/16	1.349	03-00111	$13.45
1/4	1.853	03-52600	$18.60
3/8	2.772	03-52700	$24.75
1/2	3.685	03-52800	$35.65
3/4	5.495	03-52900	$53.75

GRADE L (LINEN BASE) PHENOLIC ROD

Used to provide high-strength close-tolerance bolt holes in wooden spars. Cut rod to spar thickness, drill and ream for proper bolt fit. Drill hole in spar for slip fit of rod, then bond in spar with epoxy cement. Produced in 4 ft. lengths.
5/8" dia..... P/N 03-53100 .....$7.95 /ft.
3/4" dia. ..... P/N 03-53200 .....$9.95 /ft.

GRADE XXX (PAPER BASE) PHENOLIC TUBING

Other sizes and wall thicknesses available at comparable prices .

O.D. (In.)	I.D. (In.)	Wall (In.)	Part No.	Price Per Ft.
3/8	1/4	1/16	03-53300	$12.50
1/2	3/8	1/16	03-53400	$31.00
5/8	1/2	1/16	03-53500	$8.50
3/4	5/8	1/16	03-53600	$13.90
7/8	3/4	1/16	03-53700	$17.50

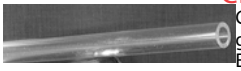
CLEAR EXTRUDED ACRYLIC TUBING

O.D. (In.)	I.D. (In.)	Wall (In.)	Part No.	Price Per Ft.
3/8	1/8	.125	03-53800	$1.25
1/2	1/4	.125	03-53900	$1.67
5/8	3/8	.125	03-54000	$3.35

GLASS EPOXY ROD

G-10 Glass Epoxy Rod - 5/8" Dia.
P/N 03-50900.....$19.95 Ft.
Other sizes available in 4-ft. lengths.

CLEAR PVC PIPE



Clear, rigid Schedule 40 PVC pipe for sight gauges. Used in Quickie as fuel level gauge. Excellent resistance to gasoline. Nominal 1/4" pipe size (0.54" O.D., 0.33" I.D.) . P/N 03-54100..... $1.86 Ft.

WELD-ON ACRYLIC CEMENT

Fast Set - Clear, water thin solvent cement.
P/N 03-00107 .....$22.65

UNMASK

For easy removal of stubborn masking paper from plastic sheets. This worksaver also removes adhesive residue. Quantity Discount - 15% on 10 units on this page
Quart ..... P/N 03-55100 .....$7.85
Gal. ..... P/N 03-55105 .....$23.25

DELRIN® ROD

Delrin® is a thermoplastic acetal resin. The most important attributes of Delrin® are high mechanical strength and rigidity, fatigue endurance and high resistance to moisture, gasoline and solvents. This product contains Delrin® resin. Delrin® is a registered trademark of E. I. du Pont de Nemours & Co. Color: Natural. Sold by the foot.

Diameter	Part No.	Price / Ft.	Diameter	Part No.	Price/Ft.
1/8"	02-52018	$0.52	3/4"	02-52034	$2.47
3/16"	02-52316	$0.72	7/8"	02-52078	$3.70
1/4"	02-52014	$0.50	1"	02-52001	$5.50
5/16"	02-52516	$0.66	1-1/8"	02-52118	$6.50
3/8"	02-52038	$0.80	1-1/4"	02-52114	$6.95
7/16"	02-52716	$1.15	1-3/8"	02-52138	$9.80
1/2"	02-52012	$1.25	1-1/2"	02-52112	$9.80
9/16"	02-52916	$1.80	1-3/4"	02-52134	$13.50
5/8"	02-52058	$1.82	2"'	02-52002	$16.50

ACRYLIC CUTTING TOOL

Cut up to 1/4" thick acrylic by scribing and breaking with this cutting tool. Complete with instructions.
P/N 03-54200 ..... $2.50

ACRYLIC DRILL BITS

5/16" & 7/16" Acrylic Drill Bit.
5/16".....P/N 12-01075.....$8.95
7/16".....P/N 12-01076..... $13.85

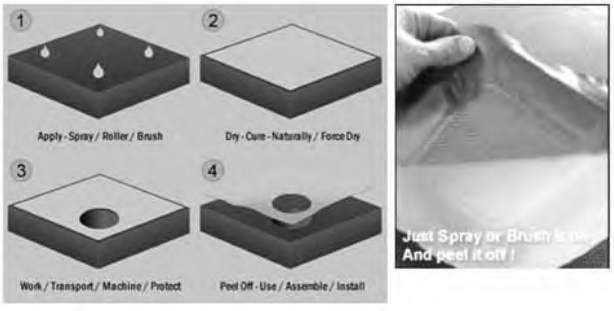
ACRYLIC DRILL BITS

Specially ground point, 60° included tip angle, 0°rake angle, shoulder relieved, for drilling Acrylic to prevent fractures, chipping or cracking. With instructions.

Drill Size	Part No.	Price Ea.
1/8"	03-54300	$3.95
5/32"	03-54400	$4.65
3/16"	03-54500	$5.25
1/4"	03-54600	$6.75

Drill Size	Part No.	Price Ea.
5/16"	03-00114	$9.50
3/8"	03-54700	$12.95
7/16"	03-00115	$14.50
1/2"	03-00116	$17.65

DISCOAT 4220 PLEXIGLASS PROTECTOR



General Chemical's Disccoat 4220 is a CLEAR water resistant; water based peelable temporary protective coating for Aircraft windshields & windows which provides a long lasting durable protective layer tht protects form scratches and oxidation. Used for protecting canopies and windshields during construction. Discoat 4220 air dries quickly, leaving a tough, yet flexible coating that is easily removed and requires no other additional step. 4220 represents the ultimate in water-based removable coating technology. It is stabilized against brittleness and is not softened or penetrated by most water-based compounds.
4220 is impregnated with transparent blue dye for easy visual inspection as well as identification and is non-staining and stable to 100 degrees Celsius. Approximate coverage: 35 sq. ft. per quart. May be applied by spray or brush. Minimum of 4 coats recommended for best results.

Discoat 4220 Plexiglass Protector QT.....P/N 03-00158 ..... $23.75
Discoat 4220 Plexiglass Protector GL .....P/N 03-00159 ..... $95.75

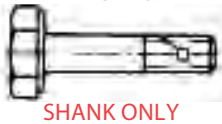
AN BOLTS

Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416, Type II, Class 3. Available with shank drilled for cotter pin or undrilled for stop nut application, and with or without drilled head for safety wire. Specify bolts to have undrilled shank by adding letter "A" after dash number. For bolts with drilled head add letter "H" after AN number. See illustrated examples. The length of AN aircraft bolts is measured from under the head to the end of the shank. The "grip" is the unthreaded portion of the shank. See table for conversion of length and/or grip to proper AN callout.

FOR UNDRILLED ADD THE LETTER "A" EXAMPLE: AN6 - 10A

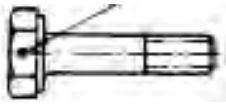
UNDRILLED

FORDRILLEDSHANKNO LETTER EXAMPLE! AN6 - 10



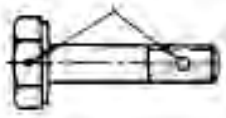
SHANK ONLY DRILLED

FOR DRILLED HEAD ADD "H" AND "A" EXAMPLE: AN6H-10A



HEAD ONLY DRILLED

FORDRILLEDHEADAND SHANK ADD "H" ONLY EXAMPLE: AN6H-10



BOTH HEAD AND SHANK DRILLED

Bolts are sold "EACH" ALL BOLTS		AN3					AN4				
			Cadmium Plated AN3 (10-32)		Stainless AN3C (10-32)			Cadmium Plated AN4 (1/4-28)		Stainless AN4C (1/4-28)	
Dash No.	Nominal Length	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A' Price	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price
-3	15/32	1/16	$0.51	$0.10	$0.82	$0.42	1/16	$0.63	$0.21	$3.25	$0.96
-4	17/32	1/8	$0.47	$0.11	$0.84	$0.48	1/16	$0.53	$0.15	$0.97	$0.49
-5	21/32	1/4	$0.54	$0.11	$1.17	$0.45	3/16	$0.59	$0.18	$1.06	$0.72
-6	25/32	3/8	$0.59	$0.12	$0.98	$0.47	5/16	$0.68	$0.16	$1.23	$0.76
-7	29/32	1/2	$0.49	$0.12	$0.99	$0.65	7/16	$0.70	$0.21	$1.22	$0.72
-10	1-1/32	5/8	$0.62	$0.14	$0.89	$0.59	9/16	$0.69	$0.23	$1.32	$0.89
-11	1-5/32	3/4	$0.66	$0.18	$0.98	$0.72	11/16	$0.68	$0.25	$1.34	$0.77
-12	1-9/32	7/8	$0.65	$0.16	$1.04	$0.76	13/16	$0.74	$0.23	$1.43	$0.94
-13	1-13/32	1	$0.70	$0.19	$0.89	$0.76	15/16	$0.49	$0.28	$1.40	$0.87
-14	1-17/32	1-1/8	$0.58	$0.18	$1.38	$0.85	1-1/16	$0.69	$0.29	$1.28	$0.94
-15	1-21/32	1-1/4	$0.61	$0.28	$1.14	$0.64	1-3/16	$0.51	$0.35	$1.27	$1.11
-16	1-25/32	1-3/8	$0.59	$0.22	-	$0.82	1-5/16	$0.72	$0.38	-	$0.97
-17	1-29/32	1-1/2	$0.87	$0.31	$1.38	$0.89	1-7/16	$0.67	$0.35	$2.90	$0.98
-20	2-1/32	1-5/8	$0.72	$0.35	$4.40	$1.08	1-9/16	$0.74	$0.38	$2.65	$1.10
-21	2-5/32	1-3/4	$0.74	$0.29	-	$0.93	1-11/16	$0.73	$0.40	-	$1.45
-22	2-9/32	1-7/8	$0.67	$0.37	-	$1.14	1-13/16	$0.95	$0.39	-	$1.08
-23	2-13/32	2	$0.75	$0.35	-	$1.40	1-15/16	$0.89	$0.46	-	$1.17
-24	2-17/32	2-1/8	$0.69	$0.38	-	$1.82	2-1/16	$0.86	$0.47	-	$1.38
-25	2-21/32	2-1/4	$0.75	$0.35	-	$1.08	2-3/16	$0.82	$0.35	-	$1.08
-26	2-25/32	2-3/8	$0.83	$0.43	-	$4.35	2-5/16	$0.96	$0.58	-	$2.75
-27	2-29/32	2-1/2	$0.99	$0.48	-	$18.70	2-7/16	$0.97	$0.58	-	$3.75
-30	3-1/32	2-5/8	$0.78	$0.43	-	$1.95	2-9/16	$1.07	$0.74	-	$3.76
-31	3-5/32	2-3/4	$0.63	$0.47	-	-	2-11/16	$1.08	$0.84	-	-
-32	3-9/32	2-7/8	$0.87	$0.59	-	-	2-13/16	$1.14	$0.87	-	-
-33	3-13/32	3	$1.12	$0.64	-	-	2-15/16	$1.18	$0.79	-	-
-34	3-17/32	3-1/8	$1.12	$0.70	-	-	3-1/16	$1.14	$0.98	-	-
-35	3-21/32	3-1/4	$1.05	$1.29	-	-	3-3/16	$1.18	$0.98	-	-
-36	3-25/32	3-3/8	$2.20	$0.73	-	-	3-5/16	$1.58	$0.87	-	-
-37	3-29/32	3-1/2	$1.77	$0.86	-	-	3-7/16	$1.30	$1.16	-	-
-40	4-1/32	3-5/8	$1.16	$0.94	-	-	3-9/16	$1.78	$1.25	-	-
-41	4-5/32	3-3/4	$1.42	$1.18	-	-	3-11/16	$1.72	$0.98	-	-
-42	4-9/32	3-7/8	$1.63	$1.10	-	-	3-13/16	$3.65	$1.31	-	-
-43	4-13/32	4	-	$1.16	-	-	3-15/16	$1.53	$1.44	-	-
-44	4-17/32	4-1/8	$2.50	$1.50	-	-	4-1/16	$1.83	$1.47	-	-
-45	4-21/32	4-1/4	$1.38	$1.49	-	-	4-3/16	$1.87	$1.37	-	-
-46	4-25/32	4-3/8	$1.86	$2.13	-	-	4-5/16	$1.95	$1.47	-	-
-47	4-29/32	4-1/2	$1.58	$1.46	-	-	4-7/16	$1.82	$1.51	-	-
-50	5-1/32	4-5/8	$12.95	-	-	-	4-9/16	$5.50	$2.93	-	-
-51	5-5/32	4-3/4	$10.50	$9.84	-	-	4-11/16	$8.75	$5.75	-	-
-52	5-9/32	4-7/8	-	$8.75	-	-	4-13/16	$9.67	$9.68	-	-
-53	5-13/32	5	-	-	-	-	4-15/16	-	$5.85	-	-
-54	5-17/32	5-1/8	$9.80	$10.94	-	-	5-1/16	-	$9.83	-	-
-55	5-21/32	5-1/4	-	$12.50	-	-	5-3/16	$9.74	$9.75	-	-
-56	5-25/32	5-3/8	$12.25	$11.75	-	-	5-5/16	$8.97	$9.74	-	-
-57	5-29/32	5-1/2	-	$11.95	-	-	5-7/16	$9.95	$9.94	-	-
-60	6-1/32	5-5/8	$11.85	$13.75	-	-	5-9/16	$9.68	$5.35	-	-

Quantity discount on AN4 bolts - 15% discount on qty of 50-99 • 20% discount on qty of 100+

HA

AN BOLTS

AN BOLT GAUGE

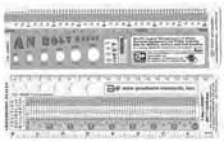
Automatically sizes all AN bolts up to 5/8" diameter and 5 inches long.

P/N 04-05400..... $7.80

AN BOLT LENGTH GAUGES

The APR AN Bolt Length Gauge accurately shows the proper length of the AN Bolt required when original bolt lengths are unknown and helps to choose the proper length for new holes drilled during installations of modifications.

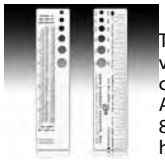
4"..... P/N 11-09128..... $8.50
6"..... P/N 11-09129..... $9.65



APR AN BOLT GAUGE

AN bolt gauge deluxe heavy duty model measures diameter and length of AN bolts up to 8", 388 precision conversions. Fraction / decimal / millimeter equivalents, with 8" Inch and 20 cm metric rulers. 4 colors. Pocket size. PVC plastic 8-5/8" x 2-1/2" x .030"

P/N 11-07726..... $7.75



POCKET SIZE AN BOLT GAUGE

This pocket-size tool is manufactured with high-stress vinyl and is the only AN Bolt Gauge combined with conversion scales and rulers. Accurately measures AN Bolt sizes from 3/16" to ½" in diameter and up to 8" in length. Graphic instructions eliminate errors to help you quickly determine the correct bolt size. The conversion scales list fractions in increments of 1/6" from 0 to 1 inch (64 entries). Parallel to each fraction are the decimal and millimeter equivalents. P/N 13-06716..... $5.95

HA

AN5 BOLTS AND AN6 BOLTS

Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are centerless ground and threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416A, Type II, Class 3.

Bolts are sold "EACH" ALL BOLTS		AN5					AN6				
			Cadmium Plated AN5 (5/16-24)		Stainless AN5C (5/16-24)			Cadmium Plated AN6 (3/8-24)		Stainless AN6C (3/8-24)	
Dash No.	Nominal Length	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price
-4	19/32	1/16	$0.72	$0.39	$6.95	$2.46	1/16	-	$0.45	-	-
-5	23/32	3/16	$0.74	$0.35	$3.80	$2.35	1/16	$0.98	$0.47	$2.45	$3.45
-6	27/32	5/16	$0.64	$0.29	$8.75	$2.46	3/16	$0.99	$0.57	$7.50	$2.70
-7	31/32	7/16	$0.86	$0.31	$4.65	$2.15	5/16	$0.90	$0.46	$13.50	$3.40
-10	1-3/32	9/16	$0.77	$0.33	-	$2.40	7/16	$0.98	$0.56	-	$3.45
-11	1-7/32	11/16	$0.76	$0.38	-	$1.84	9/16	$0.99	$0.59	$7.50	$3.25
-12	1-11/32	13/16	$0.69	$0.43	$6.50	$2.45	11/16	$0.97	$0.56	$10.87	$3.85
-13	1-15/32	15/16	$1.10	$0.57	-	$2.43	13/16	$0.85	$0.61	$12.75	$3.60
-14	1-19/32	1-1/16	$0.90	$0.46	-	$2.38	15/16	$0.75	$0.69	$2.40	$4.20
-15	1-23/32	1-3/16	$0.87	$0.44	-	$3.99	1-1/16	$1.13	$0.84	$16.75	$4.98
-16	1-27/32	1-5/16	$0.96	$0.49	-	-	1-3/16	$1.16	$0.73	$21.25	$2.80
-17	1-31/32	1-7/16	$0.84	$0.46	-	-	1-5/16	$0.94	$0.74	-	$4.45
-20	2-3/32	1-9/16	$0.83	$0.53	-	$7.92	1-7/16	$0.87	$0.71	-	-
-21	2-7/32	1-11/16	$0.98	$0.54	-	$3.60	1-9/16	$0.98	$0.84	-	-
-22	2-11/32	1-13/16	$1.18	$0.75	-	-	1-11/16	$1.42	$0.83	-	-
-23	2-15/32	1-15/16	$0.97	$0.65	-	-	1-13/16	$0.97	$0.84	-	-
-24	2-19/32	2-1/16	$0.98	$0.69	-	-	1-15/16	$1.09	$0.98	-	-
-25	2-23/32	2-3/16	$0.93	$0.78	-	$18.50	2-1/16	$1.12	$1.03	-	-
-26	2-27/32	2-5/16	$0.92	$0.75	-	$13.80	2-3/16	$1.30	$1.17	-	-
-27	2-31/32	2-7/16	$0.98	$0.84	-	$12.75	2-5/16	$1.13	$1.14	-	-
-30	3-3/32	2-9/16	$1.50	$1.04	-	-	2-7/16	$1.37	$1.05	-	-
-31	3-7/32	2-11/16	$1.43	$0.94	-	-	2-9/16	$1.61	$1.43	-	-
-32	3-11/32	2-13/16	$1.47	$1.29	-	-	2-11/16	$1.86	$1.53	-	-
-33	3-15/32	2-15/16	$1.48	$1.08	-	-	2-13/16	$1.99	$1.47	-	-
-34	3-19/32	3-1/16	$1.64	$0.89	-	-	2-15/16	$2.25	$1.70	-	-
-35	3-23/32	3-3/16	$1.80	$1.38	-	-	3-1/16	$2.65	$1.55	-	-
-36	3-27/32	3-5/16	$1.58	$1.66	-	-	3-3/16	$1.99	$1.91	-	-
-37	3-31/32	3-7/16	$2.25	$1.57	-	-	3-5/16	$2.55	$1.59	-	-
-40	4-3/32	3-9/16	$2.15	$1.91	-	-	3-7/16	$2.26	$1.83	-	-
-41	4-7/32	3-11/16	$1.95	$1.68	-	-	3-9/16	$2.40	$2.40	-	-
-42	4-11/32	3-13/16	-	$1.89	-	-	3-11/16	$2.58	$1.94	-	-
-43	4-15/32	3-15/16	$2.40	$2.50	-	-	3-13/16	$3.85	$2.67	-	-
-44	4-19/32	4-1/16	-	$1.75	-	-	3-15/16	$2.80	$2.60	-	-
-45	4-23/32	4-3/16	$1.97	$2.55	-	-	4-1/16	$3.00	$2.80	-	-
-46	4-27/32	4-5/16	$2.15	$2.20			4-3/16	$2.98	$2.90	-	-
-47	4-31/32	4-7/16	$2.50	$2.19	-	-	4-5/16	$3.39	$5.32	-	-
-50	5-3/32	4-9/16	$8.55	$7.50	-	-	4-7/16	$11.62	$10.73	-	-
-51	5-7/32	4-11/16	$9.97	$8.75	-	-	4-9/16	$11.76	$11.38	-	-
-52	5-11/32	4-13/16	$9.98	$10.55	-	-	4-11/16	$12.50	$13.65	-	-
-53	5-15/32	4-15/16	$9.88	$10.99	-	-	4-13/16	$11.90	$11.65	-	-
-54	5-19/32	5-1/16	$8.78	$10.75	-	-	4-15/16	$11.75	$11.63	-	-
-55	5-23/32	5-3/16	$9.75	$9.69	-	-	5-1/16	$11.50	$11.87	-	-
-56	5-27/32	5-5/16	$8.86	$9.93	-	-	5-3/16	$9.97	$10.80	-	-
-57	5-31/32	5-7/16	$12.75	$16.75	-	-	5-5/16	$10.93	$11.75	-	-
-60	6-3/32	5-9/16	$10.75	$9.98	-	-	5-7/16	$11.68	$11.46	-	-

AN BOLTS

USE REFERENCE CHART

Bolt Size	AN960 Flat Washer	AN970 Lg. Area Flat Washer	AN365 Nylon Insert Locknut	AN310 Castle Nut	AN380 Cotter Pin
AN3	-10	-3	-1032	-3	-2-2 or longer
AN4	-416	-4	-428	-4	-25-2 or longer
AN5	-516	-5	-524	-5	-25-3
AN6	-616	-6	-624	-6	-3-3 or longer
AN7	-716	-7	-720	-7	-3-3 or longer
AN8	-816	-8	-820	-8	-3-4 or longer

SAMPLE PART NUMBERS

AN3-4 ..... Cad-plated, drilled shank

AN3-4A ..... Cad-plated, undrilled

AN3C-4 ..... Stainless steel, drilled shank

AN3C-4A ..... Stainless steel, undrilled

TOBACCO BAGS

Cloth bags for holding hardware as it is removed from the aircraft. Set of 25.

P/N 04-05310 ..... $9.50

NOTICE - Aircraft Spruce & Specialty Company is committed to supplying only top quality aircraft grade hardware. We receive our hardware certified to applicable AN, MS, or NAS specifications from our suppliers, on certain items it is necessary for us to accept hardware without certifiable traceability in order to continue supplying that particular part number. These hardware items are designated as "surplus" in the product description.

AN7 AND AN8 BOLTS

Hex head aircraft bolts are made of high-strength type 4037 or 8740 alloy steel (type 8740 is most commonly used). The bolts are centerless ground and threaded after heat treatment. Minimum tensile strength 125,000 PSI. Cadmium plated per specification QQ-P-416A, Type II, Class 3.

Bolts are sold "EACH"		AN7					AN8		
ALL BOLTS			Cadmium Plated AN7 (7/16-20)		Stainless AN7C (7/16-20)			Cadmium Plated AN8 (1/2-20)	
Dash	Nominal No.	Grip Length	Drilled Price	Undrilled "A" Price	Drilled Price	Undrilled "A" Price	Grip Length	Drilled Price	Undrilled "A" Price
-5	23/32	1/16	$1.44	$1.62	-	-	-	-	-
-6	27/32	3/16	$4.99	$9.98	-	-	1/16	$2.45	$2.52
-7	31/32	5/16	--	$1.17	-	-	3/16	$3.98	$1.45
-10	1-3/32	7/16	$2.50	$1.14	-	-	5/16	--	$1.77
-11	1-7/32	9/16	--	$1.38	-	-	7/16	$2.17	$1.52
-12	1/11/32	11/16	$1.79	$1.68	-	-	9/16	$2.75	$1.55
-13	1-15/32	13/16	$2.00	$1.24	-	-	11/16	$3.30	$1.55
-14	1-19/32	15/16	$2.75	$1.22	-	-	13/16	$2.39	$1.93
-15	1-23/32	1-1/16	$2.55	$2.55	-	-	15/16	$2.80	$2.17
-16	1-27/32	1-3/16	$3.30	$1.62	-	-	1-1/16	$3.35	$1.62
-17	1-31/32	1-5/16	$2.34	$1.37	-	-	1-3/16	$3.55	$2.18
-20	2-3/32	1-7/16	$2.20	$1.18	-	-	1-5/16	$2.75	$2.42
-21	2-7/32	1-9/16	$2.20	$1.79	-	-	1-7/16	$2.90	$2.25
-22	2-11/32	1-11/16	$2.40	$1.37	-	-	1-9/16	$5.35	$2.60
-23	2-15/32	1-13/16	$2.50	$2.35	-	-	1-11/16	$3.10	$2.52
-24	2-19/32	1-15/16	$2.60	$2.15	-	-	1-13/16	$3.38	$2.37
-25	2-23/32	2-1/16	$2.85	$1.49	-	-	1-15/16	$3.74	$2.50
-26	2-27/32	2-3/16	$2.75	$2.40	-	-	2-1/16	$3.65	$2.63
-27	2-31/32	2-5/16	$2.55	$1.75	-	-	2-3/16	$2.98	$2.50
-30	3-3/32	2-7/16	--	$2.57	-	-	2-5/16	$4.55	$2.95
-31	3-7/32	2-9/16	$2.90	$2.80	-	-	2-7/16	$4.20	$2.50
-32	3-11/32	2-11/16	$2.90	$2.60	-	-	2-9/16	$3.55	$3.20
-33	3-15/32	2-13/16	$2.39	$2.65	-	-	2-11/16	$4.53	$2.94
-34	3-19/32	2-15/16	$3.15	$2.65	-	-	2-13/16	$3.56	$3.20
-35	3-23/32	3-1/16	$3.50	$2.62	-	-	2-15/16	--	$3.23
-36	3-27/32	3-3/16	$3.10	$2.86	-	-	3-1/16	$2.98	$2.60
-37	3-31/32	3-5/16	$3.85	$2.79	-	-	3-3/16	$4.43	$3.40
-40	4-3/32	3-7/16	$4.36	$3.95	-	-	3-5/16	--	$3.60
-41	4-7/32	3-9/16	--	--	-	-	3-7/16	$3.97	$3.97
-42	4-11/32	3-11/16	$4.21	$4.65	-	-	3-9/16	$4.39	--
-43	4-15/32	3-13/16	$4.85	$4.68	-	-	3-11/16	$4.75	$3.95
-44	4-19/32	3-15/16	$5.40	$4.55	-	-	3-13/16	$4.95	$6.50
-45	4-23/32	4-1/16	$4.95	$4.00	-	-	3-15/16	$5.36	$4.95
-46	4-27/32	4-3/16	$4.55	$4.75	-	-	4-1/16	--	--
-47	4-31/32	4-5/16	$4.93	$4.89	-	-	4-3/16	$7.50	--
-50	5-3/32	4-7/16	$13.78	$14.65	-	-	4-5/16	$17.86	$12.75
-51	5-7/32	4-9/16	--	--	-	-	4-7/16	--	$13.46
-52	5-11/32	4-11/16	$13.95	$13.87	-	-	4-9/16	$16.50	$16.70
-53	5-15/32	4-13/16	--	-	-	-	4-11/16	$12.88	--
-54	5-19/32	4-15/16	-	--	-	-	4-13/16	--	$17.62
-55	5-23/32	5-1/16	--	$13.75	-	-	4-15/16	$16.75	--
-56	5-27/32	5-3/16	--	$14.93	-	-	5-1/16	$12.60	$16.50
-57	5-31/32	5-5/16	--	$13.87	-	-	5-3/16	$13.95	--
-60	6-3/32	5-7/16	$15.75	$13.94	-	-	5-5/16	$14.90	--

DRILLED HEAD, UNDRILLED SHANK

AN3	Ea.
H4A	$0.59
H5A	$0.69
H6A	$0.47
H10A	$0.59
H12A	$0.48
H13A	$0.76
H15A	$0.59

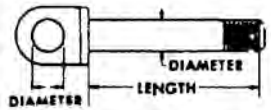
AN4	Ea.
H3A	$0.54
H4A	$0.79
H5A	$0.64
H6A	$0.69
H7A	$0.46
H12A	$0.96
H13A	$0.65
H14A	$0.71
H16A	$0.78
H21A	$0.88
H26A	$2.05
H30A	$0.73
H32A	$1.35

AN5	Ea.
H6A	$0.95
H12A	$0.86
H13A	$1.78
H16A	$1.30
H17A	$1.79
H20A	$2.00
H31A	$3.89
H33A	-------

AN6	Ea.
H11A	$0.93
H16A	-------
H20A	$1.97
H31A	-------
H32A	$4.35
H34A	$2.95
H37A	$3.85
H40A	$4.45
H41A	$4.75
H43A	$5.50
H45A	$3.85
H46A	$5.75
H50A	$12.75

AN8	Ea.
H7A	$4.75

EYE BOLTS



AN42 - AN46 EYE BOLTS

Eye bolts are special purpose bolts to be used where external tension loads are to be applied. The eye is designed for attachment of such devices as a turnbuckle fork, a clevis or a cable shackle. Manufactured and plated in same manner as AN3 - AN8 bolts . Minimum tensile strength 125, 000 PSI . Eye bolts will be furnished with either drilled or undrilled shank subject to stock on hand. Add letter "A" after dash number for undrilled shank.

Nominal Length	AN42B Shank 3/16" Hole 3/16" Thread 10-32					AN43B Shank 1/4" Hole 3/16" Thread 1/4-28				
	Grip Length	Drilled Part No.	Price Each	Undrilled Part No.	Price Each	Grip Length	Drilled Part No.	Price Each	Undrilled Part No.	Price Each
1/2	1/8	AN42B-4	$5.55	AN42B-4A	$4.55	1/16	AN43B-4	$8.50	AN43B-4A	$5.35
5/8	1/4	AN42B-5	$6.65	AN42B-5A	$4.45	3/16	AN43B-5	$8.50	AN43B-5A	$5.35
3/4	3/8	AN42B-6	$5.75	AN42B-6A	$5.35	5/16	AN43B-6	$9.80	AN43B-6A	$5.65
7/8	1/2	AN42B-7	$7.50	AN42B-7A	$5.40	7/16	AN43B-7	$9.50	AN43B-7A	$6.50
1	5/8	AN42B-10	$8.50	AN42B-10A	$5.95	9/16	AN43B-10	$9.50	AN43B-10A	$6.70
1-1/8	3/4	AN42B-11	$7.90	AN42B-11A	$6.50	11/16	AN43B-11	$9.65	AN43B-11A	$7.95
1-1/4	7/8	AN42B-12	$10.50	AN42B-12A	$6.75	13/16	AN43B-12	$10.65	AN43B-12A	$7.90
1-3/8	1	AN42B-13	$9.80	AN42B-13A	$6.65	15/16	AN43B-13	$8.50	AN43B-13A	$7.50
1-1/2	1-1/8	AN42B-14	$8.50	AN42B-14A	$8.50	1-1/16	AN43B-14	$10.50	AN43B-14A	$8.50
1-5/8	1-1/4	AN42B-15	$16.50	AN42B-15A	$8.50	1-3/16	AN43B-15	$10.50	AN43B-15A	$8.90
1-3/4	1-3/8	AN42B-16	$17.50	AN42B-16A	$8.70	1-5/16	AN43B-16	$17.50	AN43B-16A	$8.85
1-7/8	1-1/2	AN42B-17	$25.50	AN42B-17A	$7.99	1-7/16	AN43B-17	$10.75	AN43B-17A	$7.90
2	1-5/8	AN42B-20	$7.75	AN42B-20A	$9.60	1-9/16	AN43B-20	$7.75	AN43B-20A	$9.93
2-1/8	1-3/4	AN42B-21	$9.50	AN42B-21A	$13.60	1-11/16	AN43B-21	$23.50	AN43B-21A	$11.50
2-1/4	1-7/8	AN42B-22	$17.50	AN42B-22A	$6.40	1-13/16	AN43B-22	$10.90	AN43B-22A	$12.75
2-3/8	2	AN42B-23	$10.50	AN42B-23A	$17.75	1-15/16	AN43B-23	$17.60	AN43B-23A	$11.65
2-1/2	2-1/8	AN42B-24	$12.60	AN42B-24A	$9.55	2-1/16	AN43B-24	$9.98	AN43B-24A	$12.50
2-5/8	2-1/4	AN42B-25	$10.50	AN42B-25A	$14.55	2-3/16	AN43B-25	$9.40	AN43B-25A	$10.50
2-3/4	3-3/8	-	-	AN42B-26A	$8.75	2-5/16	AN43B-26	$11.65	AN43B-26A	$11.50
2-7/8	2-1/2	AN42B-27	$24.90	AN42B-27A	$8.50	2-7/16	AN43B-27	$10.40	AN43B-27A	$9.25
3	2-5/8	AN42B-30	$9.25	AN42B-30A	$10.78	2-9/16	AN43B-30	$11.90	AN43B-30A	$13.55

Nominal Length	AN44			AN44A (Undrilled)			0AN450			AN45A (Undrilled)		
	Shank 5/16"	Hole 1/4"	Thread 5/16-24	Shank 5/16"	Hole 1/4"	Thread 5/16-24	0Shank 05/16"0	Hole 5/16"	Thread 5/16-24	Shank 5/16"	Hole 5/16"	Thread 5/16-24
	Grip Length	Drilled P/N	Price Each	Grip Length	Drilled P/N	Price Each	Grip Length	Drilled P/N	Price Each	Grip Length	Drilled P/N	Price Each
	3/16	AN44-5	$9.50	3/16	AN44-5A	$6.85	1/16	AN45-4	$14.70	1/16	AN45-4A	-
7/8	7/16	AN44-7	$9.50	7/16	AN44-7A	$6.75	3/16	AN45-5	$7.75	3/16	AN45-5A	$18.75
1	9/16	AN44-10	$29.70	9/16	AN44-10A	$10.50	5/16	AN45-6	$8.90	5/16	AN45-6A	$8.50
1-1/8	11/16	AN44-11	$10.50	11/16	AN44-11A	$7.28	7/16	AN45-7	$9.90	7/16	AN45-7A	$8.55
1-1/4	13/16	AN44-12	$7.80	13/16	AN44-12A	$14.50	9/16	AN45-10	$11.50	9/16	AN45-10A	$11.75
1-3/8	15/16	AN44-13	$17.50	15/16	AN44-13A	$6.90	13/16	AN45-12	$23.50	13/16	AN45-12A	$9.50
1-1/2	1-1/16	AN44-14	$11.60	1-1/16	AN44-14A	$9.55	15/16	AN45-13	$9.97	15/16	AN45-13A	$41.70
1-5/8	1-3/16	AN44-15	$8.60	1-3/16	AN44-15A	$10.55	1-1/16	AN45-14	$9.90	1-1/16	AN45-14A	$10.50
1-3/4	1-5/16	AN44-16	$41.50	1-5/16	AN44-16A	$10.95	1-3/16	AN45-15	$16.50	1-3/16	AN45-15A	$10.50
1-7/8	1-7/16	AN44-17	$17.63	1-7/16	AN44-17A	$15.50	1-5/16	AN45-16	$12.90	1-5/16	AN45-16A	-
2	1-9/16	AN44-20	$11.50	1-9/16	AN44-20A	$11.80	1-7/16	AN45-17	$13.65	1-7/16	AN45-17A	$11.90
2-1/8	1-11/16	AN44-21	-	1-11/16	AN44-21A	$33.75	1-9/16	AN45-20	$12.75	1-9/16	AN45-20A	$12.50
2-1/4	1-13/16	AN44-22	$11.90	1-13/16	AN44-22A	$12.50	1-11/16	AN45-21	$5.20	1-11/16	AN45-21A	$5.97
2-3/8	1-15/16	AN44-23	-	1-15/16	AN44-23A	-	1-13/16	AN45-22	$12.50	1-13/16	AN45-22A	-
2-1/2	2-1/16	AN44-24	$14.60	2-1/16	AN44-24A	$11.75	1-15/16	AN45-23	$12.75	1-15/16	AN45-23A	-
2-5/8	2-3/16	AN44-25	-	2-3/16	AN44-25A	$11.25	2-1/16	AN45-24	$16.50	2-1/16	AN45-24A	$21.95
2-3/4	2-5/16	AN44-26	$15.50	2-5/16	AN44-26A	$15.50	2-3/16	AN45-25	-	2-3/16	AN45-25A	$17.50
2-7/8	2-7/16	AN44-27	-	2-7/16	AN44-27A	$13.50	2-5/16	AN45-26	$17.65	2-5/16	AN45-26A	-
3	2-9/16	AN44-30	-	2-9/16	AN44-30A	-	2-7/16	AN45-27	$46.50	2-7/16	AN45-27A	$14.75
							2-9/16	AN45-30	$20.20	2-9/16	AN45-30A	-

Nominal Length	AN46			AN46A (Undrilled)		
	Shank 3/8"	Hole 3/8"	Thread 3/8-24	Shank 3/8"	Hole 3/8"	Thread 3/8-24
	Grip Length	Drilled Part No.	Price Each	Grip Length	Drilled Part No.	Price Each
5/8	1/16	AN46-5	$22.50	1/16	AN46-5A	-
3/4	3/16	AN46-6	$21.95	3/16	AN46-6A	-
7/8	5/16	AN46-7	$8.20	5/16	AN46-7A	$14.80
1	7/16	AN46-10	$19.50	7/16	AN46-10A	-
1-1/4	11/16	AN46-12	$10.50	11/16	AN46-12A	-
1-3/8	13/16	AN46-13	$31.90	13/16	AN46-13A	-
1-1/2	15/16	AN46-14	$13.90	15/16	AN46-14A	$19.50
1-5/8	1-1/16	AN46-15	$18.50	1-1/16	AN46-15A	$22.50
1-3/4	1-3/16	AN46-16	$12.65	1-3/16	AN46-16A	-
1-7/8	1-5/16	AN46-17	$21.50	1-5/16	AN46-17A	$16.90
2	1-7/16	AN46-20	$12.65	1-7/16	AN46-20A	$12.50
2-1/8	1-9/16	AN46-21	$15.92	1-9/16	AN46-21A	-
2-1/4	1-11/16	AN46-22	-	1-11/16	AN46-22A	$13.50
2-3/8	1-13/16	AN46-23	-	1-13/16	AN46-23A	$15.95
2-5/8	2-1/16	AN46-25	$15.50	2-1/16	AN46-25A	$13.86
2-3/4	2-3/16	AN46-26	$14.95	2-3/16	AN46-26A	$13.90
2-7/8	2-5/16	AN46-27	$19.75	2-5/16	AN46-27A	-
3	2-7/16	AN46-30	$20.80	2-7/16	AN46-30A	-

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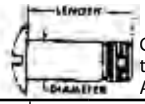
CLEVIS BOLTS



AN23 - AN27 CLEVIS BOLTS

Clevis bolts have a slotted brazier type head. They are special-purpose bolts for use where a large shearing stress occurs (never in tension). Manufactured and cadmium plated in same manner as AN3 - AN8 aircraft bolts. Minimum tensile strength 125,000 PSI. Available with drilled or undrilled shank. Add letter "A" after dash number for undrilled shank. Prices fluctuate on clevis bolts.

Dash No.	AN23				AN24				AN25				AN26				AN27			
	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled	Grip	Length	Drilled	Un-Drilled
8	3/16	17/32	$1.08	$0.38	3/16	17/32	----	$2.73	----	----	----	----	----	----	----	----	----	----	----	----
9	1/4	19/32	$1.16	$0.47	1/4	19/32	$2.86	$2.30	1/4	39/64	$0.60	----	l/4	39/64	----	----	----	----	----	----
10	5/16	21/32	$0.93	$0.44	5/l6	21/32	$0.99	$0.59	5/16	43/64	$8.93	----	5/16	43/64	----	----	----	----	----	----
11	3/8	23/32	$1.14	$0.45	3/8	23/32	$1.21	$0.94	3/8	47/64	$11.67	----	3/8	47/64	----	----	----	----	----	----
12	7/l6	25/32	$0.97	$0.34	7/16	25/32	$1.09	$0.65	7/16	5l/64	----	$0.52	7/16	51/64	$6.80	----	3/8	51/64	----	----
13	1/2	27/32	$0.98	$0.52	1/2	27/32	$0.97	$0.46	1/2	55/64	$8.50	----	1/2	55/64	$12.50	----	7/16	55/64	----	----
14	9/l6	29/32	$1.38	$0.46	9/16	29/32	$1.24	$1.48	9/16	59/64	$5.50	$5.50	9/16	59/64	$6.75	----	1/2	59/64	----	----
15	5/8	31/32	$0.99	$0.59	5/8	31/32	$1.14	$3.80	5/8	63/64	$6.34	----	5/8	63/64	----	----	9/16	63/64	----	----
16	11/16	1-1/32	$0.97	$0.46	11/16	1-1/32	$1.14	$1.32	11/16	1-3/64	----	----	11/16	1-3/64	$7.50	----	5/8	1-3/64	----	----
l7	3/4	1-3/32	$0.99	$0.47	3/4	1-3/32	$1.15	$1.89	3/4	1-7/64	$9.50	----	3/4	1-7/64	----	----	11/16	1-7/64	----	----
l8	13/16	1-5/32	$0.72	$0.65	13/16	1-5/32	$1.43	$0.49	13/16	1-11/64	$5.40	----	13/16	1-11/64	$6.95	----	3/4	1-11/64	----	----
l9	7/8	1-7/32	$0.98	$0.76	7/8	1-7/32	$2.10	$1.35	7/8	1-15/64	$4.60	----	7/8	1-15/64	----	----	13/16	1-15/64	----	----
20	15/16	1-9/32	$0.94	$1.59	15/16	1-9/32	$1.25	$1.10	15/16	1-19/64	----	----	15/16	1-19/64	$9.64	$7.25	7/8	1-19/64	----	----
21	1	1-11/32	$1.80	$0.80	1	1-11/32	$1.93	$4.60	1	1-23/64	$7.25	----	1	1-23/64	$3.45	----	15/16	1-23/64	----	----
22	1-1/16	1-13/32	$1.21	$0.40	1-1/16	1-13/32	$3.40	$0.85	1-1/16	1-27/64	$5.40	$7.90	1-1/16	1-27/64	$9.25	----	1	1-27/64	----	----
23	1-1/8	1-15/32	$2.45	$0.74	1-1/8	1-15/32	$4.35	$1.10	1-1/8	1-31/64	----	----	1-1/8	1-31/64	$6.34	----	1-1/16	1-31/64	----	----
24	1-3/16	1-17/32	$1.80	$3.40	1-3/16	1-17/32	$2.38	$1.40	1-3/16	1-35/64	$6.95	----	1-3/16	1-35/64	----	----	1-1/8	1-35/64	----	----
25	1-1/4	1-19/32	$2.40	$4.50	1-1/4	1-19/32	----	----	1-1/4	1-39/64	----	----	1-1/4	1-39/64	----	----	1-3/16	1-39/64	----	----
26	1-5/16	1-21/32	$2.45	---	1-5/16	1-21/32	$1.46	$2.80	1-5/16	1-43/64	----	----	1-5/16	1-43/64	$11.73	----	1-1/4	1-43/64	----	----
27	1-3/8	1-23/32	$6.25	$0.53	1-3/8	1-23/32	$6.60	$5.40	1-3/8	1-47/64	----	----	1-3/8	1-47/64	----	----	1-5/16	1-47/64	----	----
28	1-7/16	1-25/32	$5.50	$3.90	1-7/16	1-25/32	----	$2.80	1-7/16	1-51/64	----	----	1-7/16	1-51/64	----	----	1-3/8	1-51/64	----	----
29	1-1/2	1-27/32	$4.85	$2.55	1-1/2	1-27/32	$7.70	----	1-1/2	1-55/64	$10.50	----	1-1/2	1-55/64	----	----	1-7/16	1-55/64	----	----
30	1-9/16	1-29/32	$0.47	$1.16	1-9/16	1-29/32	----	----	1-9/16	1-59/64	----	----	1-9/16	1-59/64	----	----	1-1/2	1-59/64	----	----
31	1-5/8	1-31/32	----	$3.30	1-5/8	1-31/32	$3.40	$1.36	1-5/8	1-63/64	$13.75	----	1-5/8	1-63/64	----	----	1-9/16	1-63/64	----	----
32	1-11/16	2-1/32	$0.49	$2.45	1-11/16	2-1/32	$6.50	$9.38	1-11/16	2-3/64	$6.93	----	1-11/16	2-3/64	----	----	1-5/8	2-3/64	----	----
34	1-13/16	2-5/32	$6.50	$5.50	1-13/16	2-5/32	$4.45	$3.95	1-13/16	2-11/64	-----	----	1-13/16	2-11/64	----	----	1-3/4	2-11/64	----	----
36	1-15/16	2-9/32	----	----	1-15/16	2-9/32	$4.45	$5.70	1-15/16	2-19/64	----	----	1-15/16	2-19/64	----	----	1-7/8	2-19/64	----	----
38	2-1/16	2-13/32	$12.95	$4.99	2-1/16	2-13/32	$1.93	----	2-1/16	2-27/64	$16.70	----	2-1/16	2-27/64	$13.50	----	2	2-27/64	----	----
40	2-3/16	2-17/32	$1.18	$6.84	2-3/16	2-17/32	----	$4.80	2-3/16	2-35/64	----	----	2-3/16	2-35/64	----	----	2-1/8	2-35/64	----	----

AN173, AN174, & AN175 CLOSE TOLERANCE BOLTS

Note: All AN173-AN175 bolts are drilled shank.
Non-corrosion-resistant cadmium-plated steel machine bolts. Manufactured to Revision 20 (April, 1990) of the military specification.

Cat. #	Dia. (inches)	Threads/ inch	Length (inches)	Grip (inches)	Price
AN173-5	.1900	32 NF-3A	.656	.250	$0.72
AN173-6			.781	.375	$0.89
AN173-7A			.906	.500	$0.68
AN173-7			.906	.500	$0.89
AN173-10			1.031	.625	$0.96
AN173-11			1.156	.750	$0.76
AN173-12			1.281	.875	$1.49
AN173-13			1.406	1.000	$0.98
AN173-14			1.531	1.125	$0.87
AN173-15			1.656	1.250	$1.14
AN173-16			1.781	1.375	$1.19
AN174-3	.2500	28 UNF-3A	.469	.062	------
AN174-4			.531	.062	------
AN174-5			.656	.188	$1.25
AN174-6			.781	.312	$0.89
AN174-7			.906	.438	$1.31
AN174-10			1.031	.562	$0.93
AN174-11			1.156	.688	$0.98
AN174-12			1.281	.812	$1.10
AN174-13			1.406	.938	$0.98
AN174-14			1.531	1.062	$1.38
AN174-15			1.656	1.188	$1.18

Cat. #	Dia. (inches)	Threads/inch	Length (inches)	Grip (inches)	Price
AN174-16	.2500	28 UNF-3A	1.781	1.312	------
AN174-17			1.906	1.438	$1.08
AN174-20			2.031	1.562	$1.14
AN174-21			2.156	1.688	------
AN174-23			2.406	1.938	$3.95
AN174-24			2.531	2.062	------
AN175-14	.3125	24 UNF-3A	1.594	1.062	------
AN175-15			1.719	1.188	$1.26
AN175-16			1.844	1.312	$2.88
AN175-17			1.969	1.438	$2.92
AN175-20			2.094	1.562	$4.60
AN175-21			2.219	1.688	$8.75
AN175-22			2.344	1.812	$2.65
AN175-23			2.469	1.938	------
AN175-24			2.594	2.062	------
AN175-25			2.719	2.188	------
AN175-26			2.844	2.312	------
AN175-27			2.969	2.438	------
AN175-30			3.094	2.562	------
AN175-31			3.219	2.688	------
AN175-32			3.344	2.812	$2.40
AN175-33			3.469	2.938	$2.95

NAS SHEAR BOLTS

These bolts supercede NAS1103–NAS1106 high strength bolts. Made from alloy steel with a CAD II finish.

Part numbers with "D" are for shank drilled. All others are undrilled bolts.

HA

Part Number	Thread	Grip Length	Length	Price
NAS6203-10	10-32	0.625	0.948	$0.22
NAS6203-10D	10-32	0.625	0.948	$0.98
NAS6203-11	10-32	0.688	1.011	$0.58
NAS6203-11D	10-32	0.688	1.011	$1.07
NAS6203-12	10-32	0.750	1.073	$0.28
NAS6203-12D	10-32	0.750	1.073	$0.96
NAS6203-13	10-32	0.813	1.136	$0.97
NAS6203-13D	10-32	0.813	1.136	$1.06
NAS6203-14	10-32	0.875	1.198	$0.36
NAS6203-14D	10-32	0.875	1.198	$1.21
NAS6203-15	10-32	0.938	1.261	$0.39
NAS6203-15D	10-32	0.938	1.261	$1.08
NAS6203-16	10-32	1.000	1.323	$0.42
NAS6203-16D	10-32	1.000	1.323	$1.12
NAS6203-17	10-32	1.063	1.386	$0.59
NAS6203-17D	10-32	1.063	1.386	$1.59
NAS6203-18	10-32	1.125	1.448	$0.62
NAS6203-18D	10-32	1.125	1.448	$1.36
NAS6203-19	10-32	1.188	1.511	$0.62
NAS6203-19D	10-32	1.188	1.511	$1.62
NAS6203-2	10-32	0.125	0.448	$0.19
NAS6203-20	10-32	1.250	1.573	$0.64
NAS6203-20D	10-32	1.250	1.573	$1.12
NAS6203-21	10-32	1.313	1.636	$0.65
NAS6203-21D	10-32	1.313	1.636	$1.67
NAS6203-22	10-32	1.375	1.698	$0.66
NAS6203-22D	10-32	1.375	1.698	$1.63
NAS6203-23	10-32	1.438	1.761	$0.68
NAS6203-23D	10-32	1.438	1.761	$1.69
NAS6203-24	10-32	1.500	1.823	$0.76
NAS6203-24D	10-32	1.500	1.823	$1.50
NAS6203-2D	10-32	0.125	0.448	$1.00
NAS6203-3	10-32	0.188	0.511	$0.21
NAS6203-32	10-32	2.000	2.323	$1.98
NAS6203-38	10-32	2.375	2.698	$2.25
NAS6203-3D	10-32	0.188	0.511	$0.65
NAS6203-4	10-32	0.250	0.573	$0.17
NAS6203-4D	10-32	0.250	0.573	$0.66
NAS6203-5	10-32	0.313	0.636	$0.21
NAS6203-56	10-32	3.500	3.823	$0.00
NAS6203-5D	10-32	0.313	0.636	$0.84
NAS6203-6	10-32	0.375	0.698	$0.21
NAS6203-6D	10-32	0.375	0.698	$0.85
NAS6203-7	10-32	0.438	0.761	$0.28
NAS6203-7D	10-32	0.438	0.761	$0.87
NAS6203-8	10-32	0.500	0.823	$0.25
NAS6203-8D	10-32	0.500	0.823	$0.88
NAS6203-9	10-32	0.563	0.886	$0.39
NAS6203-9D	10-32	0.563	0.886	$1.07
NAS6204-10	1/4-28	0.625	0.995	$0.42
NAS6204-10D	1/4-28	0.625	0.995	$0.99
NAS6204-11	1/4-28	0.688	1.058	$0.49
NAS6204-11D	1/4-28	0.688	1.058	$0.92
NAS6204-12	1/4-28	0.750	1.120	$0.72
NAS6204-12D	1/4-28	0.750	1.120	$1.07
NAS6204-13	1/4-28	0.813	1.183	$0.72
NAS6204-13D	1/4-28	0.813	1.183	$1.08
NAS6204-14	1/4-28	0.875	1.245	$0.54
NAS6204-14D	1/4-28	0.875	1.245	$1.14
NAS6204-15	1/4-28	0.938	1.308	$0.51
NAS6204-15D	1/4-28	0.938	1.308	$1.12
NAS6204-16	1/4-28	1.000	1.370	$0.52
NAS6204-16D	1/4-28	1.000	1.370	$1.06
NAS6204-17	1/4-28	1.063	1.433	$0.97
NAS6204-17D	1/4-28	1.063	1.433	$1.73
NAS6204-18	1/4-28	1.125	1.495	$0.86
NAS6204-18D	1/4-28	1.125	1.495	$1.80
NAS6204-19	1/4-28	1.188	1.558	$0.93
NAS6204-19D	1/4-28	1.188	1.558	$1.89
NAS6204-2	1/4-28	0.125	0.495	$0.46
NAS6204-20	1/4-28	1.250	1.620	$0.94
NAS6204-20D	1/4-28	1.250	1.620	$1.91
NAS6204-21	1/4-28	1.313	1.683	$1.17
NAS6204-21D	1/4-28	1.313	1.683	$1.97
NAS6204-22	1/4-28	1.375	1.745	$0.99
NAS6204-22D	1/4-28	1.375	1.745	$2.10
NAS6204-23	1/4-28	1.438	1.808	$1.04
NAS6204-23D	1/4-28	1.438	1.808	$2.20
NAS6204-24	1/4-28	1.500	1.870	$1.19
NAS6204-24D	1/4-28	1.500	1.870	$2.30
NAS6204-25	1/4-28	1.562	1.932	$2.40
NAS6204-27	1/4-28	1.688	2.058	$2.15
NAS6204-28	1/4-28	1.750	2.120	$1.44
NAS6204-3	1/4-28	0.188	0.558	$0.38
NAS6204-4	1/4-28	0.250	0.620	$0.33
NAS6204-4D	1/4-28	0.250	0.620	$0.97
NAS6204-5	1/4-28	0.313	0.683	$0.35
NAS6204-5D	1/4-28	0.313	0.683	$2.15
NAS6204-6	1/4-28	0.375	0.745	$0.38
NAS6204-6D	1/4-28	0.375	0.745	$1.53
NAS6204-7	1/4-28	0.438	0.808	$0.58
NAS6204-7D	1/4-28	0.438	0.808	$0.88
NAS6204-8	1/4-28	0.500	0.870	$0.46
NAS6204-8D	1/4-28	0.500	0.870	$0.98
NAS6204-9	1/4-28	0.563	0.933	$0.47
NAS6204-9D	1/4-28	0.563	0.933	$0.90
NAS6205-11	5/16-24	0.688	1.126	$1.39
NAS6205-11D	5/16-24	0.688	1.126	$3.40
NAS6205-12	5/16-24	0.750	1.188	$1.31
NAS6205-13D	5/16-24	0.812	1.250	$4.75
NAS6205-15	5/16-24	0.938	1.376	$3.40
NAS6205-19	5/16-24	1.188	1.626	$4.35
NAS6205-2	5/16-24	0.125	0.563	$0.85
NAS6205-20	5/16-24	1.250	1.688	$4.80
NAS6205-20D	5/16-24	1.250	1.688	$2.57
NAS6205-22	5/16-24	1.375	1.813	$3.65
NAS6205-24D	5/16-24	1.500	1.938	$6.50
NAS6205-4	5/16-24	0.250	0.688	$1.92

NAS SHEAR BOLTS

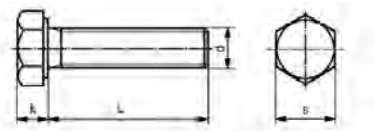
Part Number	Thread	Grip Length	Length	Price
NAS6205-5	5/16-24	0.312	0.750	$0.99
NAS6205-6	5/16-24	0.375	0.813	$1.70
NAS6205-6D	5/16-24	0.375	0.813	$4.60
NAS6205-8	5/16-24	0.500	0.938	$1.58
NAS6205-9	5/16-24	0.562	1.000	$2.30
NAS6206-13	3/8-24	0.812	1.266	$5.50
NAS6206-14D	3/8-24	0.875	1.329	$7.50
NAS6206-15	3/8-24	0.938	1.392	$7.50
NAS6206-17	3/8-24	1.062	1.516	$6.65
NAS6206-21	3/8-24	1.312	1.766	$9.97
NAS6206-22	3/8-24	1.375	1.829	$6.34
NAS6206-23	3/8-24	1.438	1.892	$7.25
NAS6206-23D	3/8-24	1.438	1.892	$26.80
NAS6206-25D	3/8-24	1.562	2.016	$9.95
NAS6206-32	3/8-24	0.002	2.454	$20.95
NAS6206-8	3/8-24	0.500	0.954	$2.15
NAS6206-9	3/8-24	0.562	1.016	$3.20
NAS6206H-4	3/8-24	0.250	0.704	$0.00
NAS6603-1	10-32	0.063	0.408	$0.23
NAS6603-10	10-32	0.625	0.970	$0.33
NAS6603-11	10-32	0.688	1.033	$0.31
NAS6603-12	10-32	0.750	1.095	$0.36
NAS6603-13	10-32	0.813	1.158	$0.38
NAS6603-14	10-32	0.875	1.220	$0.38
NAS6603-15	10-32	0.938	1.283	$0.34
NAS6603-16	10-32	1.000	1.345	$3.35
NAS6603-17	10-32	1.063	1.408	$0.60
NAS6603-18	10-32	1.125	1.470	$0.66
NAS6603-19	10-32	1.188	1.533	$0.66
NAS6603-2	10-32	0.063	0.408	$0.25
NAS6603-20	10-32	1.250	1.595	$0.69
NAS6603-21	10-32	1.313	1.658	$0.70
NAS6603-22	10-32	1.375	1.720	$0.70
NAS6603-23	10-32	1.438	1.783	$0.72
NAS6603-24	10-32	1.500	1.845	$0.73
NAS6603-3	10-32	0.188	0.533	$0.24
NAS6603-4	10-32	0.250	0.595	$0.25
NAS6603-5	10-32	0.313	0.658	$0.28
NAS6603-6	10-32	0.375	0.720	$0.26
NAS6603-8	10-32	0.500	0.845	$0.26
NAS6603-9	10-32	0.563	0.908	$0.29
NAS6604-10	1/4-28	0.625	1.050	$0.52
NAS6604-11	1/4-28	0.688	1.113	$0.54
NAS6604-12	1/4-28	0.750	1.175	$0.60
NAS6604-13	1/4-28	0.813	1.238	$0.48
NAS6604-14	1/4-28	0.875	1.300	$0.67
NAS6604-15	1/4-28	0.938	1.363	$0.84
NAS6604-16	1/4-28	1.000	1.425	$0.89
NAS6604-17	1/4-28	1.063	1.488	$1.13
NAS6604-18	1/4-28	1.125	1.550	$1.10
NAS6604-19	1/4-28	1.188	1.613	$1.27
NAS6604-20	1/4-28	1.250	1.675	$1.07
NAS6604-21	1/4-28	1.313	1.738	$1.14
NAS6604-22	1/4-28	1.375	1.800	$1.17
NAS6604-23	1/4-28	1.438	1.863	$1.19
NAS6604-24	1/4-28	1.500	1.925	$1.19
NAS6604-3	1/4-28	0.188	0.613	$0.37

Part Number	Thread	Grip Length	Length	Price
NAS6604-4	1/4-28	0.250	0.675	$0.39
NAS6604-42D	1/4-28	2.625	2.995	$4.73
NAS6604-5	1/4-28	0.313	0.738	$0.38
NAS6604-56D	1/4-28	3.625	3.870	$0.00
NAS6604-7	1/4-28	0.438	0.863	$0.44
NAS6604-8	1/4-28	0.500	0.925	$0.42
NAS6604-9	1/4-28	0.563	0.988	$0.44
NAS6605-10	5/16-24	0.625	1.094	$0.94
NAS6605-11	5/16-24	0.688	1.157	$0.93
NAS6605-12	5/16-24	0.750	1.219	$0.98
NAS6605-13	5/16-24	0.813	1.282	$0.91
NAS6605-14	5/16-24	0.875	1.344	$1.08
NAS6605-15	5/16-24	0.938	1.407	$1.08
NAS6605-16	5/16-24	1.000	1.469	$1.13
NAS6605-17	5/16-24	1.063	1.532	$1.13
NAS6605-18	5/16-24	1.125	1.594	$1.16
NAS6605-20	5/16-24	1.250	1.719	$1.24
NAS6605-21	5/16-24	1.313	1.782	$1.25
NAS6605-22	5/16-24	1.375	1.844	$1.22
NAS6605-23	5/16-24	1.438	1.907	$1.22
NAS6605-24	5/16-24	1.500	1.969	$1.33
NAS6605-3	5/16-24	0.188	0.657	$0.76
NAS6605-4	5/16-24	0.250	0.719	$0.66
NAS6605-5	5/16-24	0.313	0.782	$0.75
NAS6605-6	5/16-24	0.375	0.844	$0.79
NAS6605-7	5/16-24	0.438	0.907	$0.80
NAS6605-8	5/16-24	0.500	0.969	$0.75
NAS6605-9	5/16-24	0.563	1.032	$0.88
NAS6606-10	3/8-24	0.625	1.203	$1.57
NAS6606-11	3/8-24	0.688	1.266	$1.85
NAS6606-12	3/8-24	0.750	1.328	$1.86
NAS6606-13	3/8-24	0.813	1.391	$2.20
NAS6606-14	3/8-24	0.875	1.453	$2.20
NAS6606-15	3/8-24	0.938	1.516	$2.20
NAS6606-16	3/8-24	1.000	1.578	$2.15
NAS6606-17	3/8-24	1.063	1.641	$2.30
NAS6606-18	3/8-24	1.125	1.703	$2.35
NAS6606-19	3/8-24	1.188	1.766	$2.35
NAS6606-20	3/8-24	1.250	1.828	$2.40
NAS6606-21	3/8-24	1.313	1.891	$2.40
NAS6606-22	3/8-24	1.375	1.953	$2.40
NAS6606-23	3/8-24	1.438	2.016	$2.56
NAS6606-24	3/8-24	1.500	2.078	$2.60
NAS6606-3	3/8-24	0.188	0.766	$1.55
NAS6606-4	3/8-24	0.250	0.828	$1.47
NAS6606-5	3/8-24	0.313	0.891	$1.59
NAS6606-6	3/8-24	0.375	0.953	$1.60
NAS6606-7	3/8-24	0.438	1.016	$1.65
NAS6606-8	3/8-24	0.500	1.078	$1.69
NAS6606-9	3/8-24	0.563	1.141	$1.53

LOW PRICE GUARANTEE
WE WILL MATCH ANY COMPETITOR'S CURRENT PRICE. IF YOU FIND A LOWER PRICE, PLEASE TELL US.

MS20073/MS20074 ENGINE BOLTS

BOLT 8MM X 20 COARSE



Hex head screw 8mm x 20, steel. Zinc plated.
P/N 15-05052.....$0.22

Part No.	Old AN	Thread	Grip	Length	Price
MS20073-03-04	AN73-4	1032 Fine Thread	0.0620	0.5940	$1.53
MS20073-03-05	AN73-5	1032 Fine Thread	0.1250	0.6560	$1.55
MS20073-03-06	AN73-6	1032 Fine Thread	0.2500	0.7810	$1.57
MS20073-04-03	AN74-3	1/4-28 Fine Thread	0.0620	0.4690	$1.59
MS20073-04-04	AN74-4	1/4-28 Fine Thread	0.0620	0.5940	$1.61
MS20073-04-05	AN74-5	1/4-28 Fine Thread	0.1250	0.6560	$1.44
MS20073-04-06	AN74-6	1/4-28 Fine Thread	0.2500	0.7810	$1.65
MS20073-04-07	AN74-7	1/4-28 Fine Thread	0.3750	0.9060	$1.67
MS20074-03-03	AN73A3	1024 Coarse Thread	0.0620	0.4690	$1.50
MS20074-03-04	AN73A4	1024 Coarse Thread	0.0620	0.5940	$1.53
MS20074-04-03	AN74A3	1/4-20 Coarse Thread	0.0620	0.4690	$1.59
MS20074-04-04	AN74A4	1/4-20 Coarse Thread	0.0620	0.5940	$1.49
MS20074-04-05	AN74A5	1/4-20 Coarse Thread	0.1250	0.6560	$1.56
MS20074-04-06	AN74A6	1/4-20 Coarse Thread	0.2500	0.7810	$1.65
MS20074-04-07	AN74A7	1/4-20 Coarse Thread	0.3750	0.9060	$1.67
MS20074-04-12	AN75A12	1/4-20 Coarse Thread	.7500	1.2810	$5.50
MS20074-04-21	AN74A21	1/4-20 Coarse Thread	1.6250	2.1560	$4.30
MS20074-05-06	AN75A6	5/16-18 Coarse Thread	.2500	.7970	$5.25
MS20074-06-06	AN76A6	3/8-16 Coarse Thread	.1250	.7970	$4.55

HARDWARE KITS

BEGINNER'S BOLT KITS

UNDRILLED KIT
102 PIECES

AN3	QTY	AN4	QTY	AN5	QTY
-3A	4	-5A	6	-4A	6
-4A	6	-6A	6	-6A	6
-5A	6	-7A	6	-10A	6
-6A	6	-10A	6	-11A	6
-7A	6	-11A	6	-13A	4
-10A	6	-15A	4	-14A	6

P/N 04-00090 ..... $25.75

DRILLED KIT
102 PIECES

AN3	QTY	AN4	QTY	AN5	QTY
-4	6	-6	6	-6	6
-5	6	-7	6	-10	6
-6	6	-10	6	-14	6
-7	6	-12	6	-15	4
-10	6	-13	6	-16	6
-11	4	-14	4	-17	6

P/N 04-00100 ..... $69.25

HOMEBUILDER'S KIT

CADMIUM PLATED
629 PIECES
AN BOLTS CONTAINS 4 EACH

DRILLED		UNDRILLED	
AN3-4		AN3-4A	
AN3-5		AN3-5A	
AN3-6	AN4-6	AN3-6A	AN4-6A
AN3-7	AN4-7	AN3-7A	AN4-7A
AN3-10	AN4-10	AN3-10A	AN4-10A
AN3-11	AN4-11	AN3-11A	AN4-11A
AN3-12	AN4-12	AN3-12A	AN4-12A
AN3-13	AN4-13	AN3-13A	AN4-13A
AN3-14	AN4-14	AN3-14A	AN4-14A
AN3-15	AN4-15	AN3-15A	AN4-15A
AN3-16	AN4-16	AN3-16A	AN4-16A
AN3-17	AN4-17	AN3-17A	AN4-17A
AN3-20	AN4-20	AN3-20A	AN4-20A

Also Included:

NYLON INSERT LOCKNUTS

ITEM #	QTY.
AN365-1032	52
AN365-428	44

FLAT WASHERS

ITEM #	QTY.
AN960-10	30
AN960-10L	30
AN960-416	30
AN960-416L	30

CASTLE NUTS

ITEM #	QTY.
AN310-3	52
AN310-4	44

COTTER PINS

ITEM #	QTY.
AN380-2-2	125

P/N 04-00230 ..... $166.95

ADVANCED MECHANIC'S KIT

1,229 PIECES - CADMIUM PLATED

DRILLED	UNDRILLED	AN3	AN4	AN5	AN6
-4	-4A	3	3	3	3
-5	-5A	3	3	3	3
-6	-6A	3	3	3	3
-7	-7A	3	3	3	3
-10	-10A	3	3	3	3
-11	-11A	3	3	3	3
-12	-12A	3	3	3	3
-13	-13A	3	3	3	3
-15	-15A	3	3	3	3

Also Includes:

FLAT WASHERS

ITEM #	QTY.
AN960-10	100
AN960-416	100
AN960-516	100
AN960-616	100

NYLON INSERT LOCKNUTS

ITEM#	QTY.
AN365-1032	27
AN365-428	27
AN365-524	27
AN365-624	27

COTTER PINS

ITEM #	QTY.
AN380-2-3	100
AN380-25-3	200
AN380-3-3	100

CASTLE NUTS

ITEM#	QTY.
AN310-3	27
AN310-4	27
AN310-5	27
AN310-6	27

AN6-4 NOT INCLUDED

P/N 04-00240 ..... $246.95

DELUXE BOLT PACK

UNDRILLED KIT BOLTS
500 PIECES

AN3	QTY	AN4	QTY	AN5	QTY
-3A	10	-5A	10	-6A	10
-4A	10	-6A	10	-10A	10
-5A	10	-7A	10	-12A	10
-6A	10	-10A	10	-16A	10
-7A	10	-11A	10		
-10A	10	-12A	10		
-11A	10	-13A	10		
-12A	10	-14A	10		
-13A	10	-15A	10		
-14A	10	-16A	10		
-15A	10	-17A	10		
-16A	10	-22A	10		
-17A	10	-24A	10		
-20A	10	-26A	10		

DRILLED KIT BOLTS

AN3	QTY	AN4	QTY	AN5	QTY
-5	10	-6	10	-7	10
-6	10	-7	10	-14	10
-7	10	-10	10	-17	10
-10	10	-12	10	-24	10
-12	10	-16	10		
-15	10	-20	10		
-20	10				
-24	10				

P/N 04-00245 ..... $211.95

ECONOMY AN BOLT ASSORTMENTS

BOLT ASSORTMENT - UNDRILLED

Qty	P/N	Qty	P/N	Qty	P/N
10	AN3-3A	4	AN4-4A	4	AN5-5A
10	AN3-4A	4	AN4-5A	4	AN5-6A
10	AN3-5A	4	AN4-6A	4	AN5-7A
10	AN3-6A	4	AN4-7A	4	AN5-10A
10	AN3-7A	4	AN4-10A	4	AN5-11A
10	AN3-10A	4	AN4-11A	4	AN5-12A
4	AN3-11A	4	AN4-12A	4	AN5-13A
4	AN3-12A	4	AN4-13A	4	AN5-14A
4	AN3-13A	4	AN4-14A	4	AN5-15A
4	AN3-14A	4	AN4-15A	4	AN5-16A
4	AN3-15A	4	AN4-16A	4	AN5-17A
4	AN3-16A	4	AN4-17A	4	AN5-20A
4	AN3-17A	4	AN4-20A	4	AN5-24A
4	AN3-20A	4	AN4-24A		
4	AN3-24A				

204-piece Undrilled Assortment .....P/N 04-00105 .....$54.25
Above with 44-Drawer Cabinet .....P/N 04-00110 ..... $106.95

BOLT ASSORTMENT - DRILLED

Qty	P/N	Qty	P/N	Qty	P/N
10	AN3-3	4	AN4-4	4	AN5-5
10	AN3-4	4	AN4-5	4	AN5-6
10	AN3-5	4	AN4-6	4	AN5-7
10	AN3-6	4	AN4-7	4	AN5-10
10	AN3-7	4	AN4-10	4	AN5-11
10	AN3-10	4	AN4-11	4	AN5-12
4	AN3-11	4	AN4-12	4	AN5-13
4	AN3-12	4	AN4-13	4	AN5-14
4	AN3-13	4	AN4-14	4	AN5-15
4	AN3-14	4	AN4-15	4	AN5-16
4	AN3-15	4	AN4-16	4	AN5-17
4	AN3-16	4	AN4-17	4	AN5-20
4	AN3-17	4	AN4-20	4	AN5-24
4	AN3-20	4	AN4-24	4	
1	AN3-24	4		4	

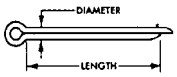
204-piece Drilled Assortment.....P/N 04-00115.....$136.95
Above with 44-Drawer Cabinet .....P/N 04-00120.....$189.95

ECONOMY COMBINED AN BOLT ASSORTMENT

Both drilled and undrilled assortments shown above
P/N 04-00125 .....$190.95

Both assortments shown above with 16-Drawer & 64-Drawer storage cabinets
P/N 04-00130 .....$269.95

ECONOMY WASHER & COTTER PIN ASSORTMENTS



To Accompany AN Bolt Assortments Shown Above

Washers For Undrilled Assortment	Washers & Cotter Pins For Drilled Bolt Assortment	Washers & Cotter Pins For Combined Assortment
P/N 04-00135 .....$5.35	P/N 04-00140.....$10.75	P/N 04-00145 .....$14.50

WASHER ASSORTMENTS
1,500 PIECES - STAINLESS

Contains 100 each of the following:

- 6, 8 & 10 AN960C & AN960CL
- 6, 8 & 10 Nylon
- 6, 8 & 10 MS35333
- 6, 8 & 10 MS35338

P/N 04-00220..... $46.00

WASHER ASSORTMENTS
1,500 PIECES - CAD-PLATED

Contains 100 each of the following:

- 6, 8 & 10 AN960 & AN960L
- 6, 8 & 10 Nylon Washer
- 6, 8 & 10 MS35333
- 6, 8 & 10 MS35338

P/N 04-00215 .....$19.95

ECONOMY SCREW PACKS

1/2" 100° 600-Piece Screw Pack

Flat Phillips - AN507C Machine Screws		Flat Phillips Sheet Metal Screws	
100	6-32 x 1/2	100	6 x 1/2B
100	8-32 x 1/2	100	8 x 1/2B
100	10-32 x 1/2	100	10 x 1/2B

Steel plated ..... P/N 04-00180 ..... $40.00
Stainless ..... P/N 04-00185 ..... $46.75

1/2" 600-Piece Screw Pack

Truss Phillips - AN526C Machine Screws		Truss Phillips Sheet Metal Screws	
100	6-32 x 1/2	100	6 x 1/2A
100	8-32 x 1/2	100	8 x 1/2A
100	10-32 x 1/2	100	10 x 1/2A

Steel plated ..... P/N 04-00190 ..... $24.50
Stainless ..... P/N 04-00195 ..... $33.50

1/2" 900-Piece Screw Pack
The entire contents of 600-piece pack shown above plus the following:

AN507C 100° CSK
Flat Phillips Machine Screws

100 6-32 x 1/2
100 8-32 x 1/2
100 10-32 x 1/2

Steel plated ..... P/N 04-00205 ..... $44.00
Stainless ..... P/N 04-00210 ..... $54.00

SCREW KITS
LARGE ASSORTMENT 2,250 PIECES

AN526 Machine Screw, Truss Phillips

100 ..... 4-40 x 1/2
100 ..... 6-32 x 1/2
100 ..... 8-40 x 3/8
100 ..... 8-32 x 1/2
100 ..... 10-32 x 1/2
100 ..... 10-32 x 3/4

Sheet Metal Screw, Truss Phillips

100 ..... 4 x 1/2
100 ..... 6 x 1/2
100 ..... 8 x 1/2
100 ..... 8 x 1/2B
100 ..... 10 x 1/2

AN507 100° CSK Machine Screw, FP

100 ..... 6-32 x 1/2
100 ..... 8-32 x 1/2
100 ..... 10-32 x 1/2

Nylon Insert Locknuts

50 6-32
50 8-32
50 10-32

Flat Washer AN960

100 6
100 8
100 10

Nylon Washers

100 6
100 8
100 10

100° CSK Washers

50 8
50 10

Stainless Kit ..... P/N 04-00295 ..... $121.95
Steel Plated Kit ..... P/N 04-00296 ..... $121.95

OILTE BRONZE STRAIGHT BUSHINGS

Oilite Impregnated Bronze. SAE 841.

Model No.	Part No.	Hole I.D.	Hole O.D.	Length	Price Ea.
AA304-20	05-01856	1/4	3/8	1	$0.58
AA309-5	05-01857	3/16	5/16	3/4	$0.61
B812-6	05-02098	1/2	3/4	3/4	$1.14
B812-7	05-02099	1/2	3/4	7/8	$1.19
B610-6	04-01944	3/8	5/8	3/4	$1.27
8363	05-04543	5/8	1	1-1/8	$1.85

OILTE BRONZE FLANGED BUSHINGS

Oillite bronze bushings are highly heat resistant, ductile, conformable and corrosion resistant.

Model No.	Part No.	Hole I.D.	Hole O.D.	Length	Flange O.D.	Flange Thickness	Price Each
FB46-02	04-01646	1/4	3/8	1/4	1/2	3/64	$0.31
FB810-04	04-01647	1/2	5/8	1/2	7/8	1/8	$0.63
FB810-08	04-01648	1/2	5/8	1	7/8	1/8	$1.14
FB812-08	04-01649	1/2	3/4	1	1	1/8	$1.62
FB1012-04	04-01639	5/8	3/4	1/2	1	1/8	$0.74
FB1012-08	04-01640	5/8	3/4	1	1	1/8	$1.20
FB-1013-08	04-01641	.6270	.8150	1	1-1/16	5/32	$2.15
FB1214-06	04-01642	3/4	7/8	3/4	1-1/8	5/32	$1.27
FB-1620-06	04-01644	1	1-1/4	3/4	1-1/2	3/16	$2.30
FB1620-10	04-01645	1	1-1/4	1-1/4	1-1/2	3/16	$5.85
FF303-01	04-01650	3/16	5/16	3/16	7/16	1/16	$0.23
FF312-02	04-01651	.252	.3775	1/2	15/32	1/16	$0.59
FF435-1	04-01652	1/4	7/16	1/2	1/2	1/16	$1.35
FF512-03	04-01653	.3765	.5030	5/8	5/8	3/32	$0.56
FF520-10	05-02114	3/8	1/2	3/8	5/8	1/16	$0.55
FF520-15	FF520-15	3/8	1/2	1/4	5/8	1/16	$0.32
FF620-01	04-01654	.5020	.6270	1/2	7/8	1/16	$0.59
FF730-03	04-01655	5/8	3/4	5/8	1	3/32	$1.28

ECONOMY SCREW KIT
STAINLESS STEEL - 2,100 PIECES

AN526C Machine Truss Phillips

Qty.	Length
100	1/2"
50	5/8"
25	3/4"
25	1"

AN507C Machine 100° CSK, Flat Phillips
Sizes 6-32, 8-32, 10-32

Qty.	Length
100	1/2"
50	5/8"
25	3/4"
25	1"

Sheet Metal Truss Phillips

Qty.	Length
100	1/2"
50	5/8"
25	3/4"
25	1"

Sheet Metal 100° CSK, Flat Phillips
Sizes 6, 8, 10

Qty.	Length
100	1/2"

Stainless Kit ..... P/N 04-00290 ..... $161.95

HA

NUT-COTTER PIN ASSORTMENTS

CAD-PLATED COTTER PIN KIT
400 PCS

100	1/16 x 1/2"	50	1/8 x 1"
100	5/64 x 1/2"	25	5/32 x 2"
100	3/32 x 1/2"	25	3/16 x 2"

P/N 04-00155 ..... $15.50

STAINLESS STEEL COTTER PIN KIT
400 PCS

100	1/16 x 1/2"	50	1/8 x 1"
100	5/64 x 1/2"	25	5/32 x 2"
100	3/32 x 1/2"	25	3/16 x 2"

P/N 04-00150 ..... $43.75

CAD-PLATED COTTER PIN KIT
500 PCS

100	1/16 x 1/2"	50	1/16 x 1-1/2"
100	5/64 x 3/4"	50	5A/32 x 2"
100	3/32 x 1"	25	A3/16 x 2"
50	1/8 x 3/4"	25	3/16 x 2-1/2"

P/N 04-00165 ..... $32.75

STAINLESS STEEL COTTER PIN KIT
500 PCS

100	1/16 x 1/2"	50	1/16 x 1-1/2"
100	5/64 x 3/4"	50	5/32 x 2"
100	3/32 x 1"	25	3/16 x 2"
50	1/8 x 3/4"	25	3/16 x 2-1/2"

P/N 04-00160 ..... $92.25

DELUXE COTTER PIN KITS
850 PCS

AN380 - Cad-Plated

Dash	Size	Qty.	Dash	Size	Qty.
-1-2	1/32 x 1/2"	50	-3-4	3/32 x 1"	75
-1-4	1/32 x 1"	50	-3-6	3/32 x 1-1/2"	25
-2-2	1/16 x 1/2"	100	-3-8	3/32 x 2"	25
-2-3	1/16 x 3/4"	100	-4-3	1/8 x 3/4"	25
-2-4	1/16 x 1"	100	-4-5	1/8 x 1-1/4"	75
-25-2	5/64 x 1/2"	25	-4-8	1/8 x 2"	50
-25-3	5/64 x 3/4"	25	-4-10	1/8 x 2-1/2"	50
-3-3	3/32 x 3/4"	75			

P/N 04-00375 ..... $28.50

AN381 - Stainless

Dash	Size	Qty.	Dash	Size	Qty.
-1-8	1/16 x 1/2"	100	-3-16	3/32 x 1"	75
-2-12	1/16 x 3/4"	100	-3-24	3/32 x 1-1/2"	25
-2-16	1/16 x 1"	100	-4-12	1/8 x 3/4"	25
-2-24	1/16 x 1-1/2"	50	-4-16	1/8 x 1"	50
-25-8	5/64 x 3/4"	50	-4-24	1/8 x 1-1/2"	25
-25-12	5/64 x 1/2"	75	-4-32	1/8 x 2"	25
-3-8	3/32 x 1/2"	75	-4-40	1/8 x 2-1/2"	25
-3-12	3/32 x 3/4"	50			

P/N 04-00380 ..... $78.00

ECONOMY AN365 NUT PACKS

AN365C NUT KIT
Stainless

Qty.	Part No.
25	4-40
50	6-32
50	8-32
50	10-32
25	1/4-28

AN365 NUT KIT
Cad-Plated

Qty.	Part No.
50	4-40
100	6-32
100	8-32
100	10-32
50	1/4-28

Stainless Kit ..... P/N 04-00170 ..... $53.25
Cad Plated Kit ..... P/N 04-00175 ..... $58.75

LOCKNUT KIT 208 PIECES

Cad-Plated. For undrilled bolt assortment.

100 ea	AN365-1032
56 ea	AN365-428
52 ea	AN365-524

P/N 04-00330 ..... $23.00

CASTLE NUT KIT 208 PIECES

Cad-Plated.
For drilled bolt assortment

100 ea	AN310-3
56 ea	AN310-4
52 ea	AN310-5

P/N 04-00335 ..... $143.95

AN365C NUT KIT
STAINLESS 200 PIECES

50 ea	632	25 ea	428
50 ea	832	25 ea	524
50 ea	1032		

P/N 04-00340 ..... $82.00

AN365 NUT KIT
CAD-PLATED - 400 PIECES

100 ea	632	50 ea	428
100 ea	832	50 ea	524
100 ea	1032		

P/N 04-00345 ..... $50.75

470 PIECE COMBO NUT ASSORTMENT

Nylon Insert Locknuts

Item #	Qty.
AN365-632	15
AN365-832	50
AN365-1032	50
AN365-428	50
AN365-524	15

Castle Nuts

Item #	Qty.
AN310-3	50
AN310-4	50
AN310-5	15
AN310-6	15

Plain Hex Nuts

Item #	Qty.
AN315-3	25
AN315-4	25
AN315-5	15
AN315-6	15

Shear Castle Nuts

Item #	Qty.
AN320-3	25
AN320-4	25
AN320-5	15
AN320-6	15

P/N 04-00350 ..... $208.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

HARDWARE KITS

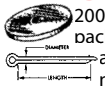
DELUXE BOLT PACK

700 BOLTS - 50 Sizes, individually packaged. AN3, AN4 and AN5 bolts in lengths from 3/8" to 2-3/4" with drilled and undrilled shanks, in quantities selected to accommodate popular usage. Furnished with a 44-drawer storage cabinet. An exceptionally fine value. P/N 04-00200 .....$298.95

Part No.	Qty.	Length
3/16" Dia., Undrilled Shank		
AN3-3A	10	3/8"
AN3-4A	15	1/2"
AN3-5A	25	5/8"
AN3-6A	25	3/4"
AN3-7A	12	7/8"
AN3-10A	30	1"
AN3-11A	30	1-1/8"
AN3-12A	30	1-1/4"
AN3-13A	20	1-3/8"
AN3-14A	20	1-1/2"
AN3-15A	20	1-5/8"
AN3-16A	20	1-4/3"
AN3-17A	20	1-7/8"
AN3-20A	12	2"
3/16" Dia., Drilled Shank		
AN3-5	15	5/8"
AN3-6	20	3/4"
AN3-7	20	7/8"
AN3-10	20	1"
AN3-12	10	1-1/4"
AN3-15	10	1-5/8"
AN3-20	8	2"
AN3-24	8	2-1/2"
1/4" Dia., Undrilled Shank		
AN4-5A	24	5/8"
AN4-6A	24	3/4"
AN4-7A	24	7/8"

1/4" Dia., Undrilled Shank		
AN4-10A	24	1"
AN4-11A	12	1-1/8"
AN4-12A	12	1-1/4"
AN4-13A	12	1-3/8"
AN4-14A	12	1-1/2"
AN4-15A	12	1-5/8"
AN4-16A	12	1-3/4"
AN4-17A	12	1-7/8"
AN4-22A	6	2-1/4"
AN4-24A	6	2-1/2"
AN4-26A	6	2-3/4"
1/4" Dia., Drilled Shank		
AN4-6	10	3/4"
AN4-7	10	7/8"
AN4-10	10	1"
AN4-12	10	1-1/4"
AN4-16	6	1-3/4"
AN4-20	6	2"
5/16" Dia. Undrilled Shank		
AN5-6A	6	3/4"
AN5-10A	8	1"
AN5-12A	6	1-1/8"
AN5-16A	6	1-3/4"
5/16" Dia. Drilled Shank		
AN5-7	6	7/8"
AN5-14	6	1-1/2"
AN-17	6	1-7/8"
AN5-24	6	2-1/2"

DELUXE WASHER & COTTER PIN PACK



2000 WASHERS, 700 COTTER PINS - 31 Items, individually packaged.A combination of flat washers in steel and anodized aluminum, regular and light weight, large-area washers, internal locking type, Tinnerman countersunk washers and six useful sizes of cotter pins. 26 Drawer hardware cabinet included.

P/N 04-00300 .....$143.95

Part No.	Qty.	Size
Steel, Regular Flat		
AN960-6	100	#6
AN960-8	100	#8
AN960-10	250	3/16"
AN960-416	200	1/4"
AN960-516	100	5/16"
Steel, Light Flat		
AN960-6L	100	#6
AN960-8L	100	#8
AN960-10L	100	3/16"
AN960-416L	100	1/4"
AN960-516L	50	5/16"
Anod. Alum. Regular Flat		
AN960PD10	50	3/16"
AN960PD416	50	1/4"
Anod. Alum. Light Flat		
AN960PD10L	50	3/16"
AN960PD416L	50	1/4"
Steel, Large Flat		
AN970-3	25	3/16"

Steel, Large Flat		
AN970-4	14	1/4"
AN970-5	11	5/16"
Steel, Internal Lock		
MS35333-37	50	#6
MS35333-38	50	#8
MS35333-39	50	#10
MS35333-40	50	1/4"
MS35333-41	50	5/16"
Tinnerman Countersunk		
A3236-012-24A	100	#6
A3135-017-24A	100	#8
A3235-028-24A	100	#10
Cotter Pins		
Part No.	Qty.	Size
MS24665-132	225	1/16" x 1/2"L
MS24665-134	200	1/16" x 3/4"L
MS24665-136	200	1/16 x 1"L
MS24665-283	50	3/32" x 3/4"L
MS24665-285	13	3/32" x 1"L
MS24665-360	12	1/8" x 2"L

ASSORTED HARDWARE KITS

HOMEBUILDERS HARDWARE KIT

Contains: • 78 AN3 (10-32 size) Undrilled bolts in 13 consecutive sizes from AN3-4A through AN3-20A •66 AN4 (1/4" dia.) Undrilled Bolts in 11 consecutive sizes from AN4-6A through AN4-20A •100 AN365-1032 Stop Nuts •100 AN365-428 Stop Nuts •100 AN960-10 Washers •100 AN960-416 Washers •100 AN380-2-2 Cotter Pins

P/N 04-00400 .....$57.75

With 26-Drawer Storage Cabinet..... P/N 04-00500 .....$96.75

MECHANICS HARDWARE KIT

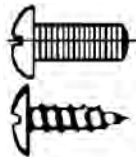
Contains: • 40 AN3 (10-32 size) Bolts from 1/2" to 3" long • 44 AN4 (1/4" dia.) Bolts from 1" to 4" long • 52 AN5 (5/16" dia.) Bolts from 1" to 4" long • 24 AN6 (3/8" dia.) Bolts from 1-3/4" to 4-1/2" long • 300 AN960 Washers •75 AN365 Stop Nuts • 100 AN380 Cotter Pins

Bolts are furnished in equal quantities with drilled and undrilled shanks. Lengths are spaced in 1/4" increments. The proper number, size and type of nuts, washers and cotter pins are furnished to mate with bolts. P/N 04-00600 ..... $226.95

With (1) 26 & (1) 64 -Drawer Storage Cabinets

P/N 04-00700 .....$318.95

DELUXE SCREW PACK



3500 SCREWS - 55 Items, individually packaged.A good working assortment of standard screws including truss head, 100° flat head and structural type, washer head, 100° flat head sheet metal screws for use with Tinnerman countersunk washers, truss head sheet metal screws, both sharp and blunt point, & brass instrument screws. 44-Drawer cabinet Included.

P/N 04-00800 .....$344.95

PART NO.	QTY.	SIZE
AN 526 Truss Hd Screw, Phillips		
AN526-632R6	100	6-32 x 3/8"
AN526-632R8	100	x 1/2"
AN526-632R10	100	x 5/8"
AN526-632R12	100	x 3/4"
AN526-832R6	100	8-32 x 3/8"
AN526-832R8	100	x 1/2"
AN526-832R10	100	x 5/8"
AN526-832R12	100	x 3/4"
AN526-1032R8	100	10-32 x 1/2"
AN526-1032R10	100	x 5/8"
AN526-1032R12	100	x 3/4"
AN526-1032R16	50	x 1"
AN507 Screws 100° C snk Flat Head Phillips		
MS2469326	100	6-32 x 3/8"
MS24693S28	100	x 1/2"
MS24693S29	100	x 5/8"
MS24693S10	100	x 3/4"
MS24693S31	100	x 7/8"
MS24693S48	100	8-32 x 3/8"
MS24693S50	100	x 1/2"
MS24693S51	100	x 5/8"
MS24693S52	100	x 3/4"
MS24693S54	50	x 1"
MS24693S58	25	x 1-1/2"
MS24693S272	100	x 1/2"
MS24693S273	100	x 5/8"
MS24693S274	100	x 3/4"
MS24693S276	50	x 1"
MS24693S280	25	x 1-1/2"
Brass Instrument Screws Round Head Phillips		
AN515B6R12	25	6-32 x 3/4"

AN509 Structural Screws 100°C snk Flat Head Phillips		
MS24694S5	25	8-32 x 1/2"
MS24694S7	25	x 5/8"
MS24694S9	25	x 3/4"
MS24694S50	25	10-32 x 1/2"
MS24694S52	25	x 5/8"
MS24694S54	25	x 3/4"
Washer Head Structural Screws		
AN525-832R8	25	8-32 x 1/2"
AN525-832R10	25	x 5/8"
AN525-1032R8	25	10-32 x 1/2"
AN525-1032R10	25	x 5/8"
AN525-1032R12	25	x 3/4"
Sheet Metal Screws 100°C snk Flat Head Phillips		
NAS548P-6	100	#6 x 3/8"
NAS548P6-8	100	x 1/2"
NAS548P6-10	100	x 5/8"
NAS548P8-8	100	#8 x 1/2"
NAS548P8-10	100	x 5/8"
Sheet Metal Screws, Truss Hd "B"		
#4R x 1/4"	100	Phillips
#4R x 3/8"	100	Blunt Point
#4R x 1/2"	100	
#6R x 3/8"	100	
#6R x 1/2"	100	
#6R x 5/8	100	
#8R x 1/2"	100	
#8R x 3/4"	100	
Sheet Metal Screws, Truss Hd "A"		
#4R x 1/2"	200	Phillips
#6R x 1/2"	200	Sharp Point

DELUXE NUT PACK

1000 NUTS - 29 Items, individually packaged. Nuts have been carefully selected to include every commonly used type in aircraft assembly - Self-locking, castle, plain hex, Pal, Tinnerman and all-metal two-lug anchor nuts not found in other hardware assortments. 26-Drawer Cabinet Included

P/N 04-00900 .....$389.95

PART NO.	QTY.	SIZE
Elastic Stop Nuts		
AN365-632A	25	6-32
AN365-832A	25	8-32
AN365-1032A	75	10-32
AN365-428A	50	1/4 x 28
AN365-524A	25	5/16 x 24
All Metal Stop Nuts		
MS21042-3	75	10-32
MS21042-4	25	1/4 x 28
Castle Nuts		
AN310-3	50	10-32
AN310-4	50	1/4 x 28
AN310-5	14	5/16 x 24
Shear Castle Nuts		
AN320-3	12	10-32
AN320-4	12	1/4 x 28
AN320-5	12	5/16 x 24
Plain Hex Nuts		
AN315-3	25	10-32

AN315-4	25	1/4 x 28
AN315 -5	25	5/16 x 24
Check Nuts		
AN315-3	25	10-32
AN316-4	25	1/4 x 28
Palnuts		
MS27151-7	25	10-32
MS27151-13	25	1/4 x 28
MS27151-16	25	5/16 x 24
Tinnerman Nuts, Flat Type		
#1777-6Z-1	50	#6
#1778-8Z-1	50	#8
#1779-10Z-1	25	#10
Tinnerman Nuts, U Type		
#1784-6Z-1	50	#6
#A1932-8Z-1	50	#8
Two Lug Anchor Nuts		
K1000-08	50	8-32
K1000-3	50	10-32
K1000-4	25	1/4 x 28

HARDWARE CABINETS

Heavy-duty small parts organizer cabinets. The "see-thru" clear plastic drawers measure 1-1/4" x 2-3/4" x 5-3/4". The plastic cabinets are black. Furnished with adjustable drawer dividers. 16 drawer is white plastic.

CABINETS		PORTABLE ORGANIZERS	
16-Drawer	04-01464 .....$25.50	12-62 compartments.....	04-01468 ....$25.75
26-Drawer	04-01465 .....$38.95	11-46 compartments.....	04-01469 ....$29.85
44-Drawer	04-01466 .....$52.75	64-Drawer.....	04-01467 ....$52.90
Lg Dividers (25)40-501	$8.75	Lg Dividers (6)	04-02039 ..... $6.80
		Sm Dividers (16)	04-02037 ....$11.50

HA

AN310 CASTLE, AN320 SHEAR NUTS

Fabricated from steel & cadmium plated per QQ-P-416, Type II, Class 2. AN310 castle nuts are used with drilled-shank bolts, clevis bolts, eye bolts and studs. The slots in the nut accommodate a cotter pin for safety purposes. The thinner AN320 castellated shear nut, with half tensile rating of the AN310 nut, used with clevis bolts & threaded taper pins which are subject to shearing stress only.

AN310, AN320 Dash No.	Thread Size	Cotter Pin Size	AN310 Cad Plated Nuts Price	AN310C Stainless Nuts	AN320 Cad Plated Each	AN320C Stain-less Nuts
-3	10-32	AN380-2-2	$0.62	$1.08	$0.71	$1.10
-4	1/4-28		$0.79	$1.50	$1.08	$0.97
-5	5/16-24		$0.98	$1.45	$0.97	$1.12
-6	3/8-24	AN380-3-3	$1.13	$1.96	$1.10	$1.17
-7	7/16-20		$1.62	$3.60	$1.35	$4.65
-8	1/2-20		$2.77	$4.45	$1.79	$2.97
-9	9/16-18	AN380-4-4	$3.95	---	$1.79	$6.45
-10	5/8-18		$2.60	---	$2.27	$4.70
-12	3/4-16	AN380-4-5	$4.43	---	$4.35	$8.50

AN315 FULL HEX, AN316 THIN CHECK NUTS

Fabricated from steel and cadmium plated per QQ-P-416, Type II, Class 2. The AN315 plain hex nut is of rugged construction and can carry the same high tension load as the AN310 castle nut. It requires an auxiliary locking device such as a check nut or lock washer. AN316 hex check nuts can carry half the tension load of the AN315 nut. They are used as a locking device for plain nuts, set screws, rod ends, etc. Order by AN number. Add R or L after dash number for right-hand or left-hand thread. Example: AN316-5L is a thin check nut with 5/16-24 left-hand thread.

AN315	Price Ea.		Thread Size	AN316	Price Ea.	
	R	L			R	L
-640	$0.38	$0.78	6-40	None	None	None
-3	$0.06	$0.45	10-32	None	None	None
-4	$0.09	$0.34	1/4-28	-4	$0.09	$0.36
-5	$0.11	$0.46	5/16-24	-5	$0.13	$0.49
-6	$0.17	$0.66	3/8-24	-6	$0.15	$0.53
-7	$0.62	$2.18	7/16-20	-7	$0.37	$0.63
-8	$0.46	---	1/2-20	-8	$0.44	$1.23
-9	$2.53	---	9/16-18	-9	$1.95	---

HEX NUT - LOW HEIGHT

Heat treated, cadmium plated steel with dry film lubricant applied. Self-locking. Standard temp. to 450°F.

Thread Size	NAS No.	Part No.	Price Ea.
6-32	679-A06	04-00143	$1.39
8-32	679-A08	04-00144	$0.75
10-32	679-A3	04-00146	$0.58
1/4-28	679-A4	04-00147	$0.79

Thread Size	NAS No.	Part No.	Price Ea.
5/16-24	679-A5	04-00148	$1.88
3/8-24	679-A6	04-00149	$3.40
7/16-20	679-A7	04-00154	$9.94

CAP NUTS ("ACORN NUTS")

Use these solid brass cap nuts to attach instrument panels to stud-type shock mounts. Give the panel an attractive, finished appearance and do not introduce magnetic interference.

Part No.	Thread Size	Price Ea
AC632	6-32	$0.26
AC832	8-32	$0.26

Part No.	Thread Size	Price Ea
AC1032	10-32	$0.45
AC1428	1/4-28	$1.37

Surplus SS 8-32 Acorn Nut Cap .....P/N 04-01479 .....$0.34

AN345 PLAIN HEX MACHINE SCREW NUT

Fine Thread Thread	Cad-Plated Cat.#	Price	Stainless Cat.#	Price
10-32	AN345-10	$0.04	AN345C10	$0.29
1/4-28	AN345-428	$0.08	AN345C428	$0.59
5/16	AN345-524	$0.16		
3/8-24	AN345-624	$0.58		

ZINC TEE NUTS

Here's an easy way to put steel threads in wood, plastic, or particleboard. Just drill a hole to fit the barrel, insert tee nut, and hammer in the locking prongs until the base of the tee nut is flush with the surface. Right-hand thread.

8-32	1/4"	04-02056	$0.19
10-32	5/16"	04-02057	$0.23
1/4-20	7/16"	04-02058	$0.32

AN340 PLAIN HEX MACHINE SCREW NUT

Coarse Thread - Use brass type for instruments.

Thread	Dash#	AN340 Cad-Plated Price	AN340C Stainless Price	AN340B Brass Price
4-40	-4	$0.11	$0.23	$0.51
6-32	-6	$0.05	$0.22	$0.29
8-32	-8	$0.05	$0.28	$0.19
10-24	-10	$0.07	$1.65	$0.27

AN350 WING NUTS

AN350 WING NUTS Fabricated from carbon steel and cadmium plated per specification QQ-P416A, Type II, Class 3. Tensile strength 50,000 PSI. A .070" hole is drilled in one wing for safety wire.

Dash No.	Thread Size	Price Each	Dash No.	Thread Size	Price Each
-632	3-32	---	-4	1/4-28	$1.49
-832	8-32	---	-5	5/16-24	---
-1032	10-32	$2.48			

MS27151 PAL NUTS

MS27151 engine nuts replace AC356 Pal nuts. They are stamped from 1050 spring steel and cadmium plated per QQ-P-416A, Type II, Class 2.

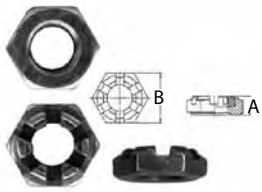
Dash No.	Thread Size	Price Each	Dash No.	Thread Size	Price Each
-7	10-32	$0.49	-19	3/8-24	$0.18
-13	1/4-28	$0.18	-21	7/16-24	$0.35
-16	5/16-24	$0.16	-24	1/2-20	$0.28

MS17825 SELF-LOCKING CASTLE NUTS

Manufactured to standard castle or shear nut specifications with a nylon insert added for positive safety. Use it throughout the control system. Should the cotter pin used with castle nuts be overlooked, the nut cannot work loose. The nylon insert will act as a stop nut.

Dash No.	Thread Size	Price Each
-3	10.32	$1.24
-4	1/4-28	$1.56
-5	5/16-24	$1.75

Dash No.	Thread Size	Price Each
-6	3/8-24	$1.98
-7	7/16-20	$2.65



MS17826 SELF LOCKING NUTS

MS17826 Nylon Hex Nut. Self-Locking Nut, Castellated, Hexagon, 250 Deg.F, Thin, Non-Metallic Insert Material- Alloy Steel, Finish - CAD Per QQ-P-416 Type II.

Model	Part No.	Steel Dash#	Thread Size	A Dim	B Dim	Price
MS17826-3	04-01367	3	10-32	.173-.203	.367-.376	$1.66
MS17826-4	04-01368	4	1/4-28		.430-.439	$1.62
MS17826-5	04-01369	5	5/16-24		.492-.502	$1.84
MS17826-6	04-01370	6	3/8-24	.204-.234	.553-.564	$2.25
MS17826-7	04-01371	7	7/16-20		.679-.690	$2.99
MS17826-8	04-01372	8	1/2-20	.235-.265	.741-.752	$3.20

EXHAUST MANIFOLD NUTS

Part No.	Thread Size	Type	Engine Application	Price Each
22022	5/16-24	Brass	Cont. A-65, (C-75 thru O-90, O-200, O-300)	$0.86
STD1410	5/16-18	Steel	Lycoming	$1.48
STD1411	1/4-20	Steel	Lycoming	$2.20

MS21042 HEX NUTS (LUBED)

These are the same as MS21042- but have a dry film lube (dark grey).

Dash No.	Thread Size	Price Each
-L04	4-40	$0.59
-L06	6-32	$0.33
-L08	8-32	$0.42

Dash No.	Thread Size	Price Each
-L3	10-32	$0.32
-L4	1/4-28	$0.35

Dash No.	Thread Size	Price Each
-L5	5/16-24	$0.73
-L6	3/8-24	$0.91

MS21043 HEX NUTS (STAINLESS STEEL)

These are the same as MS21042 but are made from A-286 stainless steel and are silver plated.

Dash No.	Thread Size	Price Each
-04	4-40	$0.87
-06	6-32	$1.15
-08	8-32	$0.89

Dash No.	Thread Size	Price Each
-3	10-32	$0.56
-4	1/4-28	$0.94

Dash No.	Thread Size	Price Each
-5	5/16-24	$1.73
-6	3/8-24	$2.85

AN363
MS21045
NAS1021A

MS21042

AN363 & MS21042 ALL METAL STOP NUTS

The AN363 and MS21042 all-metal stop nuts are designed for use in high temperature installations (up to 450°F). The MS21042 nuts are shorter than the AN363 nut but develop the same tensile strength. Fabricated from carbon steel and cadmium plated per specification QQ-P-416C.

AN363 CAD Plated Dash No.	Price Each	AN363C Stainless Dash No.	Price Each	Thread Size	MS21042 Dash No.	Price Each
-632	$0.38	-632	$1.47	6-32	-06	$0.35
-832	$0.35	-832	$1.44	8-32	-08	$0.39
-1032	$0.38	-1032	$1.12	10-32	-3	$0.29
-428	$0.41	-428	$1.83	1/4-28	-4	$0.37
-524	$0.69	-524	$2.40	5/16-24	-5	$0.92
-624	$0.67	-624	$3.35	3/8-24	-6	$0.88
-720	$1.40	---	---	7/16-20	-7	---
-820	$1.50	---	---	1/2-20	-8	---
-918	$3.40	---	---	9/16-18	-9	---

AN364, AN365 ELASTIC STOP NUTS

AN364
MS21083
NAS1022N

AN365
MS21044
NAS1021N

These precision-made nuts are reliable and economical fastening devices. The nylon insert gives a friction grip on the threads of the bolt and holds securely. The AN364 (thin) stop nut is for use in structural applications where the bolt is loaded primarily in shear or in any application where the tensile strength of the regular height AN365 is not required. Cad stop nuts are furnished to military specifications. Insert color designates manufacturer only.

Dash No.	Thread Size	Price Ea.		Dash No.	Thread Size	Price Ea.	
		AN364	AN365			AN364	AN365
-440A	4-40	$0.26	-----	-524A	5/16-24	$0.49	$0.15
-440	4-40	-----	$0.31	-624A	3/8-24	$0.73	$0.26
-632A	6–32	$0.32	$0.23	-720A	7/16-20	$1.22	$1.00
-832A	8-32	$0.11	$0.13	-820A	1/2-20	$1.25	$0.98
-1024A	10-24	---	$0.29	-918A	9/16-18	$1.42	$1.55
-1032A	10-32	$0.13	$0.11	-1018A	5/8-18	$1.50	$1.12
-428A	1/4-28	$0.13	$0.12	-1216A	3/4-16	$2.10	$3.40

NSWC ELASTIC STOP NUT KIT

Contains: • AN364-428A (20 qty)• AN364-918A (4 qty) • AN364-624A(22 qty) • AN364-720A (4 qty) • AN364-820A (32 qty)

P/N 04-01729 ..... $69.75

AN364, AN365 STAINLESS STOP NUTS

Thread	Part No.	Price	Thread	Part No.	Price
1/4-28	AN364C-428	$0.88	1/4-28	AN365C-428	$0.48
3/8-24	AN364C-624	$1.31	5/16-24	AN365C-524	$1.22
632	AN364C-632	$0.53	3/8-24	AN365C-624	$1.53
7/16-20	AN364C-720	$2.80	6-32	AN365C-632	$0.26
1/2-20	AN364C-820	$2.62	7/16-20	AN365C-720	$2.63
8-32	AN364C-832	$0.62	1/2-20	AN365C-820	$3.50
9/16-18	AN364C-918	$8.85	8-32	AN365C-832	$0.28
5/8-18	AN364C-1018	$3.95	5/8-18	AN365C-1018	$6.70
10-32	AN364C-1032	$0.64	10-32	AN365C-1032	$0.25

MS21044 / MS21083 STAINLESS STOP NUTS

Part Number	Bolt Size	Price Ea.	Part Number	Bolt Size	Price Ea.
MS21044C04	#4	$0.54	MS21083C4	1/4	$0.48
MS21044C10	5/8	$6.70	MS21083C7	7/16	$2.80
MS21083C9	9/16	$8.85	MS21083C8	1/2	$2.62
			MS21083C10	5/8	$3.95

COMMERCIAL GRADE STAINLESS STOP NUTS

Dash No.	Thread Size	Price Ea.		Dash No.	Thread Size	Price Ea.	
		Com364	Com365			Com364	Com365
-440	4-40	$0.09	$0.07	-624	3/8-24	---	$0.23
-632	6–32	$0.07	$0.06	-720	7/16-20	---	$0.40
-832	8-32	$0.09	$0.06	-820	1/2-20	---	$0.74
-1024	10-24	---	---	-918	9/16-18	---	---
-1032	10-32	$0.16	$0.07	-1018	5/8-18	---	$1.37
-428	1/4-28	$0.15	$0.15	-1216	3/4-16	---	---
-524	5/16-24	---	$0.18				

ANCHOR NUTS

Anchor nuts are designed for blind mounted applications where it is impractical to use hex nuts or where it is desirable to have an attached nut for ease of maintenance. Use 3/32" dia. rivets with nut sizes 632, 832, 1032 and 428. Use 1/8" dia. rivets with 524 and 624.

TWO LUG ANCHOR NUTS

AN366F
NA1, MS21078, NAS1023N

K1000
MS21047,NAS680S, NAS1023A

MK1000
MS21069, NAS697N

ELASTIC-INSERT ANCHOR NUT

Part No.	Thread Size	Price Each	Part No.	Thread Size	Price Each
MS21078-06	6-32	$13.38	AN366F-428A	1/4-28	$1.64
AN366F-524A	8-32	-	AN366F-524	5/16-24	$1.79
AN366F-1032A	10-32	$3.60			

ALL METAL ANCHOR NUT

Dash No.	Thread Size	K1000 (Full Size)	MK1000 (Miniature)	MS21047
		Price Ea.	Price Ea.	Price Ea.
06	6-32	$0.51	$0.60	$1.60
08	8-32	$0.52	$0.53	$0.97
3	10-32	$0.58	$0.65	$1.08
-4	1/4-28	$0.87	$0.69	---
-5	5/16-24	$1.23	---	---
-6	3/8-24	$2.50	---	---

ONE LUG ANCHOR NUTS

NA17
MS21080, NAS1025N

K2000
MS21051, NAS682A, NAS1025A

MK2000
MS21071, NAS696A

Elastic-Insert Anchor Nut		Thread Size	All-Metal Anchor Nut		
				Price Each	
Part No.	Price Each		Dash No.	MS21051 (Full Size)	MS21071 (Miniature)
		6-32	L06	$0.82	$0.78
		8-32	L08	$0.85	$0.59
MS21080-3	$5.95	10-32	L3	$0.58	$0.65
		1/4-28	L4	$0.99	$1.19

ANCHOR NUT, DIMPLED, STANDARD SIZE

Anchor Nut, Dimpled Standard Size

K1100-0 ..... 6-32 Thread ..... P/N 04-01724 ..... $2.45
K1100-08 ..... 8-32 Thread ..... P/N 04-01725 ..... $0.78

Anchor Nut, One Leg, Dimpled, Standard size

MS21053-L08 ..... 8-32 Thread ..... P/N 04-01726 ..... $0.98

NA5
MS21081
NAS1027N

CORNER NUTS

K3000
MS21055
NAS684A
NAS1027A

All-Metal Anchor Nut	Price Ea.	Size	Anchor Nut	Price Ea.
MS21081-3	$5.35	8-32	MS21055L08	$1.20
		10-32	MS21055L3	$0.65
		1/4-28	MS21055L4	$1.65

NA27 (AN256F)

RIGHT ANGLE FLOATING NUTS

Part No.	Thread Size	Price Ea.
22NA27-22-62	6-32	$9.85
22NA27-22-82	8-32	---

TWO LUG MINI ANCHOR NUTS

Part Number	Thread Size	Price Each
MS21075L06	6-32	$0.98
MS21075L08	8-32	$0.86
MS21075L3	10-32	$0.87
MF500-3 (Surplus Material)	10-32	$2.30

F5000
MS21059

ALL-METAL FLOATING ANCHOR NUTS

F2000
MS21061

Two-Lug Nut	Price Ea.	Thread Size	One-Lug Nut	Price Ea.
---	---	4-40	MS21061-04	$2.26
MS21059L06	$0.94	6-32	MS21061L06	$1.33
MS21059L08	$0.78	8-32	MS21061L08	$0.87
MS21059L3	$0.72	10-32	MS21061L3	$0.83
MS21059L4	$1.08	1/4-28	MS21061-L4	$1.80

HA

TINNERMAN NUTS FOR SHEET METAL SCREWS

"B"-type Sheet Metal Screw

These speed nuts are self-locking steel fasteners. Locking action is derived from the force exerted by the two arched prongs against the root of the screw thread and by the spring tension of the prongs and base. The combined forces of the thread lock and spring tension provide a vibration proof fastening. Speed nuts retain their spring tension and may be used repeatedly without losing their self-locking effectiveness. Suitable for numerous non-structural applications.

Finish: Phosphate-coated with three coats of olive drab paint.

Important: Speed nuts for aircraft are designed to fit standard AN530-AN531 type B sheet metal screws only. Do not use pointed type A sheet metal screws with aircraft Speed nuts. There is a difference in root diameter and thread pitch. Screw lengths: B type sheet metal screws have a blunt taper at the end. To be certain the fastener prongs grip on the full root diameter, the screw should protrude two to three threads beyond the prongs. See the illustration.

FLAT TYPE (NAS 446)

Used to replace threaded nuts, lock washers, and spanner washers; weigh less than other types of self-locking aircraft fasteners. Can be applied faster, easier, and are vibration resistant. Provide maximum holding power at minimum cost per fastener. Turned-up ends prevent scoring of surfaces. Use with type B tapping screws.

"U" TYPE (NAS 395)

Part No.	Screw Size	Price ea.
A1776-4Z-1D	#4	$0.21
A1777-6Z-1D	#6	$0.29
A1778-8Z-1D	#8	$0.19
A1779-10Z-1D	#10	$0.22

ANCHOR NUTS (NAS 444)

Riveted or welded in position. Attach access plates, doors or any part that must be fastened securely, yet easily removed with fasteners retained in a blind location. Install with AN426AD-3 rivets.

Part No.	Screw Size	Price/Ea.
A6195-6Z-1D	#6	$0.39
A6195-8Z-1D	#8	$0.37

LHA 4972 FLOATING CLIPNUT

CADMIUM-PLATED STEEL

Part No.	Thread	Price Each
4972-5-62	6-32	$1.52
4972-6-82	8-32	$1.10
LHA4972-1032	10-32	$2.25

INSTRUMENT MOUNTING NUTS

Cage type. Permit mounting of aircraft instruments from the front of the panel. No charge in panel or instrument design required. Non-magnetic (speed nut is brass; cage is phosphor bronze). Conform to MIL-N-3336. Cage is easily compressed with finger-pressure to allow insertion of legs into clearance holes. When fully inserted and pressure is released, legs spring apart; retain SPEED NUT in screw-receiving position. Turned-down corners hold firm against force of inserting screw and screw-tightening torque. All instrument mounting nuts listed below take a 6-32 machine screw.

Tinnerman Part No.	Our Part No.	NAS Part No.	Instrument Thickness	Price Ea.
A8938-632-493	MS33737-9C	487-13	.062	$1.98
A8939-632-493	MS33737-10C	487-14	.091	$1.40
A6939-632-493	MS33737-11C	487-15	.125	$1.64
A8940-632-493	MS33737-12C	487-16	.187	$1.73
A8941-632-493	MS33737-13C	487-17	.250	$1.75
A8942-632-493	MS33737-14C	487-18	.313	$1.75
A8943-632-493	MS33737-15C	487-20	.375	$1.69
A8944-632-493	MS33737-16C	487-21	over .375	$1.80

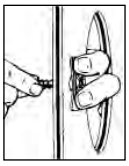
MONADNOCK CLIP NUTS

High strength Forged hex nuts suitable for structural and non-structural applications in metal, palstic and composite materials.

Size	Distance	Edge Tkns	Part Number	Price Ea.
6-32	.180-.120	.030-.051	04-00151	$2.25
8-32	.310-.500	.020-.090	04-00152	$0.92
10-32	.350-.500	.020-.090	04-00153	$1.15

HOW TO APPLY SPEED NUT FASTENERS

FLAT TYPE

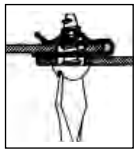


Fastener is positioned over screw clearance hole with screw-engaging prongs pointing up or outward. Screw is started into nut by hand from the underside.

Screw can be power-driven into locked position (when base arch of fastener is flat) or a hand screw driver can be used. No wrench is required, finger pressure will prevent it from turning

"U" TYPE

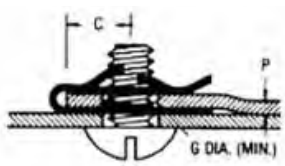
Push into position with thumb until extrusion on lower leg snaps into screw hole. The fastener "floats" in screw-receiving position to correct for normal misalignment in panel mounting holes.



Place second panel in position & drive screw. Access to opposite side is unnecessary. Flush mounting can be made by embossing either panel.

"U" TYPE (NAS 395)

Snaps over edge of panels or into center hole locations. Holds itself in place for blind assembly. "Floats" free for easy hole alignment.



Part Number	TypeB Scrw Size	Design Variation	P-panel Thickness Range	A Length	B Width	C-max. ctr. hole to edge	G-panel hole dia.	T-mat'l. Thkness	Price
A1784-6Z-1D	#6	E	.025-.051	0.61	0.44	0.281	0.250	0.025	$0.33
A1785-6Z-1D	#6	E	.025-.064	0.84	0.44	0.500	0.281	0.025	$0.36
A1789-8Z-1D	#8	E	.025-.051	0.61	0.44	0.281	0.250	0.028	$0.29
A1787-8Z-1D	#8	E	.025-.064	0.84	0.44	0.500	0.281	0.028	$0.31
A1788-8Z-1D	#8	A E	.025-.064	0.84	0.44	0.500	0.170	0.028	$0.26
A1348-8Z-1D	#8	A E	.025-.064	0.73	0.50	0.343	0.170	0.028	$0.47
A1786-8Z-1D	#8	C E H	.040-.051	0.53	0.50	0.218	0.250	0.028	$0.25
A178710Z-1D	#10	E	.025-.064	0.84	0.44	0.500	0.281	0.031	$0.35
A1758-10Z-1D	#10	E	.081-.094	0.62	0.44	0.281	0.281	0.031	$0.30

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

MS27039 & MS27039C MACHINE SCREWS

Pan head low alloy steel machine screws have 125,000 to 145,000 psi tensile strength with cadmium plate finish to QQ-P-416, Type 2, Class 3. MS27039C screws are stainless steel Manufactured to MIL-S-6050 or MIL-8695. Equivalent to NAS 220.

Part Number	Diam.-Thrd. Size	Length (In.)	MS27039 Price	MS27039C Price
MS27039-0804	8-32	9/32	$0.11	$0.38
MS27039-0805	8-32	11/32	$0.10	$0.48
MS27039-0806	8-32	13/32	$0.13	----
MS27039-0807	8-32	15/32	$0.13	----
MS27039-0808	8-32	17/32	$0.14	----
MS27039-0809	8-32	19/32	$0.15	----
MS27039-0810	8-32	21/32	$0.13	----
MS27039-0811	8-32	23/32	$0.15	$0.84
MS27039-0812	8-32	25/32	$0.18	----
MS27039-0813	8-32	27/32	$0.10	$0.65
MS27039-0814	8-32	29/32	$0.19	$0.73
MS27039-0815	8-32	31/32	$0.16	$0.99
MS27039-0816	8-32	1-1/32	$0.18	----
MS27039-0817	8-32	1-3/32	$0.19	$0.72
MS27039-0818	8-32	1-5/32	$0.26	----
MS27039-0819	8-32	1-7/32	$0.18	----
MS27039-0820	8-32	1-9/32	$0.26	----
MS27039-0821	8-32	1-11/32	$0.26	----
MS27039-0822	8-32	1-13/32	$0.22	----
MS27039-0823	8-32	1-15/32	$0.23	----
MS27039-0824	8-32	1-17/32	$0.23	----
MS27039-1-04	10-32	9/32	$0.15	$0.84
MS27039-1-05	10-32	11/32	$0.11	$0.57
MS27039-1-06	10-32	13/32	$0.10	$0.59
MS27039-1-07	10-32	15/32	$0.12	----
MS27039-1-08	10-32	17/32	$0.11	----
MS27039-1-09	10-32	19/32	$0.15	$0.57
MS27039-1-10	10-32	21/32	$0.13	$0.90
MS27039-1-11	10-32	23/32	$0.17	$0.79
MS27039-1-12	10-32	25/32	$0.13	----
MS27039-1-13	10-32	27/32	$0.15	$0.81
MS27039-1-14	10-32	29/32	$0.16	----
MS27039-1-15	10-32	31/32	$0.19	$0.98
MS27039-1-16	10-32	1-1/32	$0.17	----
MS27039-1-17	10-32	1-3/32	$0.19	$1.10
MS27039-1-18	10-32	1-5/32	$0.19	$1.31
MS27039-1-19	10-32	1-7/32	$0.21	$1.34
MS27039-1-20	10-32	19/32	$0.22	$1.36
MS27039-1-21	10-32	1-11/32	$0.21	$1.43
MS27039-1-22	10-32	1-13/32	$0.21	$1.50
MS27039-1-23	10-32	1-15/32	$0.39	$2.50
MS27039-1-24	10-32	1-17/32	$0.52	$1.90
MS27039-1-25	10-32	1-19/32	$0.53	----
MS27039-1-26	10-32	1-21/32	$0.42	----
MS27039-1-27	10-32	1-23/32	$0.43	----
MS27039-1-28	10-32	1-25/32	$0.43	----
MS27039-1-29	10-32	1-27/32	$0.78	----
MS27039-1-30	10-32	1-29/32	$0.44	----
MS27039-1-31	10-32	1-31/32	$0.48	----
MS27039-1-32	10-32	2-1/32	$0.53	----
MS27039-4-06	1/4-28	13/32	$0.17	$0.67
MS27039-4-07	1/4-28	15/32	$0.24	$1.20
MS27039-4-08	1/4-28	17/32	$0.21	$1.22
MS27039-4-09	1/4-28	19/32	$0.19	$1.39
MS27039-4-10	1/4-28	21/32	$0.19	$1.40
MS27039-4-11	1/4-28	23/32	$0.30	$1.14
MS27039-4-12	1/4-28	25/32	$0.27	$1.65
MS27039-4-13	1/4-28	27/32	$0.23	$1.10
MS27039-4-14	1/4-28	29/32	$0.32	$2.15
MS27039-4-15	1/4-28	31/32	$0.25	$1.50
MS27039-4-16	1/4-28	1-1/32	$0.33	$1.24
MS27039-4-17	1/4-28	1-3/32	$0.29	----
MS27039-4-18	1/4-28	1-5/32	$2.20	----
MS27039-4-19	1/4-28	1-7/32	$0.34	----
MS27039-4-20	1/4-28	1-9/32	$0.29	----
MS27039-4-21	1/4-28	1-11/32	$0.30	----
MS27039-4-22	1/4-28	1-13/32	$0.36	----
MS27039-4-23	1/4-28	1-15/32	$0.37	----
MS27039-4-24	1/4-28	1-17/32	$0.39	----

MS35190 MACHINE SCREWS (CROSS RECESSED)

82° flat head machine screws have 55,000psi minimum tensile strength and feature cadmium plate finish per QQ P-416, Type 2, Class 3. Manufactured from carbon steel to Federal Standard #66.

Part Number	Old AN505R	Diam.-Thrd. Size	Length (In.)	Price
MS35190-221	-4R4	4-40	1/4	$0.11
MS35190-222	-4R5	4-40	5/16	$0.18
MS35190-225	-4R8	4-40	1/2	$0.09
MS35190-226	-4R10	4-40	5/8	$0.08
MS35190-234	-6R4	6-32	1/4	$1.43
MS35190-236	-6R6	6-32	3/8	$0.07
MS35190-238	-6R8	6-32	1/2	$0.06
MS35190-239	-6R10	6-32	5/8	$0.08
MS35190-240	-6R12	6-32	3/4	$0.07
MS35190-250	-8R5	8-32	5/16	$0.08
MS35190-253	-8R8	8-32	1/2	$0.08
MS35190-254	-8R10	8-32	5/8	$0.09

MS35207 MACHINE SCREWS (CROSS RECESSED)

These pan head machine screws have 55,000 psi minimum tensile strength and are cadmium plated to Specification QQ-P-416, Type 2, Class 3. Manufactured from carbon steel per Federal Standard #66.

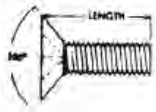
Part Number	Old AN520R	Diam.-Thrd. Size	Length (In.)	Price ea.
MS35207-260	-10R5	10-32	5/16	$0.08
MS35207-261	-10R6	10-32	3/8	$0.06
MS35207-262	-10R7	10-32	7/16	$0.06
MS35207-263	-10R8	10-32	1/2	$0.07
MS35207-264	-10R10	10-32	5/8	$0.08
MS35207-265	-10R12	10-32	3/4	$0.11
MS35207-266	-10R14	10-32	7/8	$0.11
MS35207-267	-10R16	10-32	1	$0.12
MS35207-268	-10R20	10-32	1-1/4	$0.09
MS35207-269	-10R24	10-32	1-1/2	$0.11
MS35207-270	-10R28	10-32	1-3/4	$0.18
MS35207-271	-10R32	10-32	2	$0.19

MS35206 MACHINE SCREWS (CROSS RECESSED)

These pan head machine screws feature 60,000 psi minimum tensile strength and are cadmium plated to specification QQ-P-416, Type 2, Class 3. Manufactured from carbon steel to Federal Standard #66, these screws can be used as replacements for AN526 machine screws. Phillips head.

Part Number	Old AN515R	Diam.-Thrd. Size	Length (In.)	Price ea.
MS35206-203	-2R2	2-56	1/4	$0.04
MS35206-204	-2R5	2-56	5/16	$0.06
MS35206-205	-2R6	2-56	3/8	$0.04
MS35206-206	-2R7	2-56	7/16	$0.05
MS35206-207	-2R8	2-56	1/2	$0.05
MS35206-208	-2R10	2-56	5/8	$0.05
MS35206-209	-2R12	2-56	3/4	$0.06
MS35206-212	-4R3	4-40	3/16	$0.03
MS35206-213	-4R4	4-40	1/4	--
MS35206-214	-4R5	4-40	5/16	$0.04
MS35206-215	-4R6	4-40	3/8	$0.04
MS35206-216	-4R7	4-40	7/16	$0.05
MS35206-217	-4R8	4-40	1/2	$0.04
MS35206-218	-4R10	4-40	5/8	$0.07
MS35206-219	-4R12	4-40	3/4	$0.06
MS35206-220	-4R14	4-40	7/8	$0.05
MS35206-221	-4R16	4-40	1	$0.06
MS35206-222	-4R20	4-40	1-1/4	$0.17
MS35206-223	-4R24	4-40	1-1/2	$0.09
MS35206-226	-6R4	6-32	1/4	$0.05
MS35206-227	-6R5	6-32	5/16	$0.05
MS35206-228	-6R6	6-32	3/8	$0.05
MS35206-229	-6R7	6-32	7/16	$0.05
MS35206-230	-6R8	6-32	1/2	$0.05
MS35206-231	-6R10	6-32	5/8	$0.06
MS35206-232	-6R12	6-32	3/4	$0.06
MS35206-233	-6R14	6-32	7/8	$0.06
MS35206-234	-6R16	6-32	1	$0.06
MS35206-235	-6R20	6-32	1-1/4	$0.07
MS35206-236	-6R24	6-32	1-1/2	$0.12
MS35206-238	-6R32	6-32	2	$0.19
MS35206-241	-8R4	8-32	1/4	$0.05
MS35206-242	-8R5	8-32	5/16	$0.04
MS35206-243	-8R6	8-32	3/8	$0.05
MS35206-244	-8R7	8-32	7/16	$0.06
MS35206-245	-8R8	8-32	1/2	$0.06
MS35206-246	-8R10	8-32	5/8	$0.08
MS35206-247	-8R12	8-32	3/4	$0.07
MS35206-248	-8R14	8-32	7/8	$0.08
MS35206-249	-8R16	8-32	1	$0.10
MS35206-250	-8R20	8-32	1-1/4	$0.13
MS35206-251	-8R24	8-32	1-1/2	$0.14
MS35206-252	-8R28	8-32	1-3/4	$0.13
MS35206-253	-8R32	8-32	2	$0.29
MS35206-261	-10R6	10-24	3/8	$0.07
MS35206-262	-10R7	10-24	7/16	$0.08
MS35206-263	-10R8	10-24	1/2	$0.06
MS35206-264	-10R10	10-24	5/8	$0.07
MS35206-265	-10R12	10-24	3/4	$0.09
MS35206-267	-10R16	10-24	1	$0.13

MS24693 & MS24693C MACHINE SCREWS



(FORMERLY AN 507)

These non-structural screws have a 100° countersunk flat head. Cadmium plated, Type 2, Class 3. Tensile strength 55,000 PSI. For both CAD plated and Stainless MS24693C are stainless steel.

Thread	Length	MS24693 Cad Plated P/N	Price Each	MS24693C Stainless P/N	Price Each
4-40	3/8	MS24693S4	$0.04	MS24693C4	$0.04
	7/16	MS24693S5	$0.04	---	---
	1/2	MS24693S6	$0.05	MS24693C6	$0.04
	5/8	MS24693S7	---	MS24693C7	$0.06
	1	MS24693S10	$0.07	MS24693C10	$0.07
2-56	5/32	MS24693-S17	$0.57	---	---
6-32	1/4	MS24693S24	$0.05	MS24693C24	$0.04
	3/8	MS24693S26	$0.05	MS24693C26	$0.06
	7/16	MS24693S27	---	MS24693C27	$0.05
	1/2	MS24693S28	$0.06	MS24693C28	$0.06
	5/8	MS24693S29	$0.05	MS24693C29	---
	3/4	MS24693S30	$0.06	MS24693C30	$0.08
	1	MS24693S32	$0.07	MS24693C32	$0.08
	1-1/2	MS24693-S36	$0.15	---	---
8-32	1/4	MS24693S46	$0.06	MS24693C46	$0.09
	3/8	MS24693S48	$0.06	MS24693C48	$0.09
	7/16	MS24693S49	---	MS24693C49	$0.09
	1/2	MS24693S50	$0.07	MS24693C50	$0.09
	5/8	MS24693S51	$0.06	MS24693C51	$0.09
	3/4	MS24693S52	$0.05	MS24693C52	$0.10
	1	MS24693S54	$0.09	MS24693C54	$0.13
	1-1/4	MS24693S56	---	MS24693C56	$0.17
10-32	1/4	MS24693S268	$0.08	MS24693C268	$0.15
	3/8	MS24693S270	$0.07	MS24693C270	$0.09
	7/16	MS24693S271	---	MS24693C271	$0.10
	1/2	MS24693S272	$0.11	MS24693C272	$0.12
	5/8	MS24693S273	$0.09	MS24693C273	$0.14
	3/4	MS24693S274	$0.11	MS24693C274	$0.14
	1	MS24693S276	$0.14	MS24693C276	$0.18
	1-1/4	MS24693S278	---	MS24693C278	$0.22
1/4-28	3/8	MS24693-S286	$0.40	-----	---
	7/16	-----	---	MS24693C293	$0.26
	1/2	MS24693S294	---	MS24693C294	$0.27
	5/8	MS24693S295	---	MS24693C295	$0.24
	1	-----	---	MS24693C298	$0.39

AN525 WASHER HEAD SCREWS

High-strength machine screws fabricated from alloy steel per specification AMS6300. Tensile strength 125,000 PSI. Cadmium plated per QQ-P-416, Type II, Class 3. Cross-recessed head.

Dash No.	Length in.	Grip in.	Thread Size	Price
AN525-832R5	5/16	--	8-32	$0.09
AN525-832R6	3/8	1/32	8-32	$0.10
AN525-832R7	7/16	1/16	8-32	$0.12
AN525-832R8	1/2	1/8	8-32	$0.13
AN525-832R9	9/16	5/32	8-32	$0.17
AN525-832R10	5/8	7/32	8-32	$0.16
AN525-832R11	11/16	9/32	8-32	$0.12
AN525-832R12	3/4	11/32	8-32	$0.13
AN525-832R14	7/8	15/32	8-32	$0.20
AN525-832R16	1	19/32	8-32	$0.14
AN525-832R18	1-1/8	23/32	8-32	$0.26
AN525-832R20	1-1/4	27/32	8-32	$0.24
AN525-832R22	1-3/8	31/32	8-32	$0.23
AN525-832R24	1-1/2	1-3/32	8-32	$0.35
AN525-8R9	9/16	5/32	8/36	$0.17
AN525-10R4	1/4	--	10-32	$0.10
AN525-10R5	5/16	--	10-32	$0.13
AN525-10R6	3/8	1/32	10-32	$0.12
AN525-10R7	7/16	1/16	10-32	$0.12
AN525-10R8	1/2	1/8	10-32	$0.12
AN525-10R9	9/16	5/32	10-32	$0.15
AN525-10-9 (Slotted)	9/16	5/32	10-32	$0.17
AN525-10R10	5/8	7/32	10-32	$0.16
AN525-10R11	11/16	9/32	10-32	$0.16
AN525-10R12	3/4	11/32	10-32	$0.15
AN525-10R14	7/8	15/32	10-32	$0.23
AN525-10R16	1	19/32	10-32	$0.19
AN525-10R18	1-1/8	23/32	10-32	$0.34
AN525-10R20	1-1/4	27/32	10-32	$0.23
AN525-10R22	1-3/8	31/32	10-32	$0.28
AN525-10R24	1-1/2	1-3/32	10-32	$0.29
AN525-416R6	3/8	1/32	1/4-28	$0.58
AN525-416R7	7/16	1/16	1/4-28	$0.52
AN525-416R8	1/2	1/8	1/4-28	$0.54
AN525-416R9	9/16	5/32	1/4-28	$0.54
AN525-416R10	5/8	7/32	1/4-28	$0.49
AN525-416R12	3/4	11/32	1/4-28	$0.56
AN525-416R14	7/8	15/32	1/4-28	$0.76
AN525-416R16	1	19/32	1/4-28	$0.63
AN525-416R18	1-1/8	23/32	1/4-28	$1.39
AN525-416R20	1-1/4	27/32	1/4-28	$1.43

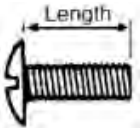
AN526 MACHINE SCREWS

Truss-head non-structural machine screws made of carbon steel, cadmium plated. Minimum tensile strength 55,000 PSI. Available in slot head or Phillips recessed head.

Thread	Length	Phillips Part No.	Price Ea.	Slotted Part No.	Price Ea.
4-40	1/2	AN526-440R8	$0.06	-----	---
	1	AN526-440R16	-----	-----	---
6-32	1/4	AN526-632R4	$0.04	-----	---
	5/16	AN526-632R5	$0.04	-----	---
	3/8	AN526-632R6	$0.04	AN526-632-6	$0.14
	7/16	AN526-632R7	$0.06	-----	---
	1/2	AN526-632R8	$0.06	AN526-632-8	$0.11
	9/16	AN526-632R9	$0.06	-----	---
	5/8	AN526-632R10	$0.06	AN526-632-10	$0.54
	3/4	AN526-632R12	$0.06	AN526-632-12	$0.10
	7/8	AN526-632R14	$0.05	-----	---
	1	AN526-632R16	$0.06	-----	---
	1-1/2	AN526-632-R24	$0.17	-----	---
8-32	1/4	AN526-832R4	$0.07	-----	---
	5/16	AN526-832R5	$0.07	-----	---
	3/8	AN526-832R6	$0.07	-----	---
	7/16	AN526-832R7	$0.07	-----	---
	1/2	AN526-832R8	$0.07	AN526-832-8	$0.46
	9/16	AN526-832R9	$0.08	-----	---
	5/8	AN526-832R10	$0.06	---	---
	3/4	AN526-832R12	$0.08	AN526-832-12	$0.24
	7/8	AN526-832R14	$0.09	-----	---
	1	AN526-832R16	$0.09	AN526-832-16	$0.19
10/32	1/4	AN526-1032R4	$0.11	-----	---
	5/16	AN526-1032R5	$0.07	-----	---
	3/8	AN526-1032R6	$0.08	-----	---
	7/16	AN526-1032R7	$0.07	-----	---
	1/2	AN526-1032R8	$0.09	-----	---
	9/16	AN526-1032R9	$0.09	-----	---
	5/8	AN526-1032R10	$0.09	AN526-1032-10	$0.16
	3/4	AN526-1032R12	$0.11	AN526-1032-12	$0.13
	7/8	AN526-1032R14	$0.12	AN526-1032-14	---
	1	AN526-1032R16	$0.13	-----	---
	1-1/8	AN526-1032R18	$0.13	-----	---
	1-1/4	AN526-1032R20	$0.16	-----	---
	1-1/2	AN526-1032R24	$0.19	-----	---
	1-3/4	AN526-1032R28	$0.28	-----	---
	2	AN526-1032R32	$0.52	-----	---

AN526C STAINLESS STEEL MACHINE SCREWS

Stainless steel Phillips and slotted, Use slotted screws for antiques.



Thread	Length	Phillips Part No.	Price Ea.	Slotted Part No.	Price Ea.
4-40	1/2	AN526C-440R8	$0.08	-----	---
6-32	1/4	AN526C-632R4	$0.07	AN526C-632-4	$0.26
	3/8	AN526C-632R6	$0.07	-----	---
	1/2	AN526C-632R8	$0.06	AN526C-632-8	$0.20
	5/8	AN526C-632R10	$0.08	AN526C-632-10	$0.30
	3/4	AN526C-632R12	$0.07		
	1	AN526C-632R16	$0.09	AN526C-632-16	$0.29
8-32	1/4	AN526C-832R4	$0.14	-----	---
	3/8	AN526C-832R6	$0.08	-----	---
	1/2	AN526C-832R8	$0.08	AN526C-832-8	$0.16
	5/8	AN526C-832R10	$0.09	AN526C-832-10	$0.20
	3/4	AN526C-832R12	$0.10	AN526C-832-12	$0.34
	1	AN526C-832R16	$0.14	AN526C-832-16	$0.20
10-32	1/4	AN526C-1032R4	$0.38	-----	---
	3/8	AN526C-1032R6	$0.11	AN526C-1032-6	$0.21
	1/2	AN526C-1032R8	$0.13	AN526C-1032-8	$0.24
	5/8	AN526C-1032R10	$0.15	AN526C-1032-10	$0.20
	3/4	AN526C-1032R12	$0.16	AN526C-1032-12	---
	1	AN526C-1032R16	$0.16	-----	---
	1-1/4	AN526C-1032R20	-----	-----	---
	1-1/2	AN526C-1032R24	$0.24	-----	---
1/4-20	1/2	AN526C-420R8	$1.19	-----	---
1/4-28	1/2	AN526C-428R8	$0.28	-----	---
	3/4	AN526C-428R12	$0.42	-----	---
	1-1/8	-----	---	AN526C-428-18	$0.69

Note: Some sizes of AN526C screws are furnished as commercial equipment as AN screws are no longer available.

MS24694 MACHINE SCREWS (FORMERLY AN509)

These structural screws have a 100° countersunk head. Cadmium plated per QQ-P-416, Type II, Class 3. Minimum tensile strength for steel is 125,000 PSI.

MS24694 Dash No.	AN509 Dash No.	Length In.	Grip In.	Thread Size	Price Each
-S1	-8R4	9/32	3/32	8-32	$0.12
-S2	-8R5	11/32		8-32	$0.13
-S3	-8R6	13/32		8-32	$0.12
-S4	-8R7	15/32		8-32	$0.12
-S5	-8R8	17/32		8-32	$0.11
-S7	-8R10	21/32	7/32	8-32	$0.11
-S8	-8R11	23/32	9/32	8-23	---
-S9	-8R12	25/32	11/32	8-32	$0.14
-S10	-8R13	27/32	13/32	8-32	---
-S11	-8R14	29/32	15/32	8-32	$0.14
-S12	-8R15	31/32	17/32	8-32	---
-S13	-8R16	1-1/32	19/32	8-32	$0.18
-S14	-8R17	1-1/32	21/32	8-32	---
-S15	-8R18	1-5/32	23/32	8-32	$0.21
-S16	-8R19	1-7/32	25/32	8-32	---
-S17	-8R20	1-9/32	27/32	8-32	$0.21
-S18	-8R21	1-11/32	29/32	8-32	$0.28
-S19	-8R22	1-13/32	31/32	8-32	$0.20
-S20	-8R23	1-15/32	1-1/32	8-32	---
-S21	-8R24	1-17/32	1-3/32	8-32	$0.20
-S28	-8R31	1-31/32	1-17/32	8-32	$1.95
-S29	-8R32	2-1/32	1-19/32	8-32	$0.82
-S31	-8R34	2-5/32	1-23/32	8-32	$1.36
-S46	-10R4	9/32	7/64	10-32	---
-S47	-10R5	11/32		10-32	---
-S48	-10R6	13/32		10-32	$0.13
-S49	-10R7	15/32		10-32	$0.14
-S50	-10R8	17/32		10-32	$0.14
-S51	-10R9	19/32		10-32	$0.13
-S52	-10R10	21/32	3/16	10-32	$0.12
-S53	-10R11	23/32	1/4	10-32	$0.16
-S54	-10R12	25/32	5/16	10-32	$0.15
-S55	-10R13	27/32	3/8	10-32	$0.16
-S56	-10R14	29/32	7/16	10-32	$0.16
-S57	-10R15	31/32	1/2	10-32	---
-S58	-10R16	1-1/32	9/16	10-32	$0.15
-S59	-10R17	1-3/32	5/8	10-32	$0.22
-S60	-10R18	1-5/32	11/16	10-32	$0.18
-S61	-10R19	1-7/32	3/4	10-32	---
-S62	-10R20	1-9/32	13/16	10-32	$0.26
-S63	-10R21	1-11/32	7/8	10-32	---
-S64	-10R22	1-13/32	15/16	10-32	$0.21

MS24694 Dash No.	AN509 Dash No.	Length In.	Grip In.	Thread Size	Price Each
-S65	-10R23	1-15/32	1	10-32	$0.33
-S66	-10R24	1-17/32	1-1/16	10-32	$0.23
-S67	-10R25	1-19/32	1-1/8	10-32	---
-S68	-10R26	1-21/32	1-3/16	10-32	---
-S69	-10R27	1-23/32	1-1/4	10-32	---
-S70	-10R28	1-25/32	1-5/16	10-32	$0.26
-S71	-10R29	1-27/32	1-3/8	10-32	---
-S72	-10R30	1-29/32	1-7/16	10-32	$0.44
-S74	-10R32	2-1/32	1-9/16	10-32	$0.34
-S75	-10R33	2-3/32	1-5/8	10-32	$1.12
-S76	-10R34	2-5/32	1-11/16	10-32	$0.74
-S77	-10R35	2-7/32	1-3/4	10-32	$0.94
-S79	-10R37	2-11/32	1-7/8	10-32	$0.72
-S82	-10R40	2-17/32	2-1/16	10-32	$0.63
-S84	-10R42	2-21/32	2-3/16	10-32	$0.30
-S88	-10R46	2-29/32	2-7/16	10-32	$2.64
-S90	-10R48	3-1/32	2-9/16	10-32	$0.54
-S93	-416R6	13/32	9/64	1/4-28	---
-S94	-416R7	15/32		1/4-28	---
-S95	-416R8	17/32		1/4-28	---
-S96	-416R9	19/32		1/4-28	---
-S97	-416R10	21/32		1/4-28	$0.19
-S98	-416R11	23/32	3-16	1/4-28	---
-S99	-416R12	25/32	1/4	1/4-28	$0.22
-S100	-416R13	27/32	5/16	1/4-28	$0.22
-S101	-416R14	29/32	3/8	1/4-28	$0.29
-S102	-416R15	31/32	7/16	1/4-28	$0.28
-S103	-416R16	1-1/32	1/2	1/4-28	$0.25
-S104	-416R17	1-3/32	9/16	1/4-28	$0.25
-S105	-416R18	1-5/32	5/8	1/4-28	$0.27
-S106	-416R19	1-7/32	11/16	1/4-28	$0.26
-S107	-416R20	1-9/32	3/4	1/4-28	---
-S108	-416R21	1-11/32	13/16	1/4-28	---
-S109	-416R22	1-13/32	7/8	1/4-28	$0.34
-S110	-416R23	1-15/32	15/16	1/4-28	$0.32
-S111	-416R24	1-17/32	1	1/4-28	$0.29
-S113	-416R26	1-21/32	1-1/8	1/4-28	$0.46
-S115	-416R28	1-25/32	1-1/4	1/4-28	$0.49
-S119	-416R32	2-1/32	1-1/2	1/4-28	$0.72
-S121	-416R34	2-5/32	1-5/8	1/4-28	$1.19
-S123	-416R36	2-9/32	1-3/4	1/4-28	$1.83
-S148	-516R16	1-1/32	15/32	5/16-24	---
-S178	-516R46	2-29/32	2-11/32	5/16-24	$1.46

MS24694C STAINLESS STEEL MACHINE SCREWS

Same style screws as MS24694, except stainless steel. Phillips head. (Formerly AN509C) Minimum tensile strength for stainless steel is 85,000 PSI.

MS Part No.	AN509C No.	Thread Size	Length Inches	Price ea.
MS24694C1	-8R4	8-32	9/32	$0.11
MS24694C2	-8R5	8-32	11/32	$0.12
MS24694C3	-8R6	8-32	13/32	$0.17
MS24694C4	-8R7	8-32	15/32	$0.14
MS24694C5	-8R8	8-32	17/32	$0.11
MS24694C6	-8R9	8-32	19/32	$0.12
MS24694C7	-8R10	8-32	21/32	$0.17
MS24694C8	-8R11	8-32	23/32	$0.19
MS24694C9	-8R12	8-32	25/32	$0.17
MS24694C10	-8R13	8-32	27/32	$0.17
MS24694C11	-8R14	8-32	29/32	$0.29
MS24694C13	-8R16	8-32	1-1/32	$0.32
MS24694C14	-8R17	8-32	1-3/32	$0.59
MS24694C15	-8R18	8-32	1-5/32	$1.78
MS24694C46	-10R4	10-32	9/32	$0.17
MS24694C47	-10R5	10-32	11/32	$0.14
MS24694C48	-10R6	10-32	13/32	$0.17

MS Part No.	AN509C No.	Thread Size	Length Inches	Price ea.
MS24694C49	-10R7	10-32	15/32	$0.16
MS24694C50	-10R8	10-32	17/32	$0.18
MS24694C51	-10R9	10-32	19/32	$0.17
MS24694C52	-10R10	10-32	21/32	$0.18
MS24694C53	-10R11	10-32	23/32	$0.22
MS24694C54	-10R12	10-32	25/32	$0.23
MS24694C55	-10R13	10-32	27/32	$0.23
MS24694C56	-10R14	10-32	29/32	$0.24
MS24694C57	-10R15	10-32	31/32	$0.41
MS24694C58	-10R16	10-32	1-1/32	$0.28
MS24694C59	-10R17	10-32	1-3/32	$0.36
MS24694C60	-10R18	10-32	1-5/32	$0.39
MS24694C61	-10R19	10-32	1-7/32	$0.39
MS24694C62	-10R20	10-32	1-9/32	$0.34
MS24694C92		1/4-28	3/8	$0.43

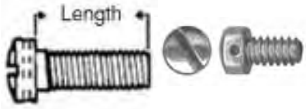
NAS387 SERIES MACHINE SCREWS

Type: NAS387. Material: Carbon Steel Type 1016 - 1024. Finish: Nickel Plate

Thread	Length	Part No.	Price
6-32	3/8	NAS387-632-6P	$0.16
	7/16	NAS387-632-7P	$0.10
	1/2	NAS387-632-8P	$0.10
	5/8	NAS387-632-10P	$0.16
	3/4	NAS387-632-12P	$0.16
8-32	1/2	NAS387-832-8P	$0.20
	5/8	NAS387-832-10P	$0.20
	3/4	NAS387-832-12P	$0.24
	7/8	NAS387-832-14P	$0.30

Thread	Length	Part No.	Price
10-32	1/2	NAS387-1032-8P	$0.30
	5/8	NAS387-1032-10P	$0.20
	3/4	NAS387-1032-12P	$0.26
	7/8	NAS387-1032-14P	$0.30
	1	NAS387-1032-16P	$0.30
	1-1/8	NAS387-1032-18P	---
	1-1/4	NAS387-1032-20P	$0.29
	1/12	NAS387-1032-24P	$0.30

FILLISTER HEAD SCREWS - DRIVE SCREWS



AN500, AN501 DRILLED FILLISTER HEADSCREWS

AN500 (coarse thread) & AN501 (fine thread) slotted fillister head screws are fabricated from carbon steel. Tensile strength 60,000 PSI. Cadmium plated,Type II Class 3.
If there is an "A" after the dash, the part is cadmium plated, Type II, Class 3, with a drilled head. If there isn't an "A" after the dash, the part is Cadmium plated, Type I.

AN500				
AN500 Dash No.*	MS35265 Dash No.	Length (In.)	Thread Size	Price Each
-A4-3	MS35265-12	3/16	4-40	$0.20
-A4-4	MS35265-13	1/4	4-40	$0.25
-A4-5	MS35265-14	5/16	4-40	$0.27
-A4-6	MS35265-15	1/4	4-40	$0.36
-A4-7	MS35265-16	5/16	4-40	$0.23
-A4-8	MS35265-17	1/4	4-40	$0.26
-A4-10	MS35265-18	5/16	4-40	$0.24
-A4-12	MS35265-19	1/4	4-40	$0.24
-A6-4	MS35265-26	1/4	6-32	$0.43
-A6-5	MS35265-27	5/16	6-32	$0.53
-A6-6	MS35265-28	3/8	6-32	$0.19
-A6-7	MS35265-29	7/16	6-32	$0.24
-A6-8	MS35265-30	1/2	6-32	$0.20
-A6-10	MS35265-31	5/8	6-32	$0.24
-A6-12	MS35265-32	3/4	6-32	$0.22
-A6-14	MS35265-33	7/8	6-32	$0.28
-A8-4	MS35265-41	1/4	8-32	$0.31
-A8-5	MS35265-42	5/16	8-32	$0.58
-A8-6	MS35265-43	3/8	8-32	$0.19
-A8-7	MS35265-44	7/16	8-32	$0.24
-A8-8	MS35265-45	1/2	8-32	$0.21
-A8-10	MS35265-46	5/8	8-32	$0.22
-A8-12	MS35265-47	3/4	8-32	$0.21
-A8-14	MS35265-48	7/8	8-32	$0.23
-A8-16	MS35265-49	1	8-32	$0.60
-A10-4	MS35265-59	1/4	10-24	$0.53
-A10-5	MS35265-60	5/16	10-24	$0.83
-A10-6	MS35265-61	3/8	10-24	$0.31
-A10-7	MS35265-62	7/16	10-24	$0.27
-A10-8	MS35265-63	1/2	10-24	$0.29
-A10-10	MS35265-64	5/8	10-24	$0.27
-A10-12	MS35265-65	3/4	10-24	$0.25
-A10-16	MS35265-66	1	10-24	$1.28
-A416-8	MS35265-79	1/2	1/4-20	$0.96
-A416-10	MS35265-80	5/8	1/4-20	$0.69
-416-12	MS35265-81	3/4	1/4-20	$0.42
AN501				
AN501 Dash No.*	MS35266 Dash No.	Length (In.)	Thread Size	Price Each
-8-12	-47	3/4	8-36	---
-A10-4	-59	1/4	10-32	$0.40
-A10-6	-61	3/8	10-32	$0.65
-A10-8	-63	1/2	10-32	$0.28
-A10-10	-64	5/8	10-32	$0.25
-A10-12	-65	3/4	10-32	$0.25
-A10-14	-66	7/8	10-32	$0.27
-A10-16	-67	1	10-32	$0.29
-A10-20	-68	1-1/4	10-32	$0.33

AN500AD Stainless Steel				
AN500 Dash No.*	MS35275 Dash No.	Length (In.)	Thread Size	Price Each
-AD2-2	-201	1/8	2/56	$0.60
-AD2-3	-202	3/16	2/56	$0.29
-AD2-4	-203	1/4	2/56	$0.29
-AD2-5	-204	5/16	2/56	$0.33
-AD2-6	-205	3/8	2/56	$0.34
-AD2-7	-206	7/16	2/56	$0.54
-AD2-8	-207	1/2	2/56	$0.35
-AD2-10	-208	5/8	2/56	$0.29
-AD2-12	-209	3/4	2/56	$0.38
-AD4-2	-211	1/8	4-40	$0.73
-AD4-3	-212	3/16	4-40	$0.30
-AD4-4	-213	1/4	4-40	$0.31
-AD4-6	-215	3/8	4-40	$0.33
-AD4-7	-216	7/16	4-40	$0.32
-AD4-8	-217	1/2	4-40	$0.26
-AD4-10	-218	5/8	4-40	$0.43
-AD4-12	-219	3/4	4-40	$0.33
-AD4-14	-220	7/8	4-40	$0.33
-AD4-16	-221	1	4-40	$0.35
-AD6-4	-226	1/4	6-32	$0.29
-AD6-5	-227	5/16	6-32	$0.25
-AD6-6	-228	3/8	6-32	$0.29
-AD6-7	-229	7/16	6-32	$0.30
-AD6-8	-230	1/2	6-32	$0.25
-AD6-10	-231	5/8	6-32	$0.32
-AD6-12	-232	3/4	6-32	$0.33
-AD6-14	-233	7/8	6-32	$0.39
-AD6-16	-234	1	6-32	$0.36
-AD8-5	-242	5/16	8-32	$0.33
-AD8-6	-243	3/8	8-32	$0.27
-AD8-7	-244	7/16	8-32	$0.34
-AD8-8	-245	1/2	8-32	$0.34
-AD8-10	-246	5/8	8-32	$0.34
-AD8-12	-247	3/4	8-32	$0.35
-AD8-14	-248	7/8	8-32	$0.35
-AD8-16	-249	1	8-32	$0.45
AN501AD Stainless Steel				
AN501 Dash No.*	MS35276 Dash No.	Length (In.)	Thread Size	Price Each
-AD10-5	-260	5/16	10-32	$0.48
-AD10-6	-261	3/8	10-32	$0.48
-AD10-7	-262	7/16	10-32	$0.33
-AD10-8	-263	1/2	10-32	$0.38
-AD10-10	-264	5/8	10-32	$0.42
-AD10-12	-265	3/4	10-32	$0.44
-AD10-14	-266	7/8	10-32	$0.55
-AD10-16	-267	1	10-32	$0.57

AN502, AN503 FILLISTER HEAD SCREWS

AN502 (fine thread) and AN503 (coarse thread) drilled head, slotted fillister head screws are fabricated from steel meeting specification MIL-S-6050. Tensile strength 125,000 PSI. Cadmium plated, Type I, Class 3.

AN502

AN502 Dash No.*	Length (In.)	Thread Size	Price Each	AN502 Dash No.*	Length (In.)	Thread Size	Price Each
-10 -5	5/16	10-32	$0.58	-10 -12	3/4	10-32	$0.40
-10 -6	3/8	10-32	$0.27	-10 -16	1	10-32	$0.46
-10 -8	1/2	10-32	$0.41	-416 -12	3/4	1/4-28	$0.70
-10 -10	5/8	10-32	$0.37	-416 -16	1	1/4-28	$1.61

AN503

AN503 Dash No.*	Length (In.)	Thread Size	Price Each	AN503 Dash No.*	Length (In.)	Thread Size	Price Each
-6 -4	1/4	6-32	$0.44	-10 -6	3/8	10-24	$0.44
-6 -6	3/8	6-32	$0.26	-10 -8	1/2	10-24	$0.43
-8 -4	1/4	8-32	$0.26	-10 -10	5/8	10-24	$0.47
-8 -6	3/8	8-32	$0.26	-10 -12	3/4	10-24	$0.39
-8 -8	1/2	8-32	$0.39	-10-16	1	10-24	$0.66
-8 -10	5/8	8-32	$0.35	-10 -24	1-1/2	10-24	$0.61
-8 -16	1	8-32	$0.42	-416 -8	1/2	1/4-20	$0.63
				-416 -10	5/8	1/4-20	$0.77
				-416 -12	3/4	1/4-20	$0.92

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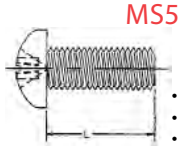
Prices Subject to Change Without Notice

MS51957 / MS51958 STAINLESS MACHINE SCREWS



- Phillips Pan Head
- 300 Series Stainless Steel
- Finish - Passivate per QQ-P-35

Thread	Length	Phillips Part No.	Price Each
2-56	.188	MS51957-2	$0.03
	.250	MS51957-3	$0.05
	.312	MS51957-4	$0.04
	.375	MS51957-5	$0.04
	.438	MS51957-6	$0.06
	.500	MS51957-7	$0.07
	.750	MS51957-9	$0.07
	.875	MS51957-10	$0.08
4-40	.188	MS51957-12	$0.05
	.250	MS51957-13	$0.05
	.312	MS51957-14	$0.06
	.375	MS51957-15	$0.05
	.438	MS51957-16	$0.06
	.500	MS51957-17	$0.05
	.625	MS51957-18	$0.06
	.750	MS51957-19	$0.08
	.875	MS51957-20	$0.11
	1.00	MS51957-21	$0.07
6-32	.188	MS51957-25	$0.06
	.250	MS51957-26	$0.06
	.312	MS51957-27	$0.06
	.375	MS51957-28	$0.05
	.438	MS51957-29	$0.07
6-32	.500	MS51957-30	$0.06
	.625	MS51957-31	$0.08
	.750	MS51957-32	$0.09
	.875	MS51957-33	$0.10
	1.00	MS51957-34	$0.10
8-32	.250	MS51957-41	$0.09
	.312	MS51957-42	$0.09
	.375	MS51957-43	$0.09
	.438	MS51957-44	$0.08
	.500	MS51957-45	$0.11
	.625	MS51957-46	$0.10
	.750	MS51957-47	$0.11
	.875	MS51957-48	$0.10
	1.00	MS51957-49	$0.14
10-32	.312	MS51958-60	$0.12
	.375	MS51958-61	$0.14
	.438	MS51958-62	$0.16
	.500	MS51958-63	$0.13
	.625	MS51958-64	$0.15
	.750	MS51958-65	$0.18
	.875	MS51958-66	$0.16
	1.00	MS51958-67	$0.19
	1.25	ms51958-68	$0.19

SNAP BUSHINGS

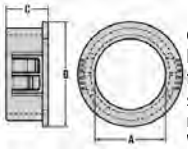
Fingertip Assembly

Ideal for abrasion and cutting protection of wiring, antenna leads, tubing, cables, etc. that are routed through bulkheads, ribs and other internal aircraft structures. Made of hard black nylon. Drill a hole about 1/8" larger than bushing I.D. and insert bushing. Spring-like fingers snap out to hold it in place. Special sizes on request with 100 piece minimum. *For .062" max. bulkhead thickness. All others for .125" max. bulkhead thickness.

Mounting Part No.	Hole Dia.	Bushing I.D.	Price Ea.	Mounting Part No.	Hole Dia.	Bushing I.D.	Price Ea.
04-05700*	.250	1/8"	$0.08	04-05753	.500	3/8	$0.11
04-05710*	.312	3/16"	$0.12	04-05775	.625	1/4"	$0.26
04-05730	.375	1/4"	$0.09	04-05773	.625	1/2"	$0.13
04-05738	.437	1/4"	$0.16	04-05790	.750	3/8"	$0.22
04-05758	.500	1/4"	$0.16	04-05793	.750	9/16"	$0.17

*For .062" max. bulkhead thickness. All others for .125" max. bulkhead thickness. Less 15% Discount on 100 pieces per size.

SNAP BUSHINGS



Converts raw-edged holes to smooth, neat, insulated holes. Locking fingers "snap" into holes with fingertip pressure. Locking finger steps are designed at fractional increments to accommodate a range of panel thicknesses up to .250" (6,4 mm). Withstands a push back force of 35 pounds.

Panel Dimensions				P/N	UL/CSA Designation	Part Dimensions					
Maximum Thkness		Mounting Hole Dia.		Color		A Inside Diameter		B Head Diameter		C Overall Height	
in.	mm.	in.	mm.	Black		in.	mm.	in.	mm.	in.	mm.
.125	3,2	1.093 - 1.125	27, 8-28 ,6	2163	SB1093 - 14	.875	22,2	1.218	30,9	.453	11,5
.125	3,2	1.093 - 1.125	27, 8-28 ,6	2166	SB1093 -15	.937	23,8	1.218	30,9	.453	11,5

Model 2163..... P/N 04-01985 ..... $0.33
Model 2166..... P/N 04-01986 ..... $0.56

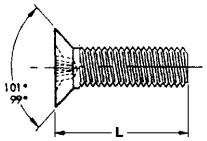
AN535 DRIVE SCREWS

Hardened steel screws to make permanent fastenings to ferrous and non-ferrous castings, heavy gauge steel, plastics, etc. Cadmiumplated. Spec. MS21318

AN535 Dash #	MS21318 Dash #	Dia. In.	Length In.	Sugg. Drill Size	Price Each
-00-4	-3	.060	1/4	#55 (.052")	$0.23
-0-4	-9	.075	1/4	#51 (.067")	$0.06
-2-3	-14	.100	3/16	#44 (.086")	$0.06
-2-4	-15	.100	1/4	#44 (.086")	$0.06
-4-4	-21	.116	1/4	#37 (.104")	$0.06
-00-2	-1	.060	1/8	#55 (.052")	$0.05
-00-3	-2	.060	3/16	#55 (.052")	$0.06
-0-2	-7	.075	1/8	#51 (.067")	$0.06
-0-3	-8	.075	3/16	#51 (.067")	$0.06
-2-2	-13	.100	1/8	#44 (.086")	$0.06
-4-3	-20	.116	3/16	#37 (.104")	$0.07
-4-5	-22	.116	5/16	#37 (.104")	$0.07

NAS514 MACHINE SCREWS

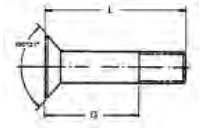
- Phillips 100° Flat Head
- Fully Threaded
- Alloy Steel (8740)
- Finish - Cadmium per QQ-P-416 Type II
- Tensile -125,000 145,000 PSI



Thrd.	Length	Phillips Part No.	Price Ea.
4-40	.250	NAS514P440-4P	$0.07
	.312	NAS514P440-5P	$0.08
	.375	NAS514P440-6P	$0.08
	.438	NAS514P440-7P	$0.08
	.500	NAS514P440-8P	$0.08
	.625	NAS514P440-10P	$0.08
	.750	NAS514P440-12P	$0.08
6-32	.188	NAS514P632-3P	$0.13
	.250	NAS514P632-4P	$0.08
	.312	NAS514P632-5P	$0.08
	.375	NAS514P632-6P	$0.08
	.438	NAS514P632-7P	$0.08
	.500	NAS514P632-8P	$0.10
	.625	NAS514P632-10P	$0.12
	.750	NAS514P632-12P	$0.10
	.875	NAS514P632-14P	$0.09
	1.00	NAS514P632-16P	$0.09
8-32	.250	NAS514P832-4P	$0.11
	.312	NAS514P832-5P	$0.13
	.375	NAS514P832-6P	$0.13
	.438	NAS514P832-7P	$0.14
	.500	NAS514P832-8P	$0.14
	.625	NAS514P832-10P	$0.16
	.750	NAS514P832-12P	$0.12
	.875	NAS514P832-14P	$0.14
	1.00	NAS514P832-16P	$0.19
	1.25	NAS514P832-20P	$0.15
10-32	.250	NAS514P1032-4P	$0.08
	.312	NAS514P1032-5P	$0.12
	.375	NAS514P1032-6P	$0.13
	.438	NAS514P1032-7P	$0.16
	.500	NAS514P1032-8P	$0.13
	.625	NAS514P1032-10P	$0.18
	.750	NAS514P1032-12P	$0.14
	.875	NAS514P1032-14P	$0.15
	1.00	NAS514P1032-16P	$0.16
	1.25	NAS514P1032-20P	$0.19

NAS517 FLUSH HEAD SCREWS

- Phillips 100 Deg. Flat Head
- Alloy Steel Per Mil-S-6049
- Finish - Cad Plate per QQ-P-416 Type II



Thrd	Grip	Lgth	Phillips Part No.	Price Ea.
8-32	-	.469	NAS517-2-1	$0.27
	.125	.531	NAS517-2-2	$0.14
	.188	.594	NAS517-2-3	$0.15
	.250	.656	NAS517-2-4	$0.14
	.312	.719	NAS517-2-5	$0.14
	.375	.781	NAS517-2-6	$0.19
	.438	.844	NAS517-2-7	$0.17
	.500	.906	NAS517-2-8	$0.18
	.562	.969	NAS517-2-9	$0.13
	.625	1.031	NAS517-2-10	$0.19
10-32	.688	1.093	NAS517-2-11	$0.12
	.750	1.156	NAS517-2-12	$0.13
	-	.406	NAS517-3-0	$0.18
	-	.469	NAS517-3-1	$0.09
	.125	.531	NAS517-3-2	$0.11
	.188	.594	NAS517-3-3	$0.13
	.250	.656	NAS517-3-4	$0.14
	.312	.719	NAS517-3-5	$0.12
	.375	.781	NAS517-3-6	$0.16
	.438	.844	NAS517-3-7	$0.14
	.500	.906	NAS517-3-8	$0.19
	.562	.969	NAS517-3-9	$0.20
	.625	1.031	NAS517-3-10	$0.16
	.688	1.093	NAS517-3-11	$0.18
	.750	1.156	NAS517-3-12	$0.17
	.812	1.219	NAS517-3-13	$0.17
	.875	1.281	NAS517-3-14	$0.19
	1.00	1.406	NAS517-3-16	$0.19

SET SCREWS

Set screws are used to provide immediate, binding location of various parts on shafts. Maximum holding pressure is made by the cup point edge gripping the contact suface. Allen head wrenches are used to operate set screws.

Part No.	Thread	Length	Price
04-00182	8-32	3/16	$0.09
04-00183	8-32	1/4	$0.09

Part No.	Thread	Length	Price
04-00184	10-32	1/4	$0.10
04-00189	10-32	1/2	$0.09
04-00191	1/4-28	5/16	$0.12

10-32 X1/4 INCH ALLEN SET SCREW

Set Screw - Socket Products Type: Socket Set Screws Point Type: Cup Thread Size: 10-32 Overall Length: 1/4 Material: Alloy Steel - Grade 8 Finish/Coating: Black Oxide. Key Size (Inch): 3/32. Metalworking Book: 2085. Big Book: 1830 P/N 04-01032.....$0.37

SHORTY BUSHING 2820

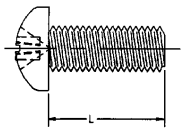
Material: 6/6 Nylon Certifications: File E15331 File LR8919 Flammability Rating: 94V-2 Material Temperature Index: 125°C (257°F)–Max. temperature on part not to exceed 105°C (221°F) Insulating feed-thru bushings for limited internal clearance applications.

P/ N 04-02026 .....$0.15

HA

ALLOY/STRUCTURAL — MACHINE SCREWS

NAS600 - NAS603 MACHINE SCREWS

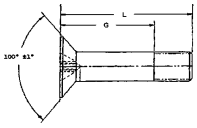


Thread	Length	Part No.	Price Ea.
4-40	.188	NAS600-3P	$0.07
	.250	NAS600-4P	$0.06
	.312	NAS600-5P	$0.09
	.375	NAS600-6P	$0.07
	.438	NAS600-7P	$0.08
	.500	NAS600-8P	$0.07
6-32	.188	NAS601-3P	$0.12
	.250	NAS601-4P	$0.07
	.312	NAS601-5P	$0.08
	.375	NAS601-6P	$0.09
	.438	NAS601-7P	$0.08
	.500	NAS601-8P	$0.09
	.562	NAS601-9P	$0.09
	.625	NAS601-10P	$0.10
	.750	NAS601-12P	$0.14
8-32	.188	NAS602-3P	$0.15
	.250	NAS602-4P	$0.11
	.312	NAS602-5P	$0.11
	.375	NAS602-6P	$0.14
	.438	NAS602-7P	$0.11
	.500	NAS602-8P	$0.15
	.562	NAS602-9P	$0.14
	.625	NAS602-10P	$0.12
	.688	NAS602-11P	$0.13
	.750	NAS602-12P	$0.13
	.813	NAS602-13P	$0.14
	875	NAS602-14P	$0.15
	1.00	NAS602-16P	$0.15
10-32	.250	NAS603-4P	$0.17
	.312	NAS603-5P	$0.14
	.375	NAS603-6P	$0.14
	.438	NAS603-7P	$0.18
	.500	NAS603-8P	$0.14
	.562	NAS603-9P	$0.21
	.625	NAS603-10P	$0.16
	.688	NAS603-11P	$0.19
	.750	NAS603-12P	$0.18
	.813	NAS603-13P	$0.14
	.875	NAS603-14P	$0.28
	.938	NAS603-15P	$0.16
	1.00	NAS603-16P	$0.16
	1.125	NAS603-18P	$0.23
	1.25	NAS603-20P	$0.39

- Phillips Pan Head
- Alloy Steel (8740)
- Finish - Cadmium per QQ-P-416
- Tensile -160,000 - 180,000 PSI

NAS1202 / NAS1203 FLUSH HEAD SCREWS

- Phillips 100° Flat Head
- Tensile – 160,000 – 180,000 PSI
- Alloy Steel Per MIL-S-6049
- Finish - Cadmium per QQ-P-416, Type II



Thrd.	Grip	Lgth.	Part No.	Price Ea.
8-32	.125	.401	NAS1202-2	$0.12
	.188	.464	NAS1202-3	$0.16
	.250	.526	NAS1202-4	$0.10
	.312	.588	NAS1202-5	$0.10
	.375	.651	NAS1202-6	$0.10
10-32	.125	.401	NAS1203-2	$0.15
	.188	.464	NAS1203-3	$0.14
	.250	.526	NAS1203-4	$0.15
	.312	.588	NAS1203-5	$0.17
	.375	.651	NAS1203-6	$0.18
	.438	.714	NAS1203-7	$0.15
	.500	.776	NAS1203-8	$0.18

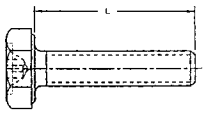
MS51959 MACHINE SCREWS

- Phillips 82° Flat Head
- Stainless Steel

Thrd.	Lgth.	Part No.	Each
2-56	.188	MS51959-2	$0.04
	.250	MS51959-3	$0.04
	.312	MS51959-4	$0.04
	.375	MS51959-5	$0.04
	.250	MS51959-13	$0.04
4-40	.312	MS51959-14	$0.05
	.375	MS51959-15	$0.05
	.438	MS51959-16	$0.05
	.500	MS51959-17	$0.06

Thrd.	Lgth.	Part No.	Each
6-32	.312	MS51959-27	$0.07
	.375	MS51959-28	$0.07
	.438	MS51959-29	$0.07
	.500	MS51959-30	$0.07
	.625	MS51959-31	$0.07
8-32	.375	MS51959-43	$0.09
	.438	MS51959-44	$0.09
	.500	MS51959-45	$0.09
	.625	MS51959-46	$0.09
	.750	MS51959-47	$0.11

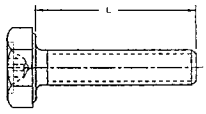
NAS1096 HEX HEAD SCREWS



- Phillips Hex Head
- Alloy Steel per MIL-S-6049
- Finish - Cadmium per QQ-P-416 Type II
- Tensile – 125,000-145,000 PSI

Thread	Length	Part No.	Price Ea.
6-32	.375	NAS1096-1-6	$0.14
	.438	NAS1096-1-7	$0.11
	.500	NAS1096-1-8	$0.19
	.562	NAS1096-1-9	$0.16
	.625	NAS1096-1-10	$0.15
	.750	NAS1096-1-12	$0.18
8-32	.312	NAS1096-2-5	$0.10
	.375	NAS1096-2-6	$0.13
	.438	NAS1096-2-7	$0.13
	.500	NAS1096-2-8	$0.13
	.562	NAS1096-2-9	$0.14
	.625	NAS1096-2-10	$0.17
	.750	NAS1096-2-12	$0.17
10-32	.312	NAS1096-3-5	$0.09
	.375	NAS1096-3-6	$0.18
	.438	NAS1096-3-7	$0.18
	.500	NAS1096-3-8	$0.17
	.562	NAS1096-3-9	$0.13
	.625	NAS1096-3-10	$0.18
	.750	NAS1096-3-12	$0.23
	.875	NAS1096-3-14	$0.26
	1.00	NAS1096-3-16	$0.28
	1.25	NAS1096-3-20	$0.23

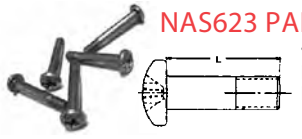
NAS1801 HEX HEAD SCREWS



- Phillips Hex Head
- Alloy Steel Per MIL-S-6049
- Finish - Cad Plate per QQ-P-416, Type II
- Tensile – 160,000-185,000 PSI

Thread	Length	Part No.	Price Ea.
8-32	.250	NAS1801-08-4	$0.15
	.312	NAS1801-08-5	$0.19
	.375	NAS1801-08-6	$0.16
	.438	NAS1801-08-7	$0.14
	.500	NAS1801-08-8	$0.19
	.562	NAS1801-08-9	$0.22
	.625	NAS1801-08-10	$0.18
	.750	NAS1801-08-12	$0.22
	.875	NAS1801-08-14	$0.22
	1.00	NAS1801-08-16	$0.21
	1.125	NAS1801-08-18	$0.21
	1.25	NAS1801-08-20	$0.21
	1.375	NAS1801-08-22	$0.45
10-32	.312	NAS1801-3-5	$0.13
	.375	NAS1801-3-6	$0.13
	.438	NAS1801-3-7	$0.14
	.500	NAS1801-3-8	$0.15
	.562	NAS1801-3-9	$0.21
	.625	NAS1801-3-10	$0.24
	.750	NAS1801-3-12	$0.26
	.875	NAS1801-3-14	$0.24
	1.00	NAS1801-3-16	$0.34
	1.125	NAS1801-3-18	$0.27
	1.25	NAS1801-3-20	$0.28
	1.375	NAS1801-3-22	$0.48
	1.50	NAS1801-3-24	$0.51

NAS623 PAN HEAD SCREWS



- Phillips Pan Head • Alloy Steel per MIL-S-6049 • Finish: Cadmium per QQ-P-416, Type II • Tensile: 160,000-180,000 PSI

Thrd.	Lgth.	Part No.	Each
8-32	.338	NAS623-2-1	$0.14
	.401	NAS623-2-2	$0.15
	.464	NAS623-2-3	$0.16
	.526	NAS623-2-4	$0.13
	.588	NAS623-2-5	$0.19
	.651	NAS623-2-6	$0.21
	.714	NAS623-2-7	$0.19
	.776	NAS623-2-8	$0.21
	.838	NAS623-2-9	$0.20
	.901	NAS623-2-10	$0.17
	.964	NAS623-2-11	$0.12
	1.026	NAS623-2-12	$0.13
10-32	.401	NAS623-3-2	$0.16
	.464	NAS623-3-3	$0.18
	.526	NAS623-3-4	$0.15

Thrd.	Lgth.	Part No.	Each
10-32	.588	NAS623-3-5	$0.17
	.651	NAS623-3-6	$0.18
	.714	NAS623-3-7	$0.22
	.776	NAS623-3-8	$0.19
	.838	NAS623-3-9	$0.22
	.901	NAS623-3-10	$0.17
	.964	NAS623-3-11	$0.19
	1.026	NAS623-3-12	$0.17
	1.088	NAS623-3-13	$0.18
	1.151	NAS623-3-14	$0.21
	1.214	NAS623-3-15	$0.16
	1.276	NAS623-3-16	$0.21
	1.338	NAS623-3-17	$0.24
	1.401	NAS623-3-18	$0.49

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SHEET METAL SCREWS

TRUSS HEAD TYPE A STAINLESS

Size	Length	Phillips		Slotted	
		Part No.	Price Each	Part No.	Price Each
4	1/4	T4X4	$0.03	TS4X4	$0.04
	3/8	T4X6	$0.04	TS4X6	$0.09
	1/2	T4X8	$0.04	TS4X8	$0.05
6	1/4	T6X4	$0.04	TS6X4	---
	3/8	T6X6	$0.03	TS6X6	$0.03
	1/2	T6X8	$0.03	TS6X8	$0.03
	5/8	T6X10	$0.04	TS6X10	$0.06
	3/4	T6X12	$0.04	TS6X12	$0.07
	1	T6X16	$0.06	TS6X16	$0.09
8	3/8	T8X6	$0.05	TS8X6	---
	1/2	T8X8	$0.05	TS8X8	$0.06
	5/8	T8X10	$0.06	TS8X10	$0.07
	3/4	T8X12	$0.06	TS8X12	$0.11
	1	T8X16	$0.07	TS8X16	$0.17
	1-1/4	T8X20	$0.08	TS8X20	$1.58
10	3/8	T10X6	$0.06	TS10X6	---
	1/2	T10X8	$0.06	TS10X8	$0.09
	5/8	T10X10	$0.08	TS10X10	$0.06
	3/4	T10X12	$0.07	TS10X12	$0.26
	1	T10X16	$0.11	TS10X16	$0.09
	1-1/4	T10X20	$0.12	TS10X20	$0.10

TRUSS HEAD TYPE B PHILLIPS STAINLESS

Size	Head Size	L (in)	P/N	Price
4	1/4"	1/4	04-00164	$0.11
		3/8	04-00166	$0.06
		1/2	04-00167	$0.17
6	5/16"	1/4	04-00168	$0.05
		3/8	04-00169	$0.06
		1/2	T6X8B	$0.06
		5/8	04-00171	$0.29
		3/4	04-00172	$0.19
		1	04-00173	$0.32

Size	Head Size	L (in)	P/N	Price
8	3/8"	3/8	04-00174	$0.13
		1/2	T8X8B	$0.08
		5/8	04-00007	$0.11
		3/4	04-00176	$0.13
		1	04-00177	$0.52
10	7/16"	3/8	04-00178	$0.11
		1/2	T10X8B	$0.11
		5/8	04-00008	$0.11
		3/4	04-00179	$0.11
		1	04-00181	$0.19

82° OVAL HEAD TYPE A, PHILLIPS (FOR UPHOLSTERY)

Size	Length	Stainless P/N	Price Ea	Zinc P/N	Price Ea
4	1/4	O4X4	$0.05	O4X4Z	---
	3/8	O4x6	$0.05	O4X6Z	$0.09
	1/2	O4X8	$0.03	O4X8Z	$0.04
	5/8	O4X10	$0.04	O4X10Z	$0.07
6	3/8	O6X6	$0.04	O6X6Z	$0.07
	1/2	O6X8	$0.04	O6X8Z	$0.04
	5/8	O6X10	$0.04	O6X10Z	---
	3/4	O6X12	$0.04	O6X12Z	---
	1	O6X16	$0.05	O6X16Z	---
8	3/8	O8X6	$0.06	O8X6Z	---
	1/2	O8X8	$0.05	O8X8Z	$0.04
	5/8	O8X10	$0.05	O8X10Z	$0.22
	3/4	O8X12	$0.05	O8X12Z	$0.04
	1	O8X16	$0.07	O8X16Z	$0.05
10	1/2	O10X8	$0.06	O10X8Z	$0.09
	3/4	O10X12	$0.08	O10X12Z	$0.39

100°FLAT HEAD TYPE A, PHILLIPS, STAINLESS

Size	Length	Part No.	Price Ea.
6	1/2	C6X8	$0.07
8	1/2	C8X8	$0.08
10	1/2	C10X8	$0.12

AN530 ROUND HEAD

Use slotted type for antiques.

Size	SLOTTED		PHILLIPS	
	Price	P/N AN530 Dash#	Price	P/N AN530 Dash#
4X1/4	---	----	$0.07	4R4
4X3/8	$0.24	-4-6	---	N/A
4X1/2	---	---	$0.36	4R8
6X3/8	---	-6-6	$0.08	6R6
6X1/2	---	-6-8	$0.09	6R8
6X5/8	---	---	$0.48	6R10
6X3/4	---	-6-12	---	6R12
8X3/8	---	---	$0.08	8R6
8X1/2	---	---	$0.12	8R8
10X1/2	---	10-8	$0.11	10R8
10X1	---	---	$0.10	10R16

FLAT HEAD TYPE B, PHILLIPS, STAINLESS

Size	Length	Degree	Part No.	Price Ea
6	3/8	100°	MS21207-C6-6	$0.09
6	1/2	100°	MS21207-C6-8	$0.08
8	1/2	100°	MS21207-C8-8	$0.12
8	5/8	100°	MS21207-C8-10	$0.11
10	1/2	100°	MS21207-C10-8	$0.12
8	1/2	82°	04-00187	$0.10

ZINC-PLATED, TRUSS HEAD TYPE A & TYPE B

Size	Length	Phillips			Slotted	
		Part No. Type A	Part No. Type B	Price Each	Part No. Type A	Price Each
4	1/4	THA4X4	THB4X4	$0.06	THA4-4	---
4	3/8	THA4X6	THB4X6	$0.06	THA4-6	$0.15
4	1/2	THA4X8	THB4X8	$0.06	THA4-8	$0.06
4	5/8	THA4X10	THB4X10	$0.07	THA4-10	$0.06
4	3/4	THA4X12	THB4X12	$0.07	THA4-12	$0.20
4	7/8	THA4X14	------	----	-----	----
6	3/8	THA6X6	THB6X6	$0.03	THA6-6	$0.17
6	1/2	THA6X8	THB6X8	$0.02	THA6-8	$0.05
6	5/8	THA6X10	THB6X10	$0.03	THA6-10	$0.21
6	3/4	THA6X12	THB6X12	$0.02	THA6-12	$0.02
8	3/8	THA8X6	THB8X6	$0.03	THA8-6	$0.03
8	1/2	THA8X8	THB8X8	$0.03	THA8-8	$0.04
8	5/8	THA8X10	THB8X10	$0.04	THA8-10	---
8	3/4	THA8X12	THB8X12	$0.04	THA8-12	---
8	1	THA8X16	THB8X16	$0.03	THA8-16	$0.07
10	1/2	THA10X8	THB10X8	$0.04	THA10-8	$0.10
10	5/8	THA10X10	THB10X10	$0.04	THA10-10	---
10	3/4	THA10X12	THB10X12	$0.04	THA10-12	$0.12
10	1	THA10X16	THB10X16	$0.07	THA10-16	$0.11

ZINC-PLATED, 82° FLAT HEAD TYPE A ZINC-PLATED STEEL

(Use slotted screws for antiques)

Size	Length	Phillips			Slotted	
		Part No. Type A	Part No. Type B	Price Each	Part No. Type A	Price Each
4	1/4	FHA4X4	FHB4X4	$0.04	FHA4-4	---
4	3/8	FHA4X6	FHB4X6	$0.03	FHA4-6	---
4	1/2	FHA4X8	FHB4X8	$0.03	FHA4-8	---
4	5/8	FHA4X10	FHB4X10	---	FHA4-10	---
4	3/4	FHA4X12	FHB4X12	---	FHA4-12	---
6	3/8	FHA6X6	FHB6X6	$0.06	FHA6-6	---
6	1/2	FHA6X8	FHB6X8	$0.03	FHA6-8	---
6	5/8	FHA6X10	FHB6X10	$0.05	FHA6-10	$0.36
6	3/4	FHA6X12	FHB6X12	$0.03	FHA6-12	$0.05
8	3/8	FHA8X6	FHB8X6	$0.04	FHA8-6	---
8	1/2	FHA8X8	FHB8X8	$0.03	FHA8-8	---
8	5/8	FHA8X10	FHB8X10	$0.04	FHA8-10	---
8	3/4	FHA8X12	FHB8X12	$0.04	FHA8-12	---
8	1	FHA8X16	FHB8X16	$0.12	FHA8-16	$0.06
10	1/2	FHA10X8	FHB10X8	$0.04	FHA10-8	$0.05
10	5/8	FHA10X10	FHB10X10	$0.04	FHA10-10	$0.14
10	3/4	FHA10X12	FHB10X12	---	FHA10-12	$0.12

MS51861 SERIES SCREWS

MS numbers without the C at the end - Material: Carbon Steel Type 1016 - 1024 Finish: CAD TYPE II
MS numbers with the C at the end - Material: Stainless Steel Type 410 Finish: Passivate

Size	Length	Part No.	Price each	Part No.	Price each
#4	1/4	MS51861-12	$0.10	MS51861-12C	$0.20
	3/8	MS51861-14	$0.11	MS51861-14C	$0.21
	1/2	MS51861-15	$0.12	MS51861-15C	$0.22
#6	1/4	MS51861-22	$0.12	MS51861-22C	$0.22
	3/8	MS51861-24	$0.13	MS51861-24C	$0.23
	1/2	MS51861-25	$0.13	MS51861-25C	$0.24
	5/8	MS51861-26	$0.14	MS51861-26C	$0.25
	3/4	MS51861-27	$0.15	MS51861-27C	$0.26
	1	MS51861-29	$0.16	MS51861-29C	---
#8	3/8	MS51861-34	$0.12	MS51861-34C	$0.24
	1/2	MS51861-35	$0.14	MS51861-35C	$0.15
	5/8	MS51861-36	$0.16	MS51861-36C	$0.28
	3/4	MS51861-37	$0.17	MS51861-37C	$0.30
	1	MS51861-39	$0.18	MS51861-39C	---
#10	1/2	MS51861-45	$0.17	MS51861-45C	$0.30
	5/8	MS51861-46	$0.18	MS51861-46C	$0.32
	3/4	MS51861-47	$0.19	MS51861-47C	---
	1	MS51861-49	$0.20	MS51861-49C	---

FUEL TANK STRUCTURAL STAINLESS SCREW KITS (PER TANK)

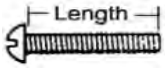
Aircraft Model	Part No.	Price
Cessna 150/152 (Standard)	04-01005	$31.85
Cessna 150/152 (Long Range)	04-01004	$43.65
Cessna 172	04-01003	$58.75
Cessna 172 (Long Range)	04-02068	$65.75
Piper PA28 Cherokee (Standard)	04-01002	$59.85
Piper PA28 Cherokee (Long Range)	04-01001	$73.75
Cessna 150 Aerobat	04-01006	$20.00
Cessna150/152 (67-77)	04-01008	$20.00
Cessna 170AF	04-01009	$25.00
Cessna 182F	04-01011	$20.25
Piper Cherokee 140/150/160/180/235 (Cad. Plated)	04-01015	$22.50

MACHINE SCREWS

BRASS INSTRUMENT SCREWS

Use brass screws for all panel installations to eliminate magnetic interference. All brass screws are coated inblack oxide.

AN515 & AN520 ROUND HEAD SCREWS



Part Number	Length (In.)	Thread Size	Price Each
AN515B6R8 (Recessed)	1/2	6-32	$0.12
AN515B6-12 (Slot)	3/4	6-32	$0.17
AN515B6R12 (Recessed)	3/4	6-32	$0.10
AN515B8-16 (Slot)	1	8-32	$0.28
AN515B10-16 (Slot)	1	10-24	$0.72

MS35214 & MS35215 PAN HEAD SCREWS

Part No.	Length	Thread	Price
MS35214-12	1/4"	4-40	$0.08
MS35214-13	5/16"	4-40	$0.08
MS35214-14	3/8"	4-40	$0.08
MS35214-15	7/16"	4-40	$0.09
MS35214-16	1/2"	4-40	$0.08
MS35214-18	3/4"	4-40	$0.09
MS35214-23	1/4"	6-32	$0.10
MS35214-24	5/16"	6-32	$0.11
MS35214-26	7/16"	6-32	$0.13
MS35214-27	1/2"	6-32	$0.12
MS35214-28	5/8"	6-32	$0.12
MS35214-29	3/4"	6-32	$0.12
MS35214-30	7/8"	6-32	$0.17
MS35214-31	1"	6-32	$0.16
MS35214-32	1-1/4"	6-32	$0.15
MS35214-33	1-1/2"	6-32	$0.16

Part No.	Length	Thread	Price
MS35214-40	3/8"	8-32	$0.11
MS35214-41	7/16"	8-32	$0.15
MS35214-42	1/2"	8-32	$0.15
MS35214-43	5/8"	8-32	$0.17
MS35214-44	3/4"	8-32	$0.19
MS35214-45	7/8"	8-32	$0.27
MS35214-46	1"	8-32	$0.20
MS35214-47	1-1/4"	8-32	$0.24
MS35214-48	1-1/2"	8-32	$0.29
MS35214-59	1"	10-24	$0.79
MS35215-53	3/8"	10-32	$0.18
MS35215-55	1/2"	10-32	$0.25
MS35215-56	5/8"	10-32	$0.22
MS35215-57	3/4"	10-32	$0.23
MS35215-59	1"	10-32	$0.22
MS35215-60	1-1/4"	10-32	-

MS24693 FLAT HEAD SCREWS (RECESSED)

Part Number	Length	Thread	Price
MS24693BB2	.250	4-40	$0.06
MS24693BB3	.312	4-40	$0.09
MS24693BB4	.375	4-40	$0.07
MS24693BB5	.438	4-40	$0.07
MS24693BB6	.500	4-40	$0.09
MS24693BB7	.625	4-40	$0.09
MS24693BB24	.250	6-32	$0.14
MS24693BB25	.312	6-32	$0.10
MS24693BB26	.375	6-32	$0.08
MS24693BB27	.438	6-32	$0.11
MS24693BB28	.500	6-32	$0.12
MS24693BB29	.625	6-32	$0.08
MS24693BB30	.750	6-32	$0.09
MS24693BB31	.875	6-32	$0.10

Part Number	Length	Thread	Price
MS24693BB32	1.00	6-32	$0.17
MS24693BB33	1.13	6-32	$0.15
MS24693BB34	1.25	6-32	$0.16
MS24693BB36	1.50	6-32	$0.17
MS24693BB48	.375	8-32	$0.14
MS24693BB50	.500	8-32	$0.17
MS24693BB51	.625	8-32	$0.13
MS24693BB54	1	8-32	$0.17
MS24693BB56	1.25	8-32	$0.27
MS24693BB272	.500	10-32	$0.18
MS24693BB273	.625	10-32	$0.15
MS24693BB274	.750	10-32	$0.23
MS24693BB276	1.00	10-32	$0.29
MS24693BB278	1.25	10-32	$0.22

STAINLESS STEEL SCREW, WASHER & STOP NUT ASSORTMENT

This 2400 piece assortment is ideal for aircraft homebuilders, owners, mechanics and FBO's. It is packaged in a handy divided storage kit and contains 2100 stainless steel screws and washers and 300 stop nuts. Kit contains 100 each of the following:

NON-STRUCTURAL MACHINE SCREWS

Countersunk Flat Head	Truss Head
AN507C632R8	AN526C632R8
AN507C832R8	AN526C832R8
AN507C832R10	AN526C832R10
AN507C1032R8	AN526C1032R8
AN507C1032R10	AN526C1032R10

ELASTIC STOP NUTS

AN365C632
AN365C832
AN365C1032

WASHERS

Tinnerman Countersunk

A3135- SS- 017	(#8)
A3235- SS- 020	(#10)

Flat: AN960C6
AN960C8 or AN960C10

SHEET METAL SCREWS

Truss Head Phillips, Type A (Sharp Point)

4R x 1/2	8R x 1/2
6R x 3/8	8R x 5/8
6R x 1/2	10R x 1/2

STAINLESS STEEL HARDWARE ASSORTMENT

P/N 04-05000..... $226.95

INDIVIDUAL AIRPLANE EXTERIOR STAINLESS TRIM SCREW AND WASHER KITS

These kits do not include any structural screws.

Aircraft Type	# of Pieces	P/N	Price
BEECHCRAFT			
Baron	1310	04-04400	$67.75
Bonanza	675	04-04300	$46.95
Musketeer/Sport	615	04-04350	$36.50
Sundowner	615	04-04350	$36.50
BELLANCA			
Citabria	248	04-00990	$25.50
Viking	-	04-00880	$23.80
CESSNA			
120/140	310	04-01200	$27.50
150/152	355	04-01000	$33.65
170	310	04-01200	$27.50
170-B	310	04-01200	$27.50
172/172 Skyhawk	410	04-01100	$33.75
172RG	330	04-01400	$38.50
172 XP	520	04-01300	$37.50
175	450	04-01500	$35.90
177/177RG Cardinal	600	04-01600	$46.50
180/185 Skywagon	530	04-01700	$37.65
182RG Skylane	580	04-01900	$39.95
188 Agwagon	775	04-02000	$47.85
190/195	370	04-02100	$28.50
205	510	04-02200	$37.50
206-208 Stationair	555	04-02300	$38.50
210 Centurion	630	04-02400	$44.95
310	1110	04-02410	$93.75
310/320	1110	04-02500	$93.75
335/340	1492	04-02510	$118.75
336/337	1347	04-02700	$88.75
337 Super Skymaster	-	04-02710	$88.75
401/402	1468	04-00401	$132.75
411/414	1342	04-02750	$107.75
421	1580	04-02800	$136.85
Commander - Lark/Darter	-	04-04510	$34.80
Ercoupe - 415C/Forney	525	04-04900	$27.70
GRUMMAN			
AA1A/AA1B	490	04-04600	$33.85
Ag Cat	515	04-04800	$39.50
Cheetah/Tiger	975	04-04700	$57.75
Lake - Amphibian	265	04-04710	$25.85
PIPER			
Aerostar	-	04-04720	$99.75
Apache	-	04-04730	$67.50
Arrow	615	04-03800	$53.75
Arrow III	590	04-03810	$53.75
Aztec	1050	04-03200	$72.75
Cherokee 140/150/160/180/235	570	04-03600	$46.75
Cherokee Six	455	04-04000	$48.50
Comanche (Single)	485	04-03300	$59.50
Comanche (Twin)	800	04-03900	$59.95
J-3 Cub	-	04-03910	$46.25
Navajo	2065	04-03920	$193.75
Pawnee	1965	04-03400	$149.95
PA28 Arrow (Fat Wing)	615	04-03800	$53.75
PA28 Challenger/Archer	670	04-03500	$48.85
PA28R Arrow (Tap. Wing)	590	04-03810	$53.75
PA32R Lance	685	04-04010	$45.95
Seneca I & II	1415	04-04100	$92.75
Super Cub	-	04-04110	$48.25
Tomahawk	440	04-04200	$37.50
Tripacer/Colt	360	04-03100	$31.50
Warrior/Archer	480	04-03700	$33.90
Pitts - S2A	640	04-03710	$34.75
Rockwell - 12/114	570	04-03720	$29.95
MOONEY			
68, 77, 78	1240	04-02900	$53.75
201/231	970	04-03050	$64.75
M20C	1022	04-02820	$53.90
M20-C 69, 76	-	04-03000	$54.85
M20E/G (up to 1976)	-	04-02830	$69.75
M20E/G (1977 & up)	-	04-02840	$77.50
M20F	-	04-02850	$98.75

NOTE: 10% DISCOUNT OFFERED IF CUSTOMER CAN PROVIDE US WITH TYPES AND SIZES FOR AIRCRAFT NOT LISTED.

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CORONA, CA • (877) 4-SPRUCE

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Prices Subject to Change Without Notice

SOCKET HEAD CAP SCREWS

SOCKET HEAD CAP SCREW STAINLESS STEEL-DRILLED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352C04H4		4-40	1/4"	$1.13
NAS1352C04H6		4-40	3/8"	$1.39
NAS1352C06H6	MS24674-2	6-32	3/8"	$1.22
NAS1352C06H8	MS24674-3	6-32	1/2"	$1.22
NAS1352C08H6	MS24674-7	8-32	3/8"	$1.51
NAS1352C08H8	MS24674-8	8-32	1/2"	$1.39
NAS1352C08H10	MS24674-9	8-32	5/8"	$1.58
NAS1351C3H6	MS24673-1	10-32	3/8"	$1.79
NAS1351C3H8	MS24673-2	10-32	1/2"	$1.40
NAS1351C3H10	MS24673-3	10-32	5/8"	$1.72
NAS1351C4H10	MS24673-10	1/4"-28	5/8"	$1.72
NAS1351C4H12	MS24673-11	1/4"-28	3/4"	$1.60
NAS1351C4H14	MS24673-12	1/4"-28	7/8"	$5.25
NAS1351C4H16	MS24673-13	1/4"-28	1	$2.60

SOCKET HEAD CAP SCREW ALLOY STEEL-DRILLED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352-04H4P	MS24677-1	4-40	1/4"	$1.10
NAS1352-04H6P	MS24677-2	4-40	3/8"	$0.85
NAS1352-06H6P	MS24677-7	6-32	3/8"	$1.04
NAS1352-06H8P	MS24677-8	6-32	1/2"	$0.99
NAS1352-06H10P	MS24677-9	6-32	5/8"	$1.12
NAS1352-08H6P	MS24677-14	8-32	3/8"	$1.18
NAS1352-08H8P	MS24677-15	8-32	1/2"	$1.02
NAS1352-08H10P	MS24677-16	8-32	5/8"	$1.09
NAS1352-08H12P	MS24677-17	8-32	3/4"	$1.14
NAS1351-3H6P	MS24678-9	10-32	3/8"	$1.09
NAS1351-3H8P	MS24678-10	10-32	1/2"	$0.99
NAS1351-3H10P	MS24678-11	10-32	5/8"	$1.18
NAS1351-3H12P	MS24678-12	10-32	3/4"	$1.28
NAS1351-4H10P	MS24678-21	1/4-28	5/8"	$1.42
NAS1351-4H12P	MS24678-22	1/4-28	3/4"	$1.24
NAS1351-4H14P	MS24678-23	1/4-28	4/8"	$1.46
NAS1351-4H16P	MS24678-24	1/4-28	1"	$1.38

SOCKET HEAD CAP SCREW STAINLESS STEEL-UNDRILLED

PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352C04-4	MS16995-9	4-40	1/4"	$0.25
NAS1352C04-8	MS16995-11	4-40	1/2"	$0.28
NAS1352C06-4	MS16995-16	6-32	1/4"	$0.31
NAS1352C06-6	MS16995-17	6-32	3/8"	$0.27
NAS1352C06-8	MS16995-18	6-32	1/2"	$0.29
NAS1352C06-10	MS16995-19	6-32	5/8"	$0.32
NAS1352C08-6	MS16995-25	8-32	3/8"	$0.34
NAS1352C08-8	MS16995-26	8-32	1/2"	$0.36
NAS1352C08-10	MS16995-27	8-32	5/8"	$0.39
NAS1352C08-12	MS16995-28	8-32	3/4"	$0.42
NAS1351C3-6	MS16996-9	10-32	3/8"	$0.33
NAS1351C3-8	MS16996-10	10-32	1/2"	$0.34
NAS1351C3-10	MS16996-11	10-32	5/8"	$0.38
NAS1351C3-12	MS16996-12	10-32	3/4"	$0.46
NAS1351C4-10	MS16996-22	1/4-28	5/8"	$0.72
NAS1351C4-12	MS16996-23	1/4-28	3/4"	$0.65
NAS1351C4-16	MS16996-24	1/4-28	1"	$0.82

SOCKET HEAD CAP SCREW ALLOY STEEL UN-DRILLED

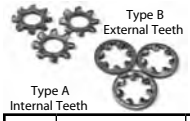
PART NO.	MS NO.	THREAD	LENGTH	PRICE
NAS1352-04-4P	MS16997-9	4-40	1/4"	$0.44
NAS1352-04-6P	MS16997-10	4-40	3/8"	$0.37
NAS1352-04-8P	MS16997-11	4-40	1/2"	$0.43
NAS1352-06-6P	MS16997-19	6-32	3/8"	$0.42
NAS1352-06-8P	MS16997-20	6-32	1/2"	$0.54
NAS1352-06-10P	MS16997-21	6-32	5/8"	$0.54
NAS1352-08-6P	MS16997-31	8-32	3/8"	$0.58
NAS1352-08-8P	MS16997-32	8-32	1/2"	$0.57
NAS1352-08-10P	MS16997-33	8-32	5/8"	$0.63
NAS1352-08-12P	MS16997-34	8-32	3/4"	$0.63
NAS1351-3-6P	MS16998-26	10-32	3/8"	$0.52
NAS1351-3-8P	MS16998-27	10-32	1/2"	$0.42
NAS1351-3-10P	MS16998-28	10-32	5/8"	$0.48
NAS1351-3-12P	MS16998-29	10-32	3/4"	$0.59
NAS1351-4-10P	MS16998-42	1/4-28	5/8"	$0.95
NAS1351-4-12P	MS16998-43	1/4-28	3/4"	$1.08
NAS1351-4-14P	MS16998-44	1/4-28	7/8"	$0.97
NAS1351-4-16P	MS16998-45	1/4-28	1"	$0.83

MS35338 LOCK WASHERS

MS35338 split, helical lock washers are made of carbon steel, cadmium plated per QQ-P-416A, Type II, Class 3. They replace AN935 medium-weight washers. Formerly AN935.

	Cad. Plated		Stainless	
Size	Part No.	Price	Part No.	Price
6	MS35338-41	$0.02	MS35338-136	$0.03
8	MS35338-42	$0.02	MS35338-137	$0.04
10	MS35338-43	$0.02	MS35338-138	$0.05
1/4	MS35338-44	$0.02	MS35338-139	$0.12
5/16	MS35338-45	$0.03	MS35338-140	$0.19
3/8	MS35338-46	$0.07	MS35338-141	$0.49
7/16	MS35338-47	$0.09	MS35338-142	$0.49
1/2	MS35338-48	$0.09	MS35338-143	$0.64

MS35333 & MS35335 LOCK WASHERS



Provide efficient locking action by spring tension and biting action of tapered twisted teeth. Made of 1050 spring steel and cadmium plated per specification QQ-P-416A, Type II, Class 3. Available with internal teeth (Type A) or external teeth (Type B).

Size	Cad. Plated Part No.	Price Each	Stainless Part No.	Price Each	Cad. Plated Part No.	Price Each
6	MS35333-37	$0.02	MS35333-71	$0.07	MS35335-30	$0.02
8	MS35333-38	$0.02	MS35333-72	$0.06	MS35335-31	$0.03
10	MS35333-39	$0.02	MS35333-73	$0.06	MS35335-32	$0.03
1/4	MS35333-40	$0.02	MS35333-74	$0.06	MS35335-33	$0.04
5/16	MS35333-41	$0.04	MS35333-75	$0.21	MS35335-34	$0.05
3/8	MS35333-42	$0.07	MS35333-76	$0.32	MS35335-35	$0.08
7/16	MS35333-43	$0.07	MS35333-77	$0.36	-----	---
1/2	MS35333-44	$0.11	MS35333-78	$0.32	-----	---

TOOTH LOCKWASHER

MIL-SPEC designations for tooth lockwashers include, but are not limited to MS35335. These are covered by military procurement specification FF-W-100

Nominal Screw Size	Inside Diameter		Outside Diameter		Material Thickness		MS 35335 Steel Plated	P/N	Price
	Min	Max	Min	Max	Min	Max			
9/16	0.576	0.596	0.960	0.985	0.037	0.045	-38	04-00099	$0.28
3/4	0.768	0.795	1.220	1.260	0.047	0.055	-40	04-00101	$0.76
7/8	0.897	0.927	1.380	1.410	0.052	0.060	-41	04-00103	$0.56

NAS549 PHENOLIC WASHERS

NAS549-10 Phenolic insulating washers for #10 screws. Size: 13/64" I.D. x 7/16" O.D. x 1/16 thick..... $0.17 Ea.

G-8 TINNERMAN WASHERS

A No. 8 'Tinnerman' style washer with the same O.D. as a No. 10 (0.75). Great for those oversize holes in fairings. Unlike the No. 10 washer with a No. 8 screw, these washers will tighten down on the fairing (not bottom out on the cone) thus providing the proper "clamp up" between the fastener and the fairing. The G-8 washers are Made in the USA from 304 (1/2 hard) Stainless Steel and are machine tumbled for a shiny finish.

P/N 04-01989 ..... $0.29

TINNERMAN COUNTERSUNK WASHERS

For use with 100° flat-head screws such as MS24693 and MS24694 machine screws and NAS548 sheet metal screws to provide reinforced, low-profile attachments. Made of spring steel, cadmium electroplated.

Part No.	Screw Size	I.D. In.	O.D. In.	Price Each	Price per 100
A3236-012-193	#6	.140	.50	$0.25	---
A3135-017-24A	#8	.171	.56	$0.20	$16.00
A3235-028-24A	#10	.196	.75	$0.10	$8.00

NYLON WASHERS

Part No.	Thread Size	Price Ea.
04-00219	#4	$0.02
04-00216	#6	$0.02

Part No.	Thread Size	Price Ea.
04-00217	#8	$0.02
04-00218	#10	$0.03

Less 20% Discount on 100 per size

100° CSK STAINLESS WASHERS

Use with 100° flathead screws to provide reinforced, low-profile attachments.

Size	Dimensions	Part No.	Price
6	.500 OD x .012 T	04-00397	$0.12
8	.562 OD x .017 T	04-00392	$0.11
10	.750 OD x .020 T	04-00398	$0.08

Less 20% Discount on 100 per size

AN975 TAPER PIN WASHERS

Taper pin washers are used with AN386 threaded taper pins. Manufactured of steel, cadmium plated per QQ-P-416, Type II, Class 2.

AN975 Dash #	Fits Taper Pin #	Price Ea.
-3	1, 2	$0.47
-4	3	$1.40
-5	4	$3.35
-6	5	$3.35

AN960 FLAT WASHERS

AN960 flat washers are used under hex nuts to provide a smooth bearing surface, as shims to obtain the correct grip length for a bolt and nut assembly, and to adjust the position of AN310 and AN320 castle nuts with respect to drilled cotter pin holes in bolts and clevis pins. Available in cadmium plated steel or anodized aluminum, and in regular and light thickness. Add the letter "L" to dash number to indicate light series. For anodized aluminum washers, add the letters "PD" after AN number.

Examples: AN960-416L is a light series cadmium plated steel washer for 1/4" dia. bolt. AN960PD-10 is an anodized alumsinum washer for a 3/16" dia. bolt. AN960PD-10L is a light series anodized aluminum washer for a 3/16" dia. bolt.

NSWC FLAT WASHER KIT - Contains: • Flat AN960-916 (12 qty)• Flat AN960-616L (4 qty) • Flat AN960-416 (40 qty) • Flat AN960-716L (8 qty) • Flat AN960-616 (40 qty) • Flat AN960-816 (32 qty) • Flat AN960-816L (32 qty) .....P/N 04-01728 ..... $6.95

Dash #	Bolt or Screw Size	O.D. (In.)	I.D. (In.)	Thickness steel		Thickness Aluminum		Price	
				Light	Regular	Light	Regular	Steel each	Alum. each
-4	No. 4	.312	.125	.016	.032	.016	.032	$0.02	$0.04
-6	No. 6	.375	.149	.016	.032	.016	.032	$0.02	$0.03
-8	No. 8	.375	.174	.016	.032	.016	.032	$0.02	$0.04
-10	No. 10	.438	.203	.032	.063	.032	.063	$0.02	$0.05
-416	1/4"	.500	.265	.032	.063	.016	.063	$0.03	$0.06
-516	5/16"	.562	.328	.032	.063	.016	.063	$0.04	$0.08
-616	3/8"	.625	.390	.032	.063	.016	.063	$0.04	$0.09
-716	7/16"	.750	.453	.032	.063	.016	.063	$0.05	$0.12
-816	1/2"	.875	.515	.032	.063	.016	.063	$0.06	$0.15
-916	9/16"	1.062	.578	.032	.063	.016	.063	$0.09	$0.55
-1016	5/8"	1.118	.640	.032	.063	----	----	$0.12	----
-1216	3/4"	1.312	.765	.032	.090	----	----	$0.23	----

AN960C STAINLESS WASHERS

Size	Regular		Light	
	Part No.	Price Ea.	Part No.	Price Ea.
4	AN960C4	$0.03	AN960C4L	$0.03
5	-----	---	-----	---
6	AN960C6	$0.03	AN960C6L	$0.03
8	AN960C8	$0.03	AN960C8L	$0.03
3/16	AN960C10	$0.04	AN960C10L	$0.04
1/4	AN960C416	$0.06	AN960C416L	$0.04
5/16	AN960C516	$0.09	AN960C516L	$0.03
3/8	AN960C616	$0.09	AN960C616L	$0.05
7/16	AN960C716	$0.10	AN960C716L	$0.09
1/2	AN960C816	$0.17	AN960C816L	$0.09
9/16	AN960C916	$0.23	AN960C916L	$0.14
5/8	AN960C1016	$0.66	AN960C1016L	$0.17
3/4	AN960C1216	$0.76	-----	----

AN970 FLAT WASHERS

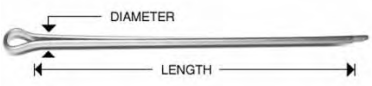
Manufactured of carbon steel, cadmium plated per QQ-P-416C, Type II, Class 2. They provide a greater bearing area than AN960 washers. Used on wooden structures under both the head of the bolt & the nut to prevent crushing the surface.

Dash No.	Bolt Size	O.D. (In.)	I.D. (In.)	Thk (In.)	Price Each	Price per 100
-3	3/16"	.875	.203	.063	$0.06	$4.80
-4	1/4"	1.125	.265	.063	$0.10	$8.00
-5	5/16"	1.375	.328	.063	$0.17	$13.60
-6	3/8"	1.625	.390	.063	$0.21	$16.80
-7	7/16"	1.812	.453	.109	$0.47	$37.60
-8	1/2"	2.000	.515	.109	$0.53	$42.40
-10	5/8"	2.375	.640	.125	$0.88	$70.40

FINISHING WASHERS

Finishing washers are used in non-structural interior and upholstery applications. The parts covered by NAS390 & NAS391 are getting harder to procure and do not necessarily conform exactly to all of the dimensions stated on the specs. Commercial equivalents can be supplied and are suggested. These are non-critical washers that are readily available and cost effective.

Screw or Bolt Size	Countersink Washer Part No.	Price		Flush Washer Part No.	Price	
		Each	100		Each	100
#4	NAS391B4P	$0.06	$4.80	NAS390B4P	--	--
#6	NAS391B6P	$0.05	$4.00	NAS390B6P	$0.04	$3.20
#8	NAS391B8P	$0.08	$6.40	NAS390B8P	$0.06	$4.80
#10	NAS391B10P	$0.09	$7.20	NAS390B10P	$0.08	$6.40



MS24665 COTTER PINS (FORMERLY AN380)

MS24665 cotter pins are stocked in cadmium plated steel (formerly AN380) and in passivated corrosion resisting steel (formerly AN381) in the priced sizes listed below. Other sizes available on special order. Write for quotation.

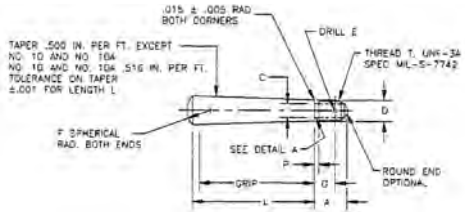
Assortment of 100 Cadmium Plated Cotter Pins
P/N 04-05050.....$3.35

CADMIUM PLATED			
Part No.	AN380 Dash No.	Dia. & Length	Price
MS24665-5	-1-2	1/32 X 1/2	$0.03
MS24665-7	-1-3	1/32 X 3/4	$0.03
MS24665-9	-1-4	1/32 X 1	$0.03
MS24665-132	-2-2	1/16 X 1/2	$0.03
MS24665-134	-2-3	1/16 X 3/4	$0.03
MS24665-136	-2-4	1/16 X 1	$0.02
MS24665-138	-2-5	1/16 X 1-1/4	$0.05
MS24665-140	-2-6	1/16 X 1-1/2	$0.05
MS24665-142	-2-7	1/16 X 1-3/4	$0.04
MS24665-143	-2-8	1/16 X 2	$0.06
MS24665-208	-	5/64 X 1/2	$0.02
MS24665-281	-3-2	3/32 X 1/2	$0.02
MS24665-283	-3-3	3/32 X 3/4	$0.02
MS24665-285	-3-4	3/32 X 1	$0.04
MS24665-287	-3-5	3/32 X 1-1/4	$0.03
MS24665-289	-3-6	3/32 X 1-1/2	$0.04
MS24665-292	-3-8	3/32 X 2	$0.05
MS24665-349	-4-2	1/8 X 1/2	$0.03
MS24665-351	-4-3	1/8 X 3/4	$0.03
MS24665-353	-4-4	1/8 X 1	$0.04
MS24665-355	-4-5	1/8 X 1-1/4	$0.05
MS24665-357	-4-6	1/8 X 1-1/2	$0.06
MS24665-359	-4-7	1/8 X 1 3/4	$0.07
MS24665-360	-4-8	1/8 X 2	$0.06
MS24665-362	-4-10	1/8 X 2-1/2	$0.08
MS24665-426	-5-9	5/32 X 2	$0.20
MS24665-498	-6-8	3/16 X 2	$0.13
MS24665-500	-6-10	3/16 X 2 1/2	$0.32

CORROSION RESISTANT STEEL			
Part No.	AN381 Dash No.	Dia. & Length	Price
MS24665-22	-1-8	1/32 X 1/2	$0.04
MS24665-24	-1-12	1/32 X 3/4	$0.05
MS24665-26	-1-16	1/32 X 1	$0.06
MS24665-151	-2-8	1/16 X 1/2	$0.04
MS24665-153	-2-12	1/16 X 3/4	$0.04
MS24665-155	-2-16	1/16 X 1	$0.06
MS24665-157	-2-20	1/16 X 1-1/4	$0.08
MS24665-159	-2-24	1/16 X 1-1/2	$0.08
MS24665-161	-2-28	1/16 X 1-3/4	$0.10
MS24665-162	-2-32	1/16 X 2	$0.13
MS24665-227	-25-8	5/64 X 1/2	$0.07
MS24665-229	-25-12	5/64 X 3/4	$0.09
MS24665-298	-3-8	3/32 X 1/2	$0.07
MS24665-300	-3-12	3/32 X 3/4	$0.09
MS24665-302	-3-16	3/32 X 1	$0.10
MS24665-304	-3-20	3/32 X 1-1/4	$0.13
MS24665-306	-3-24	3/32 X 1-1/2	$0.13
MS24665-309	-3-32	3/32 X 2	$0.14
MS24665-366	-4-8	1/8 X 1/2	$0.10
MS24665-368	-4-12	1/8 X 3/4	$0.12
MS24665-370	-4-16	1/8 X 1	$0.15
MS24665-372	-4-20	1/8 X 1-1/4	$0.18
MS24665-374	-4-24	1/8 X 1-1/2	$0.20
MS24665-377	-4-32	1/8 X 2	$0.25
MS24665-379	-4-40	1/8 X 2-1/2	$0.44
MS24665-444	-5-32	5/32 X 2	$0.53
MS24665-516	-6-32	3/16 X 2	$0.38
MS24665-518	-6-40	3/16 X 2 1/2	$0.98

Discount: 25% for quantities of 100 or more of the same Part No.

AN386 TAPER PINS



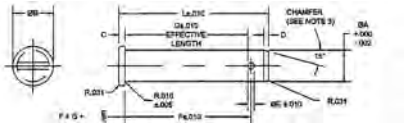
Manufactured from alloy steel, minimum tensile strength 125,000 PSI. Cadmium plated per spec. QQ-P-416, Type I, Class 3. Taper: 0.500"/ft. Use with AN975 taper pin washer, AN320 shear castle nut and cotter pin or with AN364 elastic stop nut. When installed, the small end of the tapered shank should protrude no more than 1/16" above the surface of the assembly. The first dash number is the Brown & Sharpe taper pin reamer number and the second dash number is the grip length in eighths of an inch. For undrilled threaded shank add the letter "A" after second dash number.

First Dash No.	1	2	3	4	5	6	7	8	9	10	10A
Thread T	10-32	10-32	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18	3/4-16	7/8-14	7/8-14
A	7/16	7/16	29/64	33/64	35/64	35/64	19/32	21/32	47/64	51/64	51/64
C±.005	.141	.141	.196	.250	.313	.360	.422	.482	.660	.773	.773
D±.002	.205	.255	.317	.355	.455	.505	.605	.755	.905	1.050	1.153
E +.010, -.000	No.50 (.070)	No.50 (.070)	No.48 (.076)	No.48 (.076)	No.36 (.106)	No.36 (.106)	No.36 (.106)	No. 28 (.141)	No.28 (.141)	No.28 (.141)	No.28 (.141)
F	1/2	1/2	1/2	1/2	1/2	3/4	3/4	1	1	1-1/4	1-1/4
G	5/16	5/16	21/64	21/64	23/64	23/64	13/62	15/32	35/64	39/64	39/64
P	3/64	3/64	3/64	1/16	1/16	1/16	1/16	5/64	3/32	3/32	3/32

AN386-1-6.....$5.90
AN386-1-6A.....$6.25
AN386-1-7.....$8.50
AN386-1-7A.....$6.95
AN386-1-8.....$7.50
AN386-1-9.....$8.30
AN386-1-9A.....$7.92
AN386-1-10A.....$5.97
AN386-1-11.....$7.75
AN386-2-8.....$14.90
AN386-2-9A.....$6.94
AN386-2-10.....$9.65
AN386-2-12.....$13.60
AN386-2-13.....$11.85
AN386-2-14.....$8.75
AN386-3-12.....$22.70
AN386-3-12A.....$8.50
AN386-3-14.....$9.80
AN386-4-13.....$19.50

New Surplus AN386-3-12A Taper Pin ..... P/N 04-02149 .....$9.97

CLEVIS PINS



Made of alloy steel per specification MIL-P-5673 and cadmium plated per QQ-P-416, Type II, Class 3. Provided with drilled hole for cotter pin. Used with clevis forks and in secondary controls which are not subjected to continuous operation. Order by AN number and dash number. Example: AN395-41 is a 5/16"dia. pin with an effective length of 1-9/32". Equivalent MS number is MS20392-4C41. Less 20% in lots of 25 per size. Request quotation on unlisted sizes. NOTE: Clevis pin prices fluctuate with changes in cost/availability at suppliers.

Dash No.	Effective Length (In.)	AN392 MS20392 -1C 1/8"	AN393 MS20392 - 2C 3/16"	AN394 MS20392 -3C 1/4"	AN395 MS20392 - 4C 5/16"	AN396 MS20392 -5C 3/8"
-7	7/32	$0.42	$0.51	--	--	--
-9	9/32	$0.49	$0.48	--	--	--
-11	11/32	$0.52	$0.47	$0.77	$0.79	--
-13	13/32	$0.41	$0.59	$0.68	--	--
-15	15/32	$0.54	$0.61	$0.42	$1.47	--
-17	17/32	$0.52	$0.46	$0.62	$0.98	$1.70
-19	19/32	$0.52	$0.53	$0.56	$0.89	$0.94
-21	21/32	$0.54	$0.49	$0.90	$0.62	--
-23	23/32	$0.62	$0.48	$0.52	$1.33	$1.36
-25	25/32	$0.53	$0.55	$0.89	$2.32	$0.90
-27	27/32	$0.65	$0.49	$0.85	$0.94	$1.38
-29	29/32	$0.68	$0.56	$0.58	$0.80	--
-31	31/32	$0.61	$0.62	$0.74	$0.87	--
-33	1-1/32	$0.58	$0.47	$0.66	$0.87	$2.42
-35	1-3/32	$0.49	$0.62	$0.48	$0.92	$2.96
-37	1-5/32	$0.47	$0.69	$0.62	$1.17	--
-39	1-7/32	$0.93	$0.69	$0.96	$0.97	--
-41	1-9/32	$0.54	$0.73	$0.69	$0.99	$1.63
-43	1-11/32	$0.54	$0.89	$0.94	$2.28	--
-45	1-13/32	$0.54	$0.61	$0.60	$1.42	$0.77
-47	1-15/32	$0.94	$0.65	$0.67	$0.98	$1.54
-49	1-17/32	$1.10	$1.32	$0.46	--	--
-51	1-19/32	--	$0.99	$1.18	$1.26	--
-53	1-21/32	$0.55	$0.94	$0.88	$0.79	$0.90
-55	1-23/32	$0.72	$0.72	$0.79	--	$4.80
-57	1-25/32	$0.74	$1.32	$0.82	$4.95	--
-59	1-27/32	$0.70	$1.12	$1.65	--	$1.85
-61	1-29/32	$0.99	$1.47	$0.96	--	--
-63	1-31/32	$3.45	$0.77	$0.84	$8.90	$0.72
-65	2-1/32	$0.88	$0.66	$0.63	--	$1.16
-67	2-3/32	$1.83	$1.08	$1.35	--	$1.17
-69	2-5/32	$0.98	$0.97	$1.28	$1.37	$1.14
-71	2-7/32	--	$1.76	--	$8.60	--
-73	2-9/32	--	$3.45	$1.23	--	$3.60
-75	2-11/32	--	--	$0.84	--	CALL
-79	2-15/32	--	$0.87	$3.95	--	$1.25
-81	2-17/32	--	$4.35	$1.12	--	$9.50
-83	2-19/32	--	$1.79	--	--	--
-85	2-21/32	--	$1.69	$1.69	$0.87	--
-87	2-23/32	--	$1.47	--	--	--
-89	2-25/32	--	$1.93	--	$1.22	--
-91	2-27/32	--	--	--	--	--
-93	2-29/32	--	$0.97	--	--	$1.43
-95	2-31/32	--	-	$1.23	--	--
-97	3-1/32	--	- -	$4.60	- -	$5.50
-99	3-3/32	--	- -	--	--	--
-101	3-5/32	--	- -	--	--	--

AN397-27 - 7/16" ..... P/N AN397-27 .....$3.95

LOCK PINS

AN415-2 corrosion resistant steel wire cowl lock pins 1-15/16" long, .080" dia. wire.
P/N AN415-2.....$0.44 Ea.
$35.20 for 100

Commercial steel cadmium plated wire lock pins 1-1/4" long, .062" dia. wire. P/N 04-05100 .....$0.08 Ea.
$6.40 for 100

COWLING SAFETY PINS

Positive locking pins that can be readily used without aid of tools. Made of spring steel, cadmium plated, 1-1/16" long.

.051" Wire Dia. .....AN416-1.....$0.20 Ea.....$16.00/100
.041" Wire Dia. .....AN416-2.....$0.18 Ea.....$14.40/100

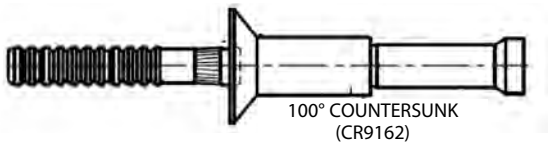
TUBULAR PIN MS16562

MS16562-200.....P/N 02-00096.....$0.60
MS16562-224.....P/N 04-01715.....$0.79

HA

CHERRY COMMERCIAL RIVETS

CHERRY AEROSPACE RIVETS - SELF-PLUGGING CHERRY RIVETS

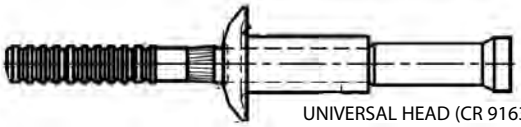


100° COUNTERSUNK
(CR9162)

The self-plugging Cherry Blind Rivet is a 2-piece assembly - a hollow rivet and an inner member or stem, drawn into or through the hollow rivet. Cherry CR162 & CR163 series rivets are now replaced by CR9162 & CR9163 series rivets which are less expensive but does require the use of a rivet gun that comes with the req. nosepiece.

P/N 04-01515 Pulling Head (required) $562.00

G-29 Rivet Gun - Comes equipped with a 728A9-3 nosepiece to install 3/32" rivets and has a 728A9-104 nosepiece stored in the handle for installing 1/8" rivets. .....P/N 12-00701 ..... $118.75



UNIVERSAL HEAD (CR 9163)

Part No.	Head Style	Nominal Dia.	Grip Range	Price		
				Each	100	1000
CR9162-4-2	Csk	1/8"	.063-.125	$0.22	$19.80	$176.00
CR9162-4-4			.188-.250	$0.24	$21.60	$192.00
CR9162-4-6			.313-.375	$0.42	$37.80	$336.00
CR9162-4-8			.438-.500	$0.56	$50.40	$448.00
CR9163-4-2	Univ.	1/8"	.063-.125	$0.27	$24.30	$216.00
CR9163-4-4			.188-.250	$0.22	$19.80	$176.00
CR9163-4-6			.313-.375	$0.34	$30.60	$272.00
CR9163-5-2	Univ.	5/32"	.063-.125	$0.29	$26.10	$232.00

HA

CHERRY N RIVETS

Break mandrel rivets Conform to MIL-R-24243 & IFI-114 Standards

LOW COST

Substantial savings in installed costs can be realized when Cherry N Rivets are substituted for spotwelds, screws or bolts.

FAST INSTALLATION

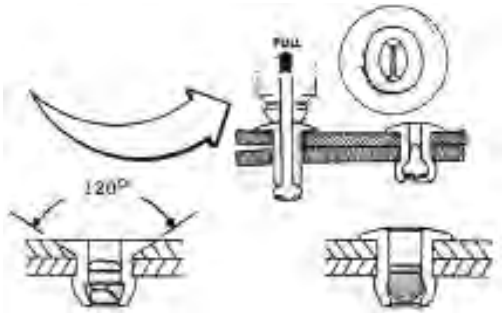
Quick and easy to use with hand or power riveters, Cherry N Rivets have endless fastening applications in manufacturing, maintenance.

UNIQUE FEATURES

Unusual mandrel design of Cherry N Rivets holds rivet and mandrel firmly together prior to installation and insures positive mandrel retention in the installed rivet.

NO MANDREL POP OUTS—

As the mandrel is drawn into the rivet, the end of the rivet sleeve closes in an elliptical configuration... locking the mandrel firmly in place!



FLUSH HEAD PROTRUDING HEAD

CHERRY N RIVET IDENTIFICATION CODE

First letter is rivet material:
A = 5052 Aluminum B = 5056 Aluminum C = Stainless
M = Monel S= Steel U = Copper

Second letter is mandrel material:
A = 7178 Aluminum S = Steel C = Stainless

Third letter is head style:
P = Protruding L = Large C = Flush

First number is rivet diameter in 32nds of an inch:
For example,—4 is 4/32nds or 1/8" diameter

Second number is rivet maximum grip length in 16ths of an inch:
For example,—6 is 6/16ths or 3/8" grip length

MINIMUM RIVET SHEAR AND TENSILE STRENGTH (IBS.)
CHERRY N RIVETS

RIVET DIAM. MAND.	BS SERIES ALUM RIVET STEEL MAND. GRADE 19		MS SERIES MONEL RIVET STEEL MAND. GRADE 40		CC SERIES STAINLESS RIVET STAINLESS GRADE 51	
	Shear	Tens	Shear	Tens	Shear	Tens
3/32	125	175	200	300	230	280
1/8	200	325	350	525	450	600
5/32	325	450	600	900	750	1000
3/16	430	650	750	1100	1000	1300
1/4	750	1050	1450	2150	1700	2250

CHERRY Q RIVETS

Structural—Self-plugging rivets

HIGH SHEAR STRENGTH

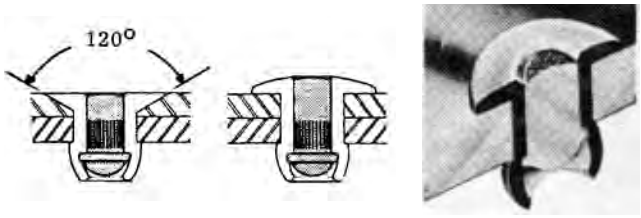
Cherry Q Rivet mandrel plugs the entire length of the rivet sleeve, providing full shear strength values for structural or load-bearing applications.

SEALING CAPABILITY

Specially designed mandrel of the Q Rivet is engineered to effect a seal, upon installation which offers resistance to leakage.

VIBRATION RESISTANT

Rivet sleeve curls over end of mandrel to insure its positive retention.



FLUSH HEAD PROTRUDING HEAD

CHERRY Q RIVET IDENTIFICATION CODE

First letter is rivet material:
A = 5052 Aluminum B = 5056 Aluminum C = Stainless
M = Monel S= Steel

Second letter is mandrel material:
A = 7178 Aluminum S = Steel C = Stainless

Third letter is head style:
P = Protruding L = Large C = Flush

Fourth letter is type of rivet:
Q = Cherry Q Rivet, structural, self-plugging

First number is rivet diameter in 32nds of an inch:
For example,—6 is 6/32nds or 3/16" diameter

Second number is rivet maximum grip length in 1/16 of an inch:
For example,—8 is 8/16ths or 1/2" grip length

MINIMUM RIVET SHEAR AND TENSILE STRENGTH (IBS.)
CHERRY Q RIVETS

RIVET DIAM.	BS SERIES ALUM RIVET STEEL MAND. GRADE 19		MS SERIES MONEL RIVET STEEL MAND. GRADE 40		CC SERIES STAINLESS RIVET STAINLESS MAND. GRADE 51	
	Shear	Tens	Shear	Tens	Shear	Tens
1/8	350	325	650	525	700	600
5/32	525	450	950	900	1050	1000
3/16	750	650	1450	1100	1650	1300
1/4	1250	1050	2350	2150	2450	2250

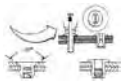
NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

"POP" RIVETS – RIVNUTS



For conversion of the most frequently used "Pop" rivets to the corresponding CHERRY numbers, see the following table. NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED. Attention: Avdel has changed the mandrel design for some of their Cherry "N" Rivets. The change has not effected the strength of the rivet.

CHERRY COMMERCIAL RIVET PRICE TABLE

G

Grip is total of material thickness

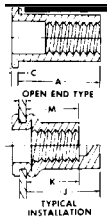
CHERRY – Commercial rivets with maximum grip length greater than the material thickness may be substituted for a rivet of the required grip length.

Cherry Rivet Type	Cherry Rivet Number	USM "POP" Rivet Equiv.*	Rivet Dia.	Drill Size	Cherry Max Rivet Grip Length	Price** Price Ea. 1-99	Price Per 100 10% Discount	Price for 600 12% Discount	Price for 1000 15% Discount	Price for 3000 18% Discount	Price for 10,000 20% Discount
"N"	BSP-41	AD41BS	1/8"	30	Up to .062	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSPS-42				.063-.125	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSPS-43				.126-.187	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSPS-44				.188-.250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSP-46				.313-.375	$0.06	$5.40	$31.68	$51.00	$147.60	$480.00
	BSP-48				.438-.500	$0.06	$5.40	$31.68	$51.00	$147.60	$480.00
"N"	BSCS-34	BSC-34	3/32"		.126-.250	$0.06	$5.40	$31.68	$51.00	$147.60	$480.00
	BSC-43	AK43BS	1/8"	30	.126-.187	$0.06	$5.40	$31.68	$51.00	$147.60	$480.00
	BSC-44	44BS			.188-250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	BSC-46	A46SC	1/8"		.313-.375	$0.09	$7.20	$40.50	$63.00	$175.50	$539.95
"N"	MSP-32	MD319BS	3/32"	41	.020-.125	$0.30	$27.00	$158.40	$255.00	$738.00	$2,400.00
	-42	424BS	1/8"		.063-.125	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	-43	429BS			.126-.187	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	-44	435BS			.188-.250	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
	-45	440BS			.251-.312	$0.23	$20.70	$121.44	$195.50	$565.80	$1,840.00
	-54	530BS	5/32"	20	.126-.250	$0.29	$26.10	$153.12	$246.50	$713.40	$2,320.00
"N"	CCC-32	MK319BS	3/32"	41	.020-.125	$0.10	$9.00	$52.80	$85.00	$246.00	$800.00
	-42	424BS	1/8"	30	.062-.125	$0.11	$9.90	$58.08	$93.50	$270.60	$880.00
	-44	444BS	1/8"	30	.188-.250	$0.19	$17.10	$100.32	$161.50	$467.40	$1,520.00
"N"	CCP-32		3/32"		.020-.125	$0.19	$17.10	$100.32	$161.50	$467.40	$1,520.00
	CCP-42	SSD42SSDS	1/8"	30	.062-.125	$0.15	$13.50	$79.20	$127.50	$369.00	$1,200.00
	CCP-43		1/8"	30	.126-.187	$0.12	$13.50	$79.20	$127.50	$369.00	$1,200.00
	-44				.188-250	$0.07	$6.30	$36.96	$59.50	$172.20	$560.00
	-46			30	.313-.375	$0.12	$10.80	$63.36	$102.00	$295.20	$960.00
"N"	SSP-42		1/8"	30	.062-.125	$0.03	$2.70	$15.84	$25.50	$73.80	$240.00
"N"	-44				.188-250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	-45		1/8"		.251-.312	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	04-01952	CSPS4-4	1/8"	30	.188-.250	$0.32	$28.80	$168.96	$272.00	$787.20	$2,560.00
	04-01953	CSPS4-8	1/8"	30	.438-.500	$0.79	$71.10	$417.12	$671.50	$1,943.40	$6,320.00
"N"	SSC-43		1/8"		.126-.187	$0.04	$3.60	$79.20	$127.50	$369.00	$320.00
	SSC-44	S44SC	1/8"		.188-.250	$0.04	$3.60	$21.12	$34.00	$98.40	$320.00
	04-01955	SSD32BS	3/32"		.217 (Max)	$1.40	$126.00	$739.20	$1,190.00	$3,444.00	$11,200.00
"Q"	BSPQ-41	AD41H	1/8"	30	Up to .062	$0.20	$18.00	$105.60	$170.00	$492.00	$1,600.00
	-42	AD42H		30	.062-.125	$0.15	$13.50	$79.20	$127.50	$369.00	$1,200.00
	-43	AD43H			.126-.187	$0.19	$17.10	$100.32	$161.50	$467.40	$1,520.00
	-44	AD44H			.188-.250	$0.34	$30.60	$179.52	$289.00	$836.40	$2,720.00
	-46	AD46H			.313-.375	$0.17	$15.30	$89.76	$144.50	$418.20	$1,360.00
"Q"	AAPQ-42	AD43H	1/8"	30	.125	$0.15	$13.50	$79.20	$127.50	$369.00	$1,200.00
	-44	AD44H		30	.250	$0.18	$16.20	$95.04	$153.00	$442.80	$1,440.00
	CCPQ-43	CCPQ-43	1/8"	30	.337	$0.28	$25.20	$147.84	$238.00	$688.80	$2,240.00
	CCPQ-44	CCPQ-44	1/8"	30	.400	$0.39	$31.20	$175.50	$273.00	$760.50	$2,339.77

*All USM "Pop" rivets are 1/64" larger than nominal diameter. Presented here for cross reference purposes only. **Quotations on larger quantities.

CLOSED END POP RIVETS

Model	Head	Size	Grip	Part No.	Price
AD42H	Dome	1/8"	.063-.125	04-02334	$0.10
AD43H	Dome	1/8"	.125-.187	04-02335	$0.12
AK42H	CSK	1/8"	.063-.125	04-02336	$0.11
AK43H	CSK	1/8"	.125-.187	04-02337	$0.11



RIVET NUTS (OPEN END)

The Rivet nut is a one-piece internally threaded and counter-bored tubular aluminum rivet that can be pulled up or headed while working entirely from one side, forming a bulge or head on the blind side. This upset is large enough to resist being pulled through metal or plastic even under conditions of eccentric load. It overcomes the difficulty of installing brackets, handles or other attachments to tubular pieces.

FLAT HEAD

Part No.	Type	Grip Range	Length	Thread	Price/ea.
NAS1329A06K75	Keyed	.010-.075	.438	6-32	$0.16
NAS1329A06-75	Keyless	.010-.075	.438	6-32	$0.17
NAS1329A06K120	Keyed	.075-.120	.500	6-32	$0.26
NAS1329A06-120	Keyless	.075-.120	.500	6-32	$0.23
NAS1329A08K75	Keyed	.010-.075	.438	8-32	$0.22
NAS1329A08-75	Keyless	.010-.075	.438	8-32	$0.22
NAS1329A08K120	Keyless	.075-.120	.500	8-32	$0.36
NAS1329A08-120	Keyless	.075-.120	.500	8-32	$0.18
NAS1329A3K80	Keyed	.010-.075	.438	10-32	$0.23
NAS1329A3-80	Keyless	.010-.075	.438	10-32	$0.26
AEA10K140	Keyed	.075-.140	.500	10-32	$0.49
AEA10-140	Keyless	.075-.140	.500	10-32	$0.53

COUNTERSUNK HEAD

Part Number Keyed	Part Number Keyless	Grip Range	Length	Thread	Price Each
NAS1330A06K106	NAS1330A06-106	.065-.106	.500	6-32	$0.29
NAS1330A08K106	NAS1330A08-106	.065-.106	.500	8-32	$0.27

AVEX NON-STRUCTURAL BLIND RIVETS

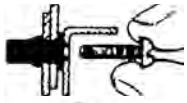
Avex non- structural blind rivets, with aluminum body and steel stem, are similar to the Cherry BSP and BSC commercial rivets. We stock the standard dome head, 120° countersunk head and the low-profile "Lo-Pro" dome head rivets in diameters up to 3/16".

Head Style	Part No.	Dia.	Grip Range	Price Each	Price 100	Price 1000
Dome	1601-0410	1/8"	To .187	$0.07	$6.30	$56.00
	1601-0414	1/8"	To .312	$0.08	$7.20	$64.00
	1601-0613	3/16"	To .250	$0.08	$7.20	$64.00
	1601-0619	3/16"	To .437	$0.06	$5.40	$48.00
	04-01949	5/32"	.046-.250	$0.11	$9.90	$88.00
Countersunk (120°)	1604-0412	1/8"	To .250	$0.09	$8.10	$72.00
	1604-0514	5/32"	To .312	$0.14	$12.60	$112.00
	1604-0615	3/16"	To .312	$0.12	$10.80	$96.00
Lo-Pro	1661-0613	3/16"	To .250	$0.15	$13.50	$120.00
	1661-0621	3/16"	To .500	$0.11	$9.90	$88.00

POP RIVETS

P60551 SS Rivet - SS Mandrel. 3/16 diameter x 3/8 head x 3/8 to 1/2 range. Blind open end pop rivets are available in a variety of sizes, types, and materials to fit most any application. Simple three step riveting make quick work of most any fastening job. These open end rivets resemble conventional tubular rivets when set, but retain the mandrel within the rivet body for added strength.

Size	Grip	Part No.	Price
1/8" dia. x 1/4" head	3/8-1/2	15-05806	$0.45
3/16" dia. x 5/8" head	5/8-3/4	15-05809	$0.35



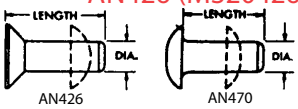
BLIND NUT PLATE - Installed Rivet Nut also serve as blind nut plates for simple screw attachments.

SPRING LOADED CENTER PUNCH

Spring loaded center punch works great with universal aluminum head rivets, oval head and round head rivets. ..... P/N 12-02464..... $36.95

HA

SOLID ALUMINUM RIVETS
AN426 (MS20426) AN470 (MS20470)



"A" rivets are "soft". They are fabricated from 1100-grade aluminum and have a tensile strength of 16,000 PSI. "AD" rivets are fabricated from 2117 aluminum and heat treated to the T4 condition. They have a shear strength of 26,000 PSI and a tensile strength of 38,000 PSI. All rivets sold in 1/4 lb. & 1/8 lb. packages.

Dash No.	Dia. x L	Price per 1/4 Lb. AN426A	Price per 1/4 Lb. AN426AD	Qty Lb.	Price per 1/4 Lb AN470A	Price per 1/4 Lb AN470AD	Qty Lb.
3-2	3/32 x 1/8	$12.63	$15.94	6406	$12.48	$11.68	4107
3-3	3/32 x3/16	$10.90	$9.73	5003	$10.19	$11.21	3485
3-3.5	3/32 X 7/32	---	$45.50	5618	---	---	---
3-4	3/32 x 1/4	$10.88	$8.95	4103	$8.20	$8.63	3027
3-5	3/32 x 5/16	$8.88	$8.90	3478	$7.23	$7.88	2675
3-6	3/32 x 3/8	$7.94	$9.19	3018	$6.63	$7.50	2397
3-7	3/32 x 7/16	$6.65	$7.63	2666	$7.48	$7.38	2171
3-8	3/32 x 1/2	$9.13	$7.93	2161	$7.21	$7.13	1826
3-10	3/32 x 5/8	$7.24	$8.13	1817	$6.99	$10.38	1576
3-12	3/32 x 3/4	$7.13	$7.93	1640	$6.38	$6.65	1403
3-14	3/32 x 7/8	$7.68	$7.88	1567	$8.68	$6.45	1386
3-16	3/32 x 1	$6.24	--	1378	$3.14	$8.99	1237
4-3	1/8 x 3/16	$8.13	$7.14	2810	$6.19	$5.93	1734
4-4	1/8 x 1/4	$6.13	$6.18	2308	$4.93	$5.38	1529
4-4.5	1/8 x 9/32	---	---	---	---	$24.60	1925
4-5	1/8 x 5/16	$4.88	$5.48	1958	$5.13	$5.23	1367
4-5.5	1/8 X 11/32	---	---	---	---	$25.50	1674
4-6	1/8 x 3/8	$4.99	$5.39	1700	$5.13	$5.18	1236
4-7	1/8 x 7/16	$5.38	$5.49	1502	$5.40	$5.21	1128
4-8	1/8 x 1/2	$4.88	$4.88	1346	$4.91	$4.74	1037
4-9	1/8 x 9/16	$5.13	$5.88	1219	$5.14	$5.13	960
4-10	1/8 x 5/8	$4.56	$5.38	1025	$4.73	$4.63	836
4-12	1/8 x 3/4	$4.74	$4.75	885	$4.94	$4.88	740
4-13	1/8 x 13/16	$11.48	$5.41	797	$4.83	$5.41	715
4-14	1/8 x 7/8	$6.58	$5.88	631	$6.40	$5.88	689
4-16	1/8 x 1	$5.49	$5.48	592	$4.45	$5.24	594
4-20	1/8 x 1-1/4	$4.71	$5.69	467	$5.99	$5.88	521
4-22	1/8 x 1-3/8	---	$5.31	328	$5.38	$5.13	496
5-4	5/32 x 1/4	$4.81	$5.13	1440	$4.88	$4.94	888
5-5	5/32 x 5/16	$4.88	$5.13	1226	$4.88	$4.63	850
5-6	5/32 x 3/8	$3.88	$4.90	1079	$3.69	$4.64	802
5-7	5/32 x 7/16	$4.65	$4.98	946	$6.63	$4.38	672
5-8	5/32 x 1/2	$4.16	$4.68	849	$4.38	$4.89	621
5-9	5/32 x 9/16	$4.88	$4.88	770	$4.71	$4.63	578
5-10	5/32 x 5/8	$4.63	$4.19	649	$3.88	$4.98	507
5-12	5/32 x 3/4	$5.49	$4.44	494	$4.70	$4.49	407
5-13	5/32 x .812	---	---	---	---	$6.39	514
5-16	5/32 x 1	$4.94	$4.81	450	$4.06	$3.94	366
5-22	5/32 x 1-3/8	$5.99	$5.49	368	$4.69	$4.63	314
6-4	3/16 x 1/4	---	$18.95	1134	$16.50	$17.95	1134
6-5	3/16 x 5/16	$4.13	$4.65	846	$4.13	$4.49	515
6-7	3/16 x 7/16	$4.24	$4.96	728	$3.43	$4.38	436
6-8	3/16 x 1/2	$17.95	$16.60	395	$14.75	$17.50	395
6-9	3/16 x 9/16	$15.00	$20.80	---	$16.50	$18.50	354
6-10	3/16 x 5/8	$4.13	$4.44	451	$3.49	$4.38	334
6-14	3/16 x 7/8	$4.69	$4.63	390	$4.38	$4.38	299

10% Discount for 5lbs. of rivets or more (per P/N)

SOLID RIVET ASSORTMENT

"AD" indicates Hard 2117 aluminum alloy. These rivets are heat treated and have a minimum tensile strength of 38,000 PSI. "A" indicates Soft 100 pure aluminum and have a minimum tensile strength of 16,000 PSI.

Each kit contains 1/8 lb each of the following 12 sizes:
3/32 (3-4, 3-6, 3-8); 5/32 (5-4, 5-5, 5-6, 5-8); 1/8 (4-4, 4-6, 4-8); 3/16 (6-6, 6-8)

Pack C .....AN470AD, Universal Hard..... P/N 04-00357..... $34.25
Pack D .....AN470A, Universal Soft..... P/N 04-00358..... $32.00
Pack E.....AN426AD, 100° CSK Hard..... P/N 04-00359..... $36.75
Pack F.....AN426A, 100° CSK Soft..... P/N 04-00361..... $36.25

OVERSIZE AND HALF SIZE RIVETS

HALF-SIZE LENGTH RIVETS - These flush head AN426 rivets are ideal for those situations where one length is just too short & the next length is too long.

Part No.	Dia.	Length	Price Per 1/8 lb.
AN426AD-3-3.5	3/32"	7/32"	$45.50
AN426AD-3-4.5	3/32"	9/32"	$41.50
AN426AD-3-5.5	3/32"	11/32"	$46.50

OVERSIZE SHANK RIVETS - These NAS1097 rivets feature a 1/8" diameter shank with a head size that of a 3/32" rivet. Perfect when rivet hole becomes enlarged requiring 1/8" shank but 3/32" head matches rest of your 3/32" rivets.

Part No.	Dia.	Length	Price Per 1/8 lb.
NAS1097AD-4-3.5	1/8"	7/32"	$32.90
NAS1097AD-4-4	1/8"	1/4"	$30.60
NAS1097AD-4-5	1/8"	5/16"	$29.90
NAS1097AD-4-6	1/8"	3/8"	$29.70

CHERRYMAX RIVETS

100° Countersunk Head (CR3242 & CR3212)

Universal Head (CR3243 & CR3213)

Due to the large bulbed blind head, similar to that of a solid rivet, the Cherrylock and CherryMax rivets are especially suited for double dimpled or high vibration applications. They can be used as replacements for some solid rivets and are excellent for use in fiberglass or composites as the rivet spreads in a way that prevents crazing or cracking of the material. NOTE: CR3212 & CR3213 are nominal diameters. CR3242 & CR3243 are oversized diameters and measure 1/64" more than listed diameter.
Install with P/N 12-03105 G-27 Hand Gun.

Dash #	Dia.	CR3212 Grip Range	CR3213 Grip Range	Each	Price 100
4-1	.126	-----	.025-.062	---	---
4-2		.063-.125	.063-.125	$0.54	$48.60
4-3		.126-.187	.126-.187	$0.68	$61.20
4-4		.188-.250	.188-.250	$0.72	$64.80
4-5		.251-.312	.251-.312	$0.75	$67.50
4-6		.313-.375	.313-.375	$0.75	$67.50
5-2	.157	.065-.125	.063-.125	$0.66	$59.40
5-3		.126-.187	.126-.187	$0.65	$58.50
5-4		.188-.250	.188-.250	$0.90	$81.00
5-5		.251-.312	.251-.312	$0.84	$75.60
5-6		.313-.375	.313-.375	$1.06	$95.40
6-10	.189	.563-.625	.563-.625	$2.75	$247.50

Dash #	Dia.	CR3242 Grip Range	CR3243 Grip Range	Each	Price 100
4-1	.140	.032-.063	.025-.062	$0.82	$73.80
4-2		.063-.125	.063-.125	$0.68	$61.20
4-3		.126-.187	.126-.187	$0.56	$50.40
4-4		.188-.250	.188-.250	$0.64	$57.60
4-5		.251-.312	.251-.312	$0.83	$74.70
4-6		.313-.375	.313-.375	$0.93	$83.70
5-2	.173	.063-.125	.063-.125	$0.82	$73.80
5-3		.126-187	.126-.187	$0.78	$70.20
5-4		.188-.250	.188-.250	$0.83	$74.70
5-5		.251-.312	.251-.312	$0.86	$77.40
5-6		.313-.375	.313-.375	$0.99	$89.10

NOTE: SUBJECT TO PRICE AND AVAILABILITY OF CHERRY BRAND RIVETS. EQUIVALANT RIVETS MAY BE FURNISHED.

CHERRYMAX GRIP GAUGE

Measures rivet diameter and length, P/N 12-00217 ..... $8.50

RIVET/RIVNUT BACK MARKERS

Used to locate pre-drilled holes in the wing ribs, fuel tank covers, panels, skin. Pre-drill the ribs, screw in the back markers, lay the skin sheet over the top, tap with a hammer, turn the sheet over, and drill the holes. This is especially useful for rivnut installation. Due to the large size of the hole required, small errors in location can lead to the "Oh darn, I missed the rib syndrome". Backmarkers can save you hours of frustration. Two sizes of threaded backmarkers are available. We recommend using the 04-00131 for wing ribs. Drilling the wing ribs with a 3/32" drill. Drop in the back markers. Mark the skin by taping with a soft hammer. Turn the skin over and drill the skin with a 3/32" drill. Cleco the skin into position enlarge the holes with #30 drill & cleco. Now you are ready to rivet.

Nut Plate	Marker Size	Drill Size	Part No.	Price Ea.
10-32*	—	—	04-00117	$0.98
8-32*	—	—	04-00119	$0.98
3/8-24	.327	5/8"	04-00121	$1.13
5/16-24	.265	1/2"	04-00122	$1.15
1/4-28	.209	1/2	04-00123	$1.15
10-32	.154	3/8"	04-00124	$0.98
8-32	.128	3/8"	04-00127	$0.98
6-32	.102	3/8"	04-00129	$0.98
3/32" hole	.093	3/8"	04-00131	$0.98

NUTSERTS

The A-T Series Insert is unique in that it can be installed into most any material above .030/,76 mm in thickness. As the A-T Series is installed, the threaded portion is completely swaged 360° into the sleeve portion and the hole. This permits the A-T Series to be used with Grade 8/metric 12.9 mating screws.
The A-T Series Insert is installed using light-weight, hand held pneumatic tools that can be located at any position in your product's assembly sequence. The A-T Series Insert can be installed either prior to or after finish.

360°SWAGING HOW IT WORKS FOR YOU

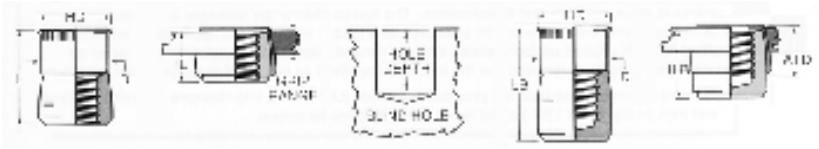
As the A-T Series Insert is installed, the threaded nut portion is drawn into the upper sleeve portion.

As this occurs, a 360° swaging action takes place anchoring the A-T Series in the parent material.

NUTSERT HOLE SIZE / MATERIAL THICKNESS CHART

Installation hole size for the A-T Series Insert is determined by the parent material's thickness and density. The thicker the material the larger the hole required to allow full 360° installation swaging. The application should be tested before hole size is specified.

THREAD SIZE	.030-.090 MAT. THICKNESS		.091-.124 MAT THICKNESS		.125-.186 MAT. THICKNESS		.187-OVER MAT. THICKNESS	
	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL
4-40 UNC	3/16	.1875	#10	.1935	#10	.1935	#9	.1960
6-32 UNC	7/32	.2188	#2	.2210	#1	.2280	#1	.2280
8-32 UNC	1/4	.2500	"F"	.2570	17/64	.2656	17/64	.2656
10-24 UNC	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
10-32 UNF	9/32	.2812	"L"	.2900	"L"	.2900	19/64	.2969
1/4-20 UNC	3/8	.3750	3/8	.3750	"W"	.3860	25/64	.3906
1/4-28 UNC	3/8	.3750	3/8	.3750	"W"	.3860	25/64	.3906
5/16-18 UNC	1/2	.5000	1/2	.5000	33/64	.5156	33/64	.5156
5/16-24 UNC	1/2	.5000	1/2	.5000	33/64	.5156	33/64	.5156
3/8-16 UNC	9/16	.5625	9/16	.5625	37/64	.5781	37/64	.5781
1/2-13 UNC	3/4	.7500	49/64	.7656	25/32	.7810	51/64	.7970



THREAD SIZE	THREAD CALL OUT	HD ±.005	L ±.015	D MAX.	IL MAX.	LB ±.015	ILB MAX.	IATD** MAX.	HOLE DEPTH MIN.	PART NO.	PRICE EACH
4-40 UNC	440	.211	.370	.1875	.205	.660	.495	.395	.400	ATS2-440	$0.29
6-32 UNC	632	.240	.370	.2185	.205	.675	.505	.410	.400	ATS2-632	$0.27
8-32 UNC	832	.269	.370	.2495	.205	.675	.505	.410	.400	ATS2-832	$0.26
10-24 UNC	1024	.306	.370	.2805	.205	.685	.520	.385	.400	ATS2-1024	$0.38
10-32 UNF	1032	.306	.370	.2805	.205	.685	.520	.385	.400	ATS2-1032	$0.25
1/4-20 UNC	420	.400	.515	.3745	.275	1.005	.760	.615	.540	ATS2-420	$0.38
1/4-28 UNC	420	.400	.515	.3745	.275	1.005	.760	.615	.540	ATS2-428	$0.52
5/16-18 UNC	518	.528	.615	.4995	.325	1.065	.770	.630	.640	ATS2-518	$0.93
5/16-24 UNC	518	.528	.615	.4995	.325	1.065	.770	.630	.640	ATS2-524	$1.76
3/8-16 UNC	616	.588	.745	.5615	.390	1.450	1.095	.890	.770	ATS2-616	$0.86
1/2-13 UNC	813	.800	.935	.7485	.485	NA	NA	NA	.960	ATS2-813	$4.20

**Dimensions in minimum grip condition. Additional UNF thread sizes available.

AA-112 HI-TORQUE NUTSERT TOOL

The hi-torquer tool is ideal for field and maintenance applications. It features a patented Quick Change thread size nose assembly. Order one base tool plus appropriate conversion kit. No warranty on these tools.

THREAD SIZE	CONV. KIT PART NO.	PRICE EACH
4-40 UNC	AAT-202-440	$29.75
6-32 UNC	AAT-202-632	$29.50
8-32 UNC	AAT-202-832	$29.50
10-24 UNC	AAT-202-1024	$29.50
10-32 UNF	AAT-202-1032	$29.75
1/4-20 UNC	AAT-202-420	$29.50
1/4-28 UNC	AAT-202-428	$31.75
5/16-18 UNC	AAT-202-518	$29.50
5/16-24 UNC	AAT-202-524	$29.50
3/8-16 UNC	AAT-202-616	$29.75
Base tool, P/N AA-112.....$69.50		

AAT916 EXPENDABLE NUTSERT TOOLS

These expendable tools are ideal for applications such as field repair. They can also be packaged with instructions for use along with quantity of inserts for consumer assembly. Sizes 6-32, 8-32 include a hex key. Sizes 10-32,and larger require a wrench (not included). No warranty on these tools.

THREAD SIZE	TOOL PART NUMBER	PRICE EACH
4-40 UNC	AAT-916-440	$9.50
6-32 UNC	AAT-916-632	$9.50
8-32 UNC	AAT-916-832	$9.50
10-24 UNC	AAT-916-1024	$9.50
10-32 UNF	AAT-916-1032	$9.50
1/4-20 UNC	AAT-916-420	$9.50
1/4-28 UNC	AAT-916-428	$9.85
5/16-18 UNC	AAT-916-518	$9.50
5/16-24 UNC	AAT-916-524	$9.50
1/2-13 UNC	AAT-916-813	$83.75
3/8-16 UNC	AAt-916-616	

AAT312A MASTER NUTSERT ASSORTMENT KIT

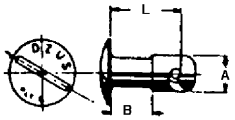
The A-T Series master assortment kit is ideal for prototype and maintenance repair applications. The rugged hard shell plastic kit contains quantities of the A-T Series Inserts and the AA 112 Hi-torquer tool. It also contains a full compliment of thread size conversion kits and instruction label. No warranty on these tools.

KIT CONTAINS:

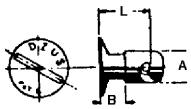
THREAD SIZE	QTY	NUTSERT PART NO.	CONV. KIT
4-40 UNC	50	ATS2-440	AAT-202-440
6-32 UNC	50	ATS2-632	AAT-202-632
8-32 UNC	50	ATS2-832	AAT-202-832
10-32 UNF	50	ATS2-1032	AAT-202-1032
1/4-20 UNC	50	ATS2-420	AAT-202-420
5/16-18 UNC	50	ATS2-518	AAT-202-518
Kit, P/N AAT312A.....$219.95			

Nutsert available. Sold Each.

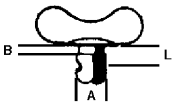
DZUS® FASTENERS



Oval Head Stud



Flush Head Stud



Wing Head Stud

OVAL HEAD STUD, LONG UNDERCUT

Model No.	Stud Dimensions A	B	L	Zinc Electroplated Cat. #	Price Each	Model No.	Stainless Cat. #	Price Each	GROMMETS & SNAP RINGS	SPRINGS
121J-325-Z3C	.1875	.075	.250	AJ3-25*	$3.35	-	-	-	GA3-175, 200, 250 GP3B, GH3 SR3SS SX-520SS	S3-150, 175 200,225
121J-330-Z3C	.1875	.100	.300	AJ3-30	$1.15	-	-	-		
121J-335-Z3C	.1875	.150	.350	AJ3-35*	$1.09	121J-335-SS	AJ3-35SS*	$3.35		
121J-340-Z3C	.1875	.200	.400	AJ3-40	$1.13	-	-	-		
121J-425-Z3C	.250	.100	.250	AJ4-25*	$2.85	121J-425-SS	AJ4-25SS*	$3.35	GA4-225, 250, 275, 300 GP4B, GH4 SB4SS SX-523SS	S4-200, 225
121J-430-Z3C	.250	.100	.300	AJ4-30	$1.20	121J-430-SS	AJ4-30SS	$3.45		
121J-435-Z3C	.250	.150	.350	AJ4-35*	$1.82	121J-435-SS	AJ4-35SS*	$1.84		
121J-440-Z3C	.250	.200	.400	AJ4-40	$1.21	121J-440-SS	AJ4-40SS	$3.35		
121J-445-Z3C	.250	.225	.450	AJ4-45*	$1.21	-	-	-		
121J-450-Z3C	.250	.250	.500	AJ4-50	$2.21	-	-	-		
121J-530-Z3C	.3125	.125	.300	AJ5-30	$1.25	121J-530-SS	AJ5-30SS	$1.35	GA5-312, 350, 375 GP5B, GH5 SR5SS SX-510SS	S5A200, 225 250, 275
121J-535-Z3C	.3125	.125	.350	AJ5-35*	$1.29	121J-535-SS	AJ5-35SS*	$1.33		
121J-540-Z3C	.3125	.190	.400	AJ5-40	$1.29	121J-540-SS	AJ5-40SS	$1.38		
121J-545-Z3C	.3125	.190	.450	AJ5-45*	$1.36	-	-	-		
121J-550-Z3C	.3125	.250	.500	AJ5-50	$1.35	-	-	-		
121J-560-Z3C	.3125	.300	.600	AJ5-60	$1.34	-	-	-		
121J-570-Z3C	.3125	.400	.700	AJ5-70	$1.51	-	-	-		
121J-635-Z3C	.375	.150	.350	AJ6-35*	$3.35	-	-	-	GA6-350, 375, 425 GP6B,GH6 SR6SS SX-518SS	S6-225, 250, 275 300
121J-640-Z3C	.375	.190	.400	AJ6-40	$3.35	-	-	-		
121J-650-Z3C	.375	.250	.500	AJ6-50	$3.35	-	-	-		
121J-660-Z3C	.375	.300	.600	AJ6-60	$1.60	-	-	-		
121J-670-Z3C	.375	.350	.700	AJ6-70	$6.50	-	-	-		
121J-740-Z3C	.4375	.190	.400	AJ7-40	$3.10	-	-	-	GA7-375, 475, 525 GH7 SR7SS SX-519SS	S7-225, 250, 275, 300
121J-750-Z3C	.4375	.250	.500	AJ7-50	$1.60	-	-	-		
121J-760-Z3C	.4375	.300	.600	AJ7-60	$3.40	-	-	-		
121J-770-Z3C	.4375	.350	.700	AJ7-70	$6.55	-	-	-		

FLUSH HEAD STUD, LONG UNDERCUT

Model No.	Stud Dimensions A	B	L	Zinc Electroplated Cat. #	Price Each	Model No.	Stainless Cat. #	Price Each	GROMMETS & SNAP RINGS	SPRINGS
126J-330-Z3C	.1875	.150	.300	FJ3-30	$5.65	-	-	-	GP3B-GH3 SR3SS SX-520SS	S3-150, 175, 200, 225
126J-335-Z3C	.1875	.175	.350	FJ3-35*	$1.24	-	-	-		
126J-340-Z3C	.1875	.200	.400	FJ3-40	$6.50	-	-	-		
-	.250	.150	.300	-	-	126J-430-SS	FJ4-30SS	$1.27	GF4-125, 150, 175, 200 GP4B, GH4 SR4SS SX-523SS	S4-200, 225
126J-435-Z3C	.250	.175	.350	FJ4-35*	$1.20	126J-435-SS	FJ4-35SS1	$3.35		
126J-440-Z3C	.250	.200	.400	FJ4-40	$11.50	126J-440-SS	FJ4-40SS	$3.35		
126J-445-Z3C	.250	.225	.450	FJ4-45*	$1.22	126J-445-SS	FJ4-45SS1	$3.45		
126J-450-Z3C	.250	.250	.500	FJ4-50	$3.35	-	-	-		
126J-540-Z3C	.3125	.225	.400	FJ5-40	$1.42	126J-540-SS	FJ5-40SS	$1.40	GF5-175, 225, 250 GP5B, GH5 SR5SS, SX-510SS	S5A200, 225 250, 275
126J-550-Z3C	.3125	.250	.500	FJ5-50	$1.45	-	-	-		
126J-560-Z3C	.3125	.300	.600	FJ5-60	$11.50	-	-	-		
126J-650-Z3C	.375	.250	.500	FJ6-50	$1.62	-	-	-	GF6-218, 250 GP6B,GH6 SR6SS, SX-518SS	S6-225, 250, 275 300
126J-660-Z3C	.375	.300	.600	FJ6-60	$2.97	-	-	-		
126J-670-Z3C	.375	.350	.700	FJ6-70	$3.35	-	-	-		
126J-750-Z3C	.4375	.250	.500	FJ7-50	$1.65	-	-	-	GF7-250, 325, 400 GH7, SR7SS, SX-519SS	S7-225, 250, 275, 300
126J-760-Z3C	.4375	.300	.600	FJ7-60	$2.25	-	-	-		
126J-770-Z3C	.4375	.350	.700	FJ7-70	$6.65	-	-	-		

WING HEAD STUD, LONG UNDERCUT

(A, B, L dimensions for AJW are same as for AJ; P, Q, R dimensions given are for wing head)

Model No.	Stud Dimensions A	B	L	Zinc Electroplated Cat. #	Price Each	Model No.	Stainless Cat. #	Price Each	GROMMETS & SNAP RINGS	SPRINGS
121J-W325-Z3C	.1875	.075	.250	AJW3-25*	$6.85	-	AJW3-25SS*	$5.90	GA3-175, 200, 250 GP3B, GH3 SR3SS SX-520SS	S3-150, 175 200, 225
121J-W330-Z3C	.1875	.100	.300	AJW3-30	$1.56	-	-	-		
121J-W335-Z3C	.1875	.150	.350	AJW3-35*	$6.50	-	-	-		
121J-W340-Z3C	.1875	.200	.400	AJW3-40	$1.59	-	-	-		
121J-W425-Z3C	.250	.100	.250	AJW4-25*	$5.95	-	-	-	GA4-225, 250, 275, 300 GP4B, GH4 SR4SS SX-523SS	S4-200, 225
121J-W430-Z3C	.250	.100	.300	AJW4-30	$5.90	-	-	-		
121J-W435-Z3C	.250	.150	.350	AJW4-35*	$6.50	-	-	-		
121J-W440-Z3C	.250	.200	.400	AJW4-40	$1.65	-	-	-		
121J-W530-Z3C	.3125	.125	.300	AJW5-30	$1.84	-	-	-	GA5-312, 350, 375 SR5SS SX-510SS	S5A200, 225
121J-W540-Z3C	.3125	.190	.400	AJW5-40	$1.82	-	-	-		
121J-W545-Z3C	.3125	.200	.450	AJW5-45*	$4.60	-	-	-		
121J-W550-Z3C	.3125	.250	.500	AJW5-50	$1.86	-	-	-		

CAD PLATED FASTENERS ARE NO LONGER AVAILABLE DUE TO ENVIROMENTAL REASONS.

*No longer available after our current stock is depleted. Please order next longer size.

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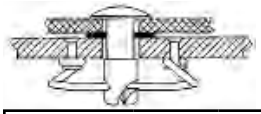
STUD AND SPRING SELECTION TABLES



1. Find total thickness (distance) from underside of stud head to point of spring attachment).
2. Select stud "L" and spring "H" dims.

Size 3 Stud, S3 Spring			Size 4 Stud, S4 Spring		
	USE			USE	
Total Thickness	Stud Dim. L	Spring Dim. H	Total Thickness	Stud Dim. L	Spring Dim. H
.045 - .069	-25	-225	.050 - .074	-25	-225
.070 - .094	-25	-200	.075 - .099	-25	-200
.095 - .119	-30	-225	.100 - .124	-30	-225
.120 - .144	-30	-200	.125 - .149	-30	-200
.145 - .169	-30	-175	.150 - .174	-35	-225
.170 - .194	-30	-150	.175 - .199	-35	-200
.195 - .219	-35	-175	.200 - .224	-40	-225
.220 - .224	-35	-150	.225 - .249	-40	-200
.245 - .269	-40	-175	.250 - .274	-45	-225
.270 - .294	-40	-150	.275 - .299	-45	-200
			.300 - .324	-50	-225
			.325 - .344	-50	-200

Size 5 Stud, S5A Spring			Size 6 Stud, S6 Spring Size 7 Stud, S7 Spring		
	USE			USE	
Total Thickness	Stud Dim. L	Spring Dim. H	Total Thickness	Stud Dim. L	Spring Dim. H
.055 - .079	-30	-275	.090 - .114	-35	-300
.080 - .104	-30	-250	.115 - .139	-35	-275
.105 - .129	-30	-225	.140 - .164	-35	-300
.130 - .154	-30	-200	.165 - .189	-40	-275
.155 - .179	-40	-275	.190 - .214	-40	-250
.180 - .204	-40	-250	.215 - .239	-40	-225
.205 - .229	-40	-225	.240 - .264	-50	-300
.230 - .254	-40	-200	.225 - .249	-40	-200
.255 - .279	-50	-275	.265 - .289	-50	-275
.280 - .304	-50	-250	.290 - .314	-50	-250
.305 - .329	-50	-225	.315 - .339	-50	-225
.330 - .354	-50	-200	.340 - .364	-60	-300
.355 - .379	-60	-275	.365 - .389	-60	-275
.380 - .404	-60	-250	.390 - .414	-60	-250
.405 - .429	-60	-225	.415 - .439	-60	-225
.430 - .454	-60	-200	.440 - .464	-70	-300
.455 - .479	-70	-275	.465 - .489	-70	-275
.480 - .504	-70	-250	.490 - .514	-70	-250
.505 - .529	-70	-255	.515 - .539	-70	-225
.530 - .554	-70	-200			

INSTALLATION TOOLS

Part No.	Description (Installs:)	Price
04-01441	A, AJ3 Oval Head Studs & Grommets	$47.50
04-01410	A4,AJ4 Oval Head Studs & Grommets	$47.50
04-01409	A5,AJ5 Oval Head Studs & Grommets	$49.75
04-01442	A6.5,AJ6.5 Oval Head Studs&Grommets	$47.50
04-01413	A7, AJ7 Oval Head Studs & Grommets	$212.95
04-01447	F5, FJ5 Flush Head Studs & Grommets	$47.50
04-01637	F6.5,FA6.5,FJ6.5 Flush Head Studs & Grommets	$49.75

* Note: A5 tool is specially designed to install grommets in Bonanza cowlings without removing cowling brackets. This will save you alot of time.

Description	Part No.	Price
Modified C-Clamp (Required and Accepts All Attachment Sets)	12-02272	$46.50

RETAINING SPRINGS

When there is a gap between the top and bottom panels, a retaining spring is used to hold the stud in locking position for alignment with receptacle.

Model No.	Part No.	Price ea
1219-24520-SS	SX-520SS	$0.90
1219-24523-SS	SX-523SS	$0.17
1219-24510-SS	SX-510SS	$0.48
1219-24518-SS	SX-518SS	$0.67
1219-24519-SS	SX-519SS	$0.55

SNAP RINGS

A snap ring is used when there is not a lot of pull-out load. This ring is expandable easily installed with pliers or screwdriver and takes little space.

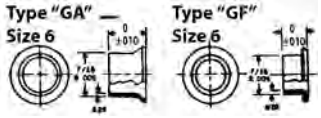
Model No.	Part No.	Price ea
1219-R3-SS	SR3SS	$0.08
1219-R4-SS	SR4SS	$0.09
1219-R5-SS	SR5SS	$0.10
1219-R6-SS	SR6SS	$0.08
1219-R7-SS	SR7SS	$0.36

SPRINGS

Model No.	Part No.	Price Ea.	Model No.	Part No.	Price Ea.
1219-3150-Z3CT	S3-150	$0.46	1219-5300-Z3Y	S5A-300	$1.62
1219-3175-Z3Y	S3-175	$0.43	1219-6225-Z3Y	S6A-225	$1.66
1219-3200-Z3Y	S3-200	$0.46	1219-6250-Z3Y	S6A-250	$0.97
1219-3225-Z3Y	S3-225	$0.43	1219-6275-Z3Y	S6A-275	$0.73
1219-4220-Z3Y	S4-200	$0.42	1219-6300-Z3Y	S6-300	$1.10
1219-4225-Z3Y	S4-225	$0.50	1219-6400-Z3Y	S6A-400	$1.54
1219-4250-Z3Y	S4-250	$0.76	1219-6425-Z3Y	S6A-425	$1.40
1219-A4200-Z3Y	S4A-200	$0.42	1219-6325-Z3Y	S5A-325	$1.33
S5-325-SURP		$7.50	1219-7225-Z3Y	S7-225	$1.47
1219-A5200-Z3Y	S5A-200	$0.62	1219-7250-Z3Y	S7-250	$1.83
1219-A5225-Z3Y	S5A-225	$0.42	1219-7275-Z3Y	S7-275	$1.19
1219-A5250-Z3Y	S5A-250	$0.46	1219-7300-Z3Y	S7-300	$0.75
1219-A5275-Z3Y	S5A-275	$1.05			

The dash number represents the height ("H" dimension) of the spring.

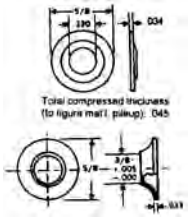
FULL GROMMETS



A full grommet is used when protection of the hole is a definite consideration. It protects panel finish and reduces stud play. A tool is required for installation. The "GA" type full grommet is used with a protruding head stud, and the "GF" type with a flush head stud.

ALUMINUM

Outer Panel Thickness	Type "GA"			Type "GF"		
	Model No.	Part No.	Price	Model No.	Part No.	Price
.015 - .025	1271-3175	GA3-175	$3.35	---	N/A	---
.026 - .050	1271-200	GA3-200	$1.93	---	N/A	---
.051 - .094	1271-250	GA3-250	$1.23	---	N/A	---
.015 - .025	---	GA4-225	--	1276-4125	GF4-125	$2.25
.026 - .050	1271-4250	GA4-250	$1.25	1276-4150	GF4-150	$1.90
.051 - .075	1271-4275	GA4-275	$1.25	1276-4175	GF4-175	$3.99
.076 - .100	1271-4300	GA4-300	$3.35	1276-4200	GF4-200	$2.20
.031 - .062	1271-5312	GA5-312	$1.44	1276-5175	GF5-175	$2.40
.063 - .094	1271-5350	GA5-350	$0.37	1276-5225	GF5-225	$2.45
.095 - .125	1271-5375	GA5-375	$1.41	1276-5250	GF5-250	$2.35
.040 - .065	1271-6350	GA6-350	$0.54	---	GF6-218	---
.066 - .100	1271-6375	GA6-375	$1.74	1276-6250	GF6-250	$0.49
.101 - .135	1271-6425	GA6-425	$2.12	---	---	---
.050 - .095	1271-7375	GA7-375	$3.60	1276-7250	GF7-250	$4.85
.096 - .156	---	GA7-475	---	---	GF7-325	---
.157 - .218	1271-7525	GA7-525	---	1276-7400	GF7-400	$5.95



HALF GROMMETS

A half grommet does not break easily, and it flattens but guarantees hold of the stud. It is used when protection of the hole is not a consideration, but protection of panel finish might be. The "GH" type half grommet is installed with a tool; the "GP" type is pushed on by hand.

Type "GP" Thermoplastic			Type "GH" Aluminum		
Model No.	Part No.	Price ea	Model No.	Part No.	Price ea
127P-3B	GP3B	$0.10	127H-3	GH3	$0.10
127P-4B	GP4B	$0.10	127H-4	GH4	---
127P-5B	GP5B	$0.09	127H-5	GH5	$0.17
127P-6B	GP6B	$0.14	127H-6	GH6	$0.13
127P-7B	GP7B	---	127H-7	GH7	$1.10

DZUS® FASTENER SPRING ADJUSTER

The MS-7301 tool easily adjusts DZUS® fastener springs for a perfect fit every time. Great for Warbirds and vintage aircraft. Bend springs in or out with a few simple turns. P/N 04-00957.....$42.75

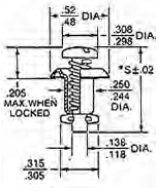
DZUS® DRIVER

The MS-Driver is a great tool for locking and unlocking DZUS® fasteners. The large handle gives you plenty of torque and is comfortable in the hand. The blade has a radius end to fit fastener slots better than a standard screwdriver and is heat treated steel with zinc plating for long life. P/N 04-00958.....$18.95

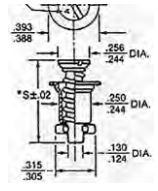
HA

CAMLOC FASTENERS

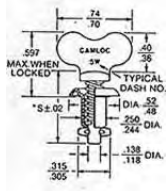
The 2600 and 2700 series Camloc fasteners exceed requirements for MIL-F-5591, Style 3, Size 2. Shear and tensile strength: 300 lbs. (ultimate), 200 lbs. (rated). Studs and washers listed are made of steel. The receptacles are made of copper base alloy. All components listed are rated to 450° F. The 4002 series fasteners are considerably stronger than the 2600 and 2700 series. Shear and tensile strength: 1050 lbs. (ultimate), 700 lbs. (rated). All studs and grommets listed are made of steel. Rated to 450° F.



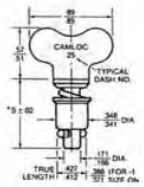
2600



2700



2600 WING



4002 WING

2600 STUDS

Dash No.	CAD Plated		Stainless		CAD Plated	
	2600 Slot Price Ea	26S8 Phillips Price Ea	Dash No.	2600 Slot Price Ea	Wing CAD Plated	Price Each
-1	$3.60	$3.90	-1S	$4.20	---	---
-2	$3.40	$2.35	-2S	$4.15	2600-2W	$7.70
-3	$2.15	$2.45	-3S	$4.15	2600-3W	$4.75
-4	$2.20	$2.35	-4S	$3.80	2600-4W	$7.50
-5	$2.50	$2.25	-5S	$3.90	2600-5W	$6.85
-6	$3.89	$2.77	-6S	$4.15	2600-6W	$7.75
-7	$2.50	$2.85	-7S	$3.80	2600-7W	$7.50
-8	$3.35	$3.70	-8S	$4.25	2600-8W	$11.75
-9	$2.65	$3.95	-9S	$3.45	2600-9W	$5.35
-10	$3.75	$3.95	-10S	$4.10	2600-10W	$5.95
-11	$4.20	---	---	---	2600-11W	$7.90
-12	$5.35	---	---	---	2600-12W	$7.85
-13	$4.35	---	---	---	---	---
-14	$4.35	$4.35	---	---	2600-14W	$7.75

2700 STUDS

Dash No.	CAD Plated		Stainless	
	2700 Slot Price Ea	27S3 Phillips Price Ea	Dash No.	2700 Slot Price Ea
-1	$3.90	$2.98	-1S	$5.35
-2	$4.35	$3.98	-2S	$4.80
-3	$2.98	$3.35	-3S	$3.98
-4	$3.70	$3.25	-4S	$3.35
-5	$3.05	$3.35	-5S	$4.80
-6	$3.75	$3.10	-6S	$3.95
-7	$3.75	$3.40	-7S	$3.95
-8	$3.60	$4.10	-8S	$4.90
-9	$4.40	$4.35	-9S	$4.85
-10	$4.35	$3.65	-10S	$4.15
-11	$2.55	---	---	---
-13	$4.45	---	---	---
-14	$4.15	$4.10	---	---

4002 STUDS

Dash No.	CAD Plated / Stainless							
	4002 CAD Plated Slot Price Ea	40S5 CAD Plated Phillips Price Ea	SS Phillips 40S5	Price Each	Dash No.	4002 SS Slot Price Ea	Wing CAD Plated	Price Each
-2	$5.25	$3.95	40S5-2S	$3.60	-2S	$3.80	4002-2W	$9.50
-3	$3.65	$3.95	40S5-3S	$5.40	-3S	$3.85	4002-3W	$7.75
-4	$3.25	$3.35	40S5-4S	$3.45	-4S	$3.80	4002-4W	$7.75
-5	$2.95	$3.60	40S5-5S	$4.45	-5S	$3.40	4002-5W	$6.95
-6	$3.75	$3.50	40S5-6S	$4.20	-6S	$3.98	4002-6W	$8.90
-7	$3.70	$3.75	40S5-7S	$4.25	-7S	$3.95	---	---
-8	$4.45	$3.35	40S5-8S	$4.95	-8S	$3.97	4002-8W	$7.90
-9	$3.70	$3.70	40S5-9S	$3.95	-9S	$3.95	4002-9W	$10.00
-10	$3.70	---	40S5-10S	$5.25	---	---	4002-10W	$7.95
-11	$3.95	---	---	---	---	---	4002-11W	---
-12	$3.95	---	---	---	---	---	4002-12W	$7.95
-13	$3.70	---	---	---	---	---	---	---
-14	$3.60	---	---	---	---	---	---	---
-15	$3.97	---	---	---	---	---	---	---
-16	$5.35	---	---	---	---	---	---	---
-17	$17.50	---	---	---	---	---	---	---

RECEPTACLES

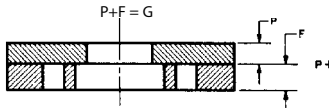
2600 Series - Small enough to fit in limited mounting space and light weight. All of these fasteners have a 600# ultimate tensile load capacity. 4200 Series - The Modern Standard in Quick Release Fastening Systems. They have an 800# working strength and 1050# Ultimate Tensile load capacity.

Rivet Holes	2600, 2700 Series Part No.	Price Each	4002 Series Part No.	Price Each
Plain	212-12N	$2.98	214-16N	$4.40
Cntersunk	212-12ND*	$3.85	214-16ND*	$5.95
Plain	Floating Bronze		244-16	$4.85

2600 / 2700 STUD LENGTH SELECTION

Total material thickness "G" consists of the thickness of all materials to be fastened. This must include the thickness of the material "P" to which the stud assembly is attached, the material "F" to which the receptacle is attached plus gaskets (if used) and allowance for paint or other protective finishes. If the total thickness is near the upper limit of the stud grip range, the next longer stud should be used. This will still maintain positive locking of the fastener under vibration.

P (panel thickness).....062
F (frame thickness.....+ .062
GRIP (total thickness).....= .124



STUD SELECTION TABLE Using 212-12 Receptacle		
Total Grip Thickness	Use 2600	Use 2700
.020 - .059	2600-1	2700-1
.060 - .089	2600-2	2700-2
.090 - .119	2600-3	2700-3
.120 - .149	2600-4	2700-4
.150 - .179	2600-5	2700-5
.180 - .209	2600-6	2700-6
.210 - .239	2600-7	2700-7
.240 - .269	2600-8	2700-8
.270 - .299	2600-9	2700-9
.300 - .329	2600-10	2700-10
.330 - .359	2600-11	2700-11
.360 - .389	2600-12	2700-12
.390 - .419	2600-13	2700-13
.420 - .449	2600-14	2700-14

4002 SERIES (LARGE HEAD) STUD SELECTION

To select the proper length stud, first select the grommet, for example 4002-G. Next, select the receptacle, such as 214-16. After determining the total grip thickness, use the grommet column under which the selected grommet and receptacle appear. Use the dash number which appears opposite the determined total grip thickness.

Example: If the total determined grip thickness "G" was. 144, the stud dash number for the above 4002-G grommet and 214-16 receptacle would be -4. The stud part number would be 4002-4.

Total Grip Thickness Range "G"	Stud Dash Number	
	4002-G Grommet & 214-16 Receptacle	4002-N, 4002-0 Grommet & 214-16 Receptacle
.021 - .050	--*	-1
.055 - .080	--*	-2
.081 - .110	-2*	-3
.111 - .140	-3	-4
.141 - .170	-4	-5
.171 - .200	-5	-6
.201 - .230	-6	-7
.231 - .260	-7	-8
.261 - .290	-8	-9
.291 - .320	-9	-10
.321 - .350	-10	-11
.351 - .380	-11	-12
.381 - .410	-12	-13
.411 - .440	-13	-14
.441 - .470	-14	-15
.471 - .500	-15	-16
.501 - .530	-16	-17
.531 - .560	-17	-

*4002-G grommet requires .090" minimum grip.

2600, 2700 SERIES RETAINING WASHERS

Retaining washers are required for studs of -5 length or greater. Use split washer 2600-SW2 where it is desirable to have the stud fall away for minimum internal projection. Use internal tooth washer 2600-LW where it is desirable to retain the stud assembly rigidly.

P/N 2600-SW-2.....$0.50 P/N 2600-LW $0.23

4002 SERIES GROMMETS & SNAP RINGS

Description	Part No.	Price ea.
CAD Plated		
Flush Grommet	4002-G	$1.36
Flush Grommet	4002-H	$2.29
Plus-Flush Grommet	4002-N	$1.63
Stud Retaining Grommet	4002-O	$1.55
High Shear Flush Grommet	40G1-5	$4.35
Wide Area Grommet	4002-N3	$2.20
Grommet Retaining Ring	R4G	$0.42
High Shear Grommet Retaining Ring	R4T	$0.77
Camloc Retaining Ring	4002-SW	$0.65
Stainless		
Flush Grommet	4002-GS	$1.63
Flush Grommet	4002-HS	$1.70
Plus Flush Grommet	4002-NS	$1.64
Flush Grommet	4002-OS	$1.63

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CAMLOC FASTENERS – COWLING KITS

COWLING KITS

Aircraft Make & Model	Stainless				Cad-Plated Phillips	
	Slotted		Phillips			
	P/N	Price	P/N	Price	P/N	Price
Aerosport			04-00327 A	$30.25		
Aero Commander 690	04-00286 B	$1,305.00			04-00336 B	$1,166.00
Aerostar	04-00287 B	$782.00			04-00337 B	$742.00
Beech Baron B55 ('69 SN TC1230) A	04-00288 B	$333.95	04-00329 B	$366.95		
Beech Baron B58	04-00289 B	$245.95			04-00338 B	$227.95
Beech Baron P58	04-00291 B	$302.95				
Bellanca Scout 8GCBC	04-00292 A	$69.75				
Bellanca Viking	04-00293 B	$153.95			04-00339 B	$135.95
Cessna 150 (1967-77)	04-00294 A	$47.75	04-00331 A	$41.75		
Cessna 172 (1967-82)	04-00297 A	$52.25	04-00332 A	$51.85		
Cessna 172RG (1984)	04-00298 B	$260.95			04-00341 B	$224.95
Cessna 172XP	04-00299 B	$111.95			04-00342 B	$119.95
Cessna 177	04-00301 A	$52.25	04-00333 A	$52.00		
Cessna 182 (1961-69)	04-00303 B	$198.95				
Cessna 182 (1971 SN 60752)	04-00305 B	$197.95	04-00334 B	$189.95	04-00343 B	$193.95
Cessna 182 (1973 & up)	04-00307 B	$156.95			04-00344 B	$135.95
Cessna 182RG	04-00309 B	$255.95	04-01942 B	$278.95	04-01943 B	$273.95
Cessna 206	04-00310 B	$192.95			04-00347 B	$160.95
Cessna 210	04-00311 B	$201.95			04-00348 B	$181.95
Cessna 310K	04-00312 B	$943.00			04-00349 B	$892.00
Cessna 320	04-00313 B	$839.00			04-00351 B	$697.00
Cessna 337	04-00315 B	$665.00			04-00352 B	$528.00
Cessna 340	04-00317 B	$644.00			04-00353 B	$632.00
Cessna 414	04-00319 B	$545.00			04-00354 B	$518.00
Cessna 421	04-00320 B	$902.00			04-00355 B	$868.00
Mooney 20J	04-00321 B	$155.95	Kit contains Southco or Camloc studs, washers, and retainers. The retainer push on tool is only included in Southco Kits. Receptacles are not included. A is for Southco. B is for Camloc. The nose cowl components, if applicable, are not included in any cowling kit.			
Piper PA18	04-00322 A	$39.50				
Piper Cheyenne	04-00006 B	$440.95				
Piper Comanche Twin (Nose)	04-00324 A	$67.25				
Piper Comanche Twin	04-00325 B	$648.00				

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MS213 ADJUSTABLE DEPTH RECEPTACLE

- For 2600/2700/2800 Series C-Spec Fasteners.
- Any one stud length fits a wide range of panels.
- The MS213 is an exact replacement for 212-12 receptacles.
- Standard aluminum MS213A receptacles are lighter than 212 fixed depth receptacles with no sacrifice in strength ratings.
- Economical. Simply inventory one stud length for all applications.
- Fully compatible with existing C-Spec (Camloc®) designs.
- FAA approved for aircraft use under TSO-C-148.

Description	Part No.	Price
Receptacle, 2600/2700/2800, Rigid Receptacle, Adjustable Depth, Plain Rivet Holes, Aluminum	04-02069	$5.75
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Plain Rivet Holes, Stainless Steel	04-02071	$6.25
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Csk Rivet Holes, Aluminum, Dimpled	04-02072	$5.75
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Plain Rivet Holes, Steel	04-02073	$5.50
Receptacle, 2600/2700/2800, Adjustable Depth, Rigid Receptacle, Csk Rivet Holes, Stainless Steel, Dimpled	04-02074	$6.25

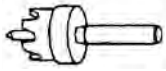
CAMLOC FASTENER TOOLS

PLIERS P/N 4P3 ..... $16.95

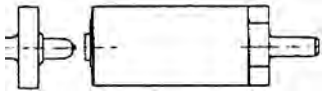
2600-LW LOCKWASHER TOOL
P/N T98-1 ..... $26.85

4002 SERIES SNAP RING TOOL
P/N 04-01529 ..... $23.75

RECEPTACLE DRILL JIG
For 4002 Series and 2600/2700 Series receptacles
P/N 01-00155 ..... $41.70



HOLE SAWS
Stock Sizes:
P/N 04-01516 (.471" dia.) $312.00
P/N 04-01517 (.687" dia.) $239.95
Other diameters available

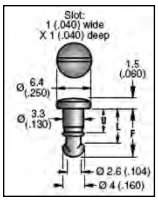


2S200 SERIES DIMPLING TOOL
P/N 2S200M-1
1/4"x9/16"L $429.00
P/N 2S200F-1
5/16"x5/8""L $659.00
P/N 2S200M-2
5/16"x5/8"L $624.00

4002 SERIES MEASURING TOOL
This handy tool is all stainless steel and engraved with Camloc fastener lengths from -2 to -11. Simple slide the Camloc fastener into the tool to determine the size (dash number) of the Camloc. A must for mechanics, paint shops, homebilders, or anyone working with Camloc fasteners. Note: Not for use with 2600/2700 Series
P/N 12-01598 ..... $16.85

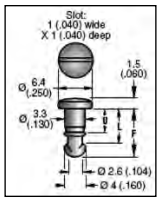
SOUTHCO STUDS

FLUSHSLOTTED



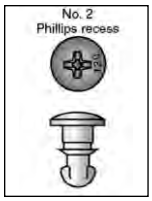
Flush Head #82 Dacrotized Slotted	
Part No.	Price
82-14-120-16	$1.19
82-14-180-20	$0.67
82-14-220-20	$0.65
82-14-240-20	$0.65
Flush Head #82 Stnls Phillips	
Part No.	Price
82-28-100-16	$0.81
82-28-120-16	$0.81
82-28-140-16	$0.78
82-28-160-16	$1.29
82-28-180-16	$0.78
82-28-200-16	$0.78
82-28-220-16	$0.81
82-28-240-16	$0.81
82-28-260-16	$0.78
82-28-280-16	$0.73
82-28-300-16	$0.73
82-28-320-16	$0.73
82-28-340-16	$0.73

OVAL SLOTTED



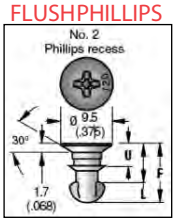
Oval Head #82 Stnls Slotted	
Part No.	Price
82-11-100-20	$1.14
82-11-120-20	$0.97
82-11-140-20	$1.82
82-11-160-20	$1.85
82-11-180-20	$1.58
82-11-200-20	$1.83
82-11-220-20	$1.14
82-11-240-20	$1.85
82-11-280-20	$0.95
Oval Head #82 Dacrotized Slotted	
Part No.	Price
82-11-100-16	$1.16
82-11-120-16	$1.30
82-11-140-16	$1.31
82-11-160-16	$1.38
82-11-180-16	$1.38
82-11-200-16	$1.35
82-11-220-16	$0.73
82-11-240-16	$1.31
82-11-260-16	$1.30

OVALPHILLIPS



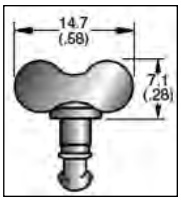
Oval Head #82 Stnls Phillips	
Part No.	Price
82-19-120-20	$0.96
82-19-140-20	$0.98
82-19-160-20	$0.83
82-19-180-20	$1.17
82-19-200-20	$1.84
82-19-220-20	$1.17
Oval Head #85 Stnls Slotted	
Part No.	Price
85-11-100-20	$0.63
85-11-140-20	$3.50
85-11-160-20	$1.96
85-11-180-20	$1.98
85-11-200-20	$1.25
85-11-220-20	$1.20
85-11-240-20	$1.19
85-11-260-20	$1.63
85-11-280-20	$1.95
85-11-300-20	$1.97

FLUSHPHILLIPS



Wing Head #85 Zinc plate, chromate plus sealer	
Part No.	Price
85-12-140-16	$1.07
85-12-160-16	$1.00
85-12-180-16	$0.98
85-12-200-16	$0.95
85-12-220-16	$1.64
85-12-240-16	$0.93
85-12-260-16	$1.05
85-12-280-16	$0.93
85-12-300-16	$0.93
85-12-320-16	$0.93
85-12-340-16	$0.93
85-12-360-16	$0.93
85-12-380-16	$0.93
85-12-400-16	$0.93

WINGHEAD



Wing Head #82 Dacrotized	
Part No.	Price
82-12-100-16	$1.65
82-12-120-16	$1.59
82-12-140-16	$1.56
82-12-160-16	$1.55
82-12-180-16	$1.56
82-12-200-16	$0.86
82-12-220-16	$1.18
82-12-240-16	$1.57
82-12-300-16	$1.56
82-12-340-16	$0.97

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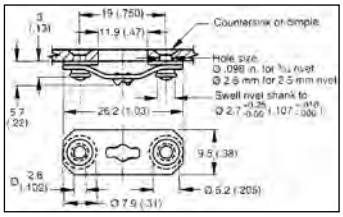
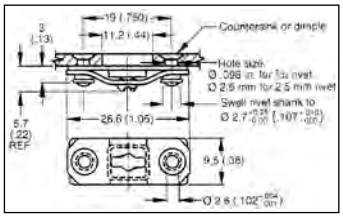
#82 SOUTHCO RECEPTACLES



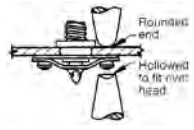
FLOATINGFORRIVETINGW/OBASE - This space saving stainless steel receptacle offers optimum weight savings by eliminating base.
P/N 82-35-295-20 .....$1.01/ea



FLOATING FOR RIVETING W/ BASE - Full-floating dacrotized steel receptacle is mounted to inside panel with two 3/32" rivets. Compact dimensions save space and weight.
P/N 82-35-302-15 .....$0.51/ea

FIXED FOR WELDING WITH BASE - Exactly the same as the receptacle with base above except this receptacle features two welding studs for installation by welding rather than rivets.
P/N 82-35-303-15 .....$1.50/ea

CLIP-ON RECEPTACLES - These versatile receptacles will fit material thickness from .020 to .190 by simply slipping over the hole and clipping in place. Easily removed as well, these receptacles do not require welding or riveting.
P/N 82-47-113-200 (Stainless Steel).....$1.25/ea
P/N 82-47-113-150 (Steel) $0.31/ea



RUBBERVIBRATIONISOLATIONRECEPTACLES - Use these receptacles where it is necessary to isolate vibration between panels.
P/N 82-35-306-10 $9.25

#85 RECEPTACLES

RIVET TYPE - Receptacle Spring: 1064 steel, dacrotized
Base: 1010 steel, dacrotized. P/N 85-35-295-15 ..... $1.22

RECEPTACLE SPRING: 17-7 PH, stainless steel, passivated
BASE: 305 stainless steel, passivated. P/N 85-35-295-20 .....$3.35/ea

WELD TYPE - Receptacle Spring: 1064 steel, dacrotized
Base: 1010 steel, dacrotized Rivet: steel, copper-plated.
P/N 85-35-296-15 .....$2.75/ea

CLIP-ON TYPE - 17-7 PH stainless steel, passivated.
P/N 85-47-101-20 .....$1.49/ea

DETERMINING SOUTHCO STUD PART NO.

Stud Length Material Thickness	Selection Chart Thickness Size
.090 - .109	100
.110 - .129	120
.130 - .149	140
.150 - .169	160
.170 - .189	180
.190 - .209	200
.210 - .229	220
.230 - .249	240
.250 - .269	260
.270 - .289	280

Southco studs are commonly used to secure Cessna cowlings, particularly on models 150, 172, and 177. We stock the popular Southco No. 82 1/4 turn fastener studs, receptacles, and accessories.

TO DETERMINE PART NO.

Select Stud part number using chart above. Example:

82 - 14 - 220 - 16

Southco Fastener Number	Head Type (Slotted)	Stud Length (Dacrotized)	Material Type

SOUTHCO SEALING WASHER – This black synthetic washer is used under head of Southco Studs.....P/N 82-43-201-38.....$0.20/ea

SOUTHCO EJECTOR SPRING – This stainless steel spring enables the stud head to stand away from the panel when the unit is not fastened. When using the ejector spring, add two grip lengths to stud length to allow for spring and wear washer.....P/N 43-13-1-24.....$0.12/ea

SOUTHCO WEAR WASHER – A plastic washer to reduce wear around the Southco stud.When using wear washer add one grip length to stud length selection. P/N 82-46-101-39.....$0.15/ea.

SOUTHCO SPLIT RING RETAINER – Can be installed by hand or tool, and is fabricated from stainless steel.....P/N 82-32-101-20.....$0.08/ea

SOUTHCO SPLIT RING RETAINER TOOL - Designed to install Southco split ring retainers. P/N 82-0-7596-11 .....$27.65/ea

SOUTHCO PUSH-ON RETAINER – designed for installation using the retainer tool below. Stainless.....P/N 82-32-201-20.....$0.08/ea
Plastic .....P/N 82-32-301-12.....$0.09/ea

SOUTHCO PUSH-ON RETAINER TOOL – An easy-to-use tool quickly installs Southco push-on retainers P/N 82-0-22542-11.....$18.75/ea

SOUTHCO PUSH-ON RETAINER TOOL - An easy-to-use tool quickly installs Southco 85 Series push-on retainers. P/N 85-0-22543-11..... $39.25

#85 RETAINERS

Split Ring Hand or tool installation. Stainless steel.
P/N 85-34-101-20.....$0.13/ea
Push-On Tool installation only. 302 Stainless Steel, Passivated
P/N 85-34-201-20.....$0.13/ea
Nylon Black ...P/N 85-34-301-12.....$0.10/ea

#85 THERMOPLASTIC (CUPPED NYLON) WEAR WASHER

Natural color. Order stud one size longer than size you would use without washer. Adjustment Formula: Add 0.51/.020 to your total material thickness. P/N 85-46-101-39.....$0.15/ea

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CLICK BOND FASTENERS

CLICK BOND FASTENERS

Click Bond Fasteners mount to surfaces with adhesive. They are assembled in a disposable, self-fixturing device of plastic that aligns and holds the fastener in position and under controlled pressure while the bonding material cures. After the installation is completed, the holding fixture is removed and the conventional attachment is made to the fastener. Bonded fasteners eliminate welding or drilling surfaces and result in reinforced substrate strength, leakproof and corrosion resistant attachments. Aircraft Spruce & Specialty Co. offers Click Bond Fasteners in convenient, pre-packaged kits as shown.

CABLE TIE MOUNT KIT

Each cable tie mount in this kit is pre-assembled in a temporary, easy-to-remove fixture that holds the cable tie mount in place and under pressure while the adhesive cures. No additional installation tools are needed. The kit includes four CB3019AA3N cable tie mounts with nylon ties (5" 40 lbs.), one adhesive packet, surface preparation materials, and installations.

P/N 04-06000 ..... $18.50

FLOATING NUTPLATE KIT

The Click Bond adhesive bonded floating nutplate has a metal base and is installed using a disposable, elastomeric fixture that temporarily holds the nutplate in place and under pressure while the adhesive cures. The fixture prevents fouling of the clearance hole. No additional tools are needed for making the nutplate attachment. This fastener meets or exceeds the standards set by MIL-N-25027 for push-out, torque-out, and cycle life. Bonded nutplates eliminate composite damaging rivets, reinforce the structure, and reduce installation time. The kit includes four CB2009A3S floating nutplates (10-32) with aluminum baseplate, one adhesive packet, surface preparation materials, and instructions.

P/N 04-06005 ..... $29.70/ea.

REPAIR PATCH KIT

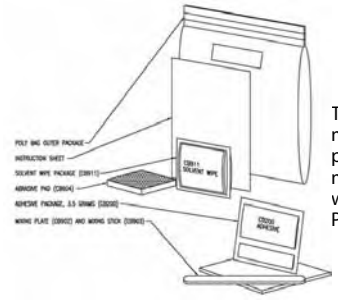
These self-fixturing surface mounted patches repair small holes and fastener leaks without access to the reverse side of the surface. The patches are adhesively bonded to flat or curved surfaces with the aid of an integral, disposable fixture. The high peel strength adhesive allows the patches to withstand supersonic flight, cleaning, de-icing, and paint stripping. Patches can be removed easily with heat application. The kit includes one CP125-000-005A1A1 aluminum repair patch (.005 thick and 1.25 inch diameter), one adhesive packet, surface preparation materials, and instructions.

P/N 04-06015 ..... $12.95

CB 200 ACRYLIC ADHESIVE

A high strength, two part adhesive. 3.5 gram package. One package is usually sufficient to do five of any Click Bond fasteners.

P/N 04-06040 ..... $2.50



CB92 ADHESIVE MIX KIT

The CB92 Acrylic adhesive & prep material kit includes adhesive package (3.5 grams) mixing plate, mixing stick, abrasive pad, solvent wipe package, and instructions.

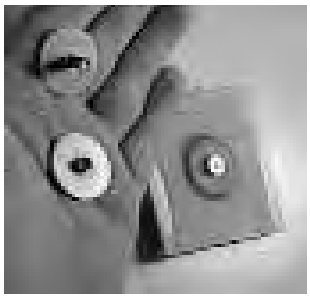
P/N 04-02059 ..... $3.60

STUD KITS

Click Bond studs are available in several sizes. The Metal Small Base Stud Kit includes six CS62-1032-12AX-CR aluminum small base stainless studs, six stainless nylocks/washers (10-32), one adhesive packet, surface preparation materials, and instructions. The Metal Large Base Stud Kit includes four CS125-1420-16AX-CR aluminum large base stainless studs, four stainless nylock/washers (1/4-20), one adhesive packet, surface preparation materials, and instructions. The Fiberglass Base Stud Kit includes two CS125-1032-12G-CR fiberglass large base stainless studs, two stainless nylocks/washers (10-32), one adhesive packet, surface preparation materials, and instructions.

Metal Small Base Stud Kit ..... P/N 04-06020 ..... $9.65
Metal Large Base Stud Kit ..... P/N 04-06025 ..... $15.75
Fiberglass Base Stud Kit ..... P/N 04-06030 ..... $15.75

EZ-POINT NUTS & STUDS FOR COMPOSITES



Creating a hard point in a composite laminated structure has never been easier. Simply drill a hole, prep the area, apply structural adhesive to the alodined, cleaned surface of the EZ-Point and snap into place. Simple and clean. For secondary structural applications, apply three plies of bid cloth to the area. Un-glassed samples were tested to failure in excess of 200 lbs. in shear. Glassed samples exceeded testing ability at over 500 lbs. Perfect for Adel clamps, trim and auto pilot servos, hydraulics, anything but primary structure. Available in 8-32, 10-32, 1/4 – 20, 1/4 – 28, your choice of locking, blind and studs. Used extensively in the installation of the Flesher 360 interior for the Lancair.

STUDS			BLIND NUTS			LOCKING NUTS		
THREAD	P/N	$ EA	THREAD	P/N	$ EA	THREAD	P/N	$ EA
8-32	04-06330	$1.91	8-32	04-06350	$5.50	8-32	04-06370	$3.50
10-32	04-06335	$3.40	10-32	04-06355	$3.95	10-32	04-06375	$3.35
1/4 - 20	04-06340	$2.85	1/4 - 20	04-06360	$3.40	1/4 - 28	04-06380	$3.35
						1/4 - 28	04-06385	$3.35

EZ-POINT STRIPS FOR COMPOSITES

Take the guesswork out of nut plate spacing with EZ-Point Strips. They maintain consistent spacing while remaining flexible enough to conform to curvature. Perfect for cowling attachments, Access doors, removable wingtips, anywhere you would use a standard 10/32 or 8/32 nut plate. Locking threads, available in one, two and three inch centers. Sold in one-foot sections.

8-32 thread, 1" centers ..... P/N 04-06450 ..... $43.25 ea.
8-32 thread, 2" centers ..... P/N 04-06455 ..... $41.50 ea.
8-32 thread, 3" centers ..... P/N 04-06460 ..... $34.80 ea.
10-32 thread, 1" centers ..... P/N 04-06465 ..... $46.75ea.
10-32 thread, 3" centers ..... P/N 04-06475 ..... $38.00 ea.

A-SPEC FASTENERS

ALoc Fasteners are common on Beechcraft airplanes and latches on many cowlings. The design consists of a simple stud with a pin pressed in the shank. The pin must be installed after the stud is installed and removed prior to removing the stud. Some panel applications for #2, #5, and #7 studs may use a wear grommet. Unlike a ZLoc Fastener, this grommet probably does not require replacement when replacing studs. ALoc Fasteners are made in various stud blank lengths and this length is indicated by the 1st Dash#. Each length can have up to 10 2nd Dash#s, or grip sizes. The 2nd Dash# indicates the maximum grip range in .010 increments. Note that the ALoc design has the least grip range of all 1/4 turn fasteners. Skybolt primarily stocks certain sizes in Stainless Steel for replacement purposes only. Pin Installation Tools are expensive and hard to obtain. To remove an ALoc Stud, clip or die grind the pin enough to remove. Modify a standard pair of Vise Grip Pliers with a die grinder by grinding a slot in one jaw to provide relief when the pin is pressed through the stud.

MS P/N	Our P/N	Size/Head Style	Grip	"A"	Total Length	Price
112060-1-060	04-00931	#2 Flush	.051-.060	.200	.359	$4.35
112060-1-080	04-00933	#2 Flush	.071-.080	.220	.359	$3.65
112060-1-090	04-00934	#2 Flush	.081-.090	.230	.359	$3.75
294186-1-080	04-00936	#5 Flush	.071-.080	.267	.500	$4.60
294186-1-100	04-00937	#5 Flush	.091-.100	.287	.500	$3.55
294186-2-180	04-00938	#5 Flush	.171-.180	.367	.609	$3.70
294186-2-190	04-00939	#5 Flush	.181-.190	.377	.609	$3.55
294186-2-200	04-00940	#5 Flush	.191-.200	.387	.609	$3.65
294186-2-210	04-00941	#5 Flush	.201-.210	.397	.609	$4.20
294186-2-230	04-00942	#5 Flush	.220-.230	.417	.609	$3.55
294186-2-240	04-00943	#5 Flush	.231-.240	.427	.609	$3.65
294186-2-250	04-00944	#5 Flush	.241-.250	.437	.609	$3.75
294290-1-080	04-00945	#5 Round	.071-.080	.267	.500	$3.60
294290-1-090	04-00946	#5 Round	.081-.090	.277	.500	$3.60
294290-2-170	04-00947	#5 Round	.161-.170	.357	.609	$3.75

A-SPEC PINS

Series	Description	Part No.	Price
#2	99785-2 Steel	04-01071	$0.88
#2	293274 Stainless	04-01072	$0.82
#5	294185 Stainless	04-01074	$0.82

A-SPEC RECEPTACLES (SOLID RECEPTACLE)

Series	Rivet Spacing	Solid Rec. Plain	Price ea.	Solid Rec. Countersink	Our Part No.	Price ea.
#2	3/4"	99871-P098	Call	99871-C098	04-00951	$5.50
#5	1"	99833-P098	Call	99833-C098	---	Call
		99833-P130	Call	99833-C130	---	Call

A-SPEC RECEPTACLES (FLOATING RECEPTACLE)

Series	Rivet Spacing	Float. Rec. Plain	Our Part No.	Price ea.	Float. Rec. Countersink	Our Part No.	Price ea.
#2	3/4"	--	--	Call	99967-C098	--	Call
#5	1"	99947-P098	04-00954	$5.25	99947-C098	04-00956	$8.95
		99947-P130	04-00955	$2.40	99947-C130	--	Call

A-SPEC GROMMETS

May not require replacement when installing new studs.

Series	Panel Thick.	Flush Head	Part No.	Price
#2	up to .040	295846-1	04-00962	$3.55
	.041-.080	295846-2	04-00963	$3.80
#5	.041-.121	295250-2	04-00964	$3.70
	.122-.201	295250-5	04-00965	$2.40

FLARING TOOLS FOR A-SPEC GROMMETS

These tools are required for replacing any A-Lock grommet.

MS P/N	Our P/N	Type	Price
MS29693/29695	04-00959	#2 Flush	$33.50
MS9529/29667	04-00960	#5 Flush	$29.95
MS9529/29770	04-00961	#5 Round	$29.95

BEECH BONANZA COWLING FASTENER CONVERSION KITS

STC approved cowling fastener upgrade kit for B33 and B35 aircraft. Kit is stainless steel and uses MilSpec's exclusive adjustable depth receptacles for an easy , yet very precise fit. The finish on this fastener is bright and shiny. Complete, easy to follow instructions and STC copy included with kit.
Note: Two tools are required for the 40 series kits (Camloc Pliers and 4002 Series Snap Ring Tool). One tool is required for the 28 series kits (2600-LW Lockwasher Tool).

Beech Kit No.	Model	Serial No.	Description	Price
04-00966	33	CD1-350	Gill conversion 2700 series	$202.95
	35	D1-6567	Slotted head (looks original)	
04-00967	33	CD1-350	Gill conversion 27S3 series	$215.95
	35	D1-6567	Phillips head	
04-00968	33	All	Main Cowling Conversion	$98.50
	35	D1-9068	4002 Series Slotted head	
04-00969	33	All	Main Cowling Conversion	$127.95
	35	D1-9068	40S5 Series Phillips head	
04-00971	33	CD351-on	Gill Conversion	$228.95
	35	D6562-on	4002 Series	
	36	E1 -on	Phillips head	
04-02080	33	CD351 On	Lower Grill Door (Check Panel)	$228.95
	35	D6568 On	Upgrade 4002 Series Slotted	
	36	E1 On	C-Spec	

CESSNA CAMLOC FASTENER COWLING KITS

Model	Year	Serial	Description	P/N	Price
CESSNA 150					
C150 A-M	67 On	ALL	4000/2600 Stainless Phillips Complete Conversion	04-01542	$421.95
			4000 Stainless Phillips Firewall Only Conversion	04-01543	$327.95
CESSNA 172					
C172H-P	67-81	54893-75034	4000 Stainless Phillips Complete Conversions	04-01548	$579.00
			4000 Stainless Phillips Fire-wall Only Conversions	04-01549	$362.95
			4000 Stainless Phillips Side Only Conversions	04-01550	$197.95
C172P-Q	82-86	75035 On	4000 Stainless Phillips Complete Conversions	04-01551	$657.95
			4000 Stainless Phillips Fire-wall Only Conversions	04-01552	$362.95
			4000 Stainless Phillips Side Only Conversions	04-01553	$196.95
C172XP-XPII	77-81	2000-3454	4000 Stainless Phillips Complete Conversions	04-01554	$656.95
			4000 Stainless Phillips Fire-wall Only Conversions	04-01555	$421.95
CESSNA 177					
C177A-B and C177 RG	71-78	00001 - 02752 and 00001 - 1366	4000 Stainless Phillips Complete Conversion	04-01562	$568.50
			4000 Stainless Phillips Firewall Only Conversion	04-01563	$451.95
			4000 Stainless Phillips Side Only Conversion	04-01564	$120.95
CESSNA 182					
C182	56-60	33000-53007 Screw Cowlings	2800 Stainless Phillips Complete Conversion	04-01566	$466.95
C182P-R	73-86	61426-68542	4000 Stainless Phillips Complete Conversion	04-01568	$567.00
			4000 Stainless Phillips Firewall Only Conversion	04-01569	$478.95

CESSNA – BEECH COWLING FASTENER KITS

CESSNA COWLING STAINLESS SK203 FASTENER CONVERSION KITS

Model	Year	Serial No.	Skybolt Part Number	Description	Part No.	Price
C150	59-66	17001-64532	C150C2800P	Screw Cowling - to SK28S3S Phillips	04-02179	$315.00
C150G-M	67-On	64533-79405	SK203C150P-SD2	SK28S3 Phillips - Side Kit	04-02180	$131.75
A150K-M	70-77	A150001-A150685	SK203C150P4	SK40S5S Phillips - Complete Kit	08-00666	$489.00
			SK203C150P4D	SK40S5S Phillips - Complete Kit/Doubler	04-02182	$739.00
SK-C150DL Doubler			SK203C150P-FW4	SK40S5S Phillips - Firewall Kit	04-02258	$447.00
SK-C150DR Doubler			SK203C150P-RET	SK40S5S Phillips - Retro Kit	04-02259	$428.00
C172	56-66	28000-54892	C172C2800P	Screw Cowling - to SK28S3S Phillips	04-02185	$449.00
C172H-P	67-81	54893-75034	SK203C172P4	SK40S5S Phillips - Complete Kit	08-00667	$737.00
	Standard Cowl - All Southco		SK203C172P-FW4	SK40S5S Phillips - Firewall Kit	04-02187	$482.00
			SK203C172P-SD4	SK40S5S Phillips - Side Kit	04-02186	$285.95
			SK203C172P-RET	SK40S5S Phillips - Retro Kit	04-02188	$405.00
C172P	80-83	75035-76079	SK203C172PQ4	SK40S5S Phillips - Complete Kit	08-00671	$742.00
C172Q	83	75869-76079	SK203C172P-FW4	SK40S5S Phillips - Firewall Kit	04-02187	$482.00
C172P-Q	84-85	76080-76516	SK203C172PQSD4	SK40S5S Phillips - Side Kit	04-02190	$285.95
Camloc 4002 across nose - remainder Southco			SK203C172P-RET	SK40S5S Phillips - Retro Kit	04-02188	$405.00
C172XP-XPII	77-81	2000-3454	SK203C172P-XP4	SK40S5S Phillips - Complete Kit	04-02191	$734.00
Will not fit T41			SK203C172PXPFW4	SK40S5S Phillips - Firewall Kit	04-02192	$543.00
Southco - Firewall			SK203C172PXPSD4	SK40S5S Phillips - Side Kit	04-02193	$233.95
Camloc 4002 across nose and center split			SK203C172PXP-RET	SK40S5S Phillips - Retro Kit	04-02194	$463.00
C172R & S	97-On	80001-On	SK203C172P-RS4	SK40S5S Phillips - Complete Kit	04-02195	$630.00
		8001-On	Note: Kit replaces J7444 mounts, all CLoc studs/grommets on firewall, sides, nose, service door,filter.			
Camloc 4002 - firewall/sides			SK203C172P-RS4FW	SK40S5S Phillips - Firewall Kit	04-02196	$491.00
C175	58-62	55001-57119	C175C2800P	Screw Cowling - to SK28S3S Phillips	04-02197	$449.00
C177A-B	68-78	00001-02752	SK203C177P4	SK40S5S Phillips - Complete Kit	08-00668	$694.00
C177RG	71-78	00001-1366	SK203C177P-FW4	SK40S5S Phillips - Firewall Kit	04-02198	$585.00
			SK203C177P-SD4	SK40S5S Phillips - Side Kit	04-02199	$232.95
			SK203C177P-RET	SK40S5S Phillips - Retro Kit	04-02201	$486.00
C180	53-60	30000-50911	C180C2800P	Screw Cowling - to SK28S3S Phillips	04-02202	$449.00
C182	56-60	33000-53007	C182C2800P	Screw Cowling - to SK28S3S Phillips	04-02203	$449.00
C182P-RB	73-86	61426-68542	SK203C182P2	SK28S3/40S5S Phillips - Complete Kit	04-02204	$499.00
			SK203C182P4	SK40S5S Phillips - Complete Kit	04-02205	$584.00
			SK203C182P-FW4	SK40S5S Phillips - Firewall Kit	08-00669	$612.00
			SK203C182P-RET	SK40S5S Phillips - Retro Kit	04-02206	$503.00

Note: RET Kits are for customers who have previously installed SK245 Kits and want to convert back to the SK2003 rubber mounts.
RET Kits include new SK2003 Mounts, SK2003-AW Alignment Washers and all Hardware (No Studs or Grommets)

BEECH BONANZA & DEBONAIR COWLING REPLACEMENT AND CONVERSION KITS

UPPER COWL - DZUS® AJ5 CONFIGURATION

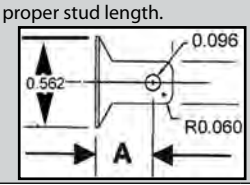
Model	Year	Serial No.	Kit	Fastener	Kit Type	Req Tool#	Part No.	Price
Debonair (33)	60-67	CD1-CD1234	B35UC530	Stainless ZLoc	Replacement	1	04-02207	$33.05
C33A,E33A	66-69	CE1-CE289	B35UC40P	Stainles SK40S5S Phillips CLoc	Conversion	2,6	04-02208	$94.75
Bonanza (35)	47-69	D1 - D9068	B35UC40S	Stainless SK4002S Collared Slot CLoc	Conversion	2,6	04-02209	$99.00
Upper Cowl - Latch Configuration - All serial numbers not listed above (No Fasteners/No Kit)								

LOWER COWL - AIRLOC #2 CONFIGURATION

Model	Year	Serial No.	Kit	Fastener	Kit Type	Req Tool#	Part No.	Price
Debonair (33)	60-61	CD1-CD350	B35LC2090	Stainless #2 ALoc	Replacement	3	04-02210	$59.28
Bonanza (35)	47-61	D1 - D6567	B35LC28P	Stainless SK28S3S Phillips CLoc	Conversion	4	04-02211	$146.68
			B35LC27S	Stainless SK2700S Collared Slot CLoc	Conversion	4	04-02212	$146.68

LOWER COWL - AIRLOC #5-080 CONFIGURATION

Model	Year	Serial No.	Kit	Fastener	Kit Type	Req Tool#	Part No.	Price
Bonanza N35-V35A	61-69	D6568-D9068	B35LC5080	Stainless #5 ALoc	Replacement	5	04-02213	$59.28
33*	61-67	CD351-CD1234	B35LC40P	Stainless SK40S5S Phillips CLoc	Conversion	2,6	04-02214	$173.17
F33*	70	CD1235-CD1254	B35LC40S	Stainless SK4002S Collared Slot CLoc	Conversion	2,6	04-02080	$228.95
G33	72-73	CD1255-CD1304	* 33 and F33 Note: Check for proper stud length.					
C33A, E33A, F33A	66-87	CE1-On						
F33C	70	CJ26 On						
36	68-73	E1-E424						



	A Dimension
-080	.267
-100	.187

LOWER COWL - AIRLOC #5-100 CONFIGURATION

Model	Year	Serial No.	Kit	Fastener	Kit Type	Req Tool#	Part No.	Price
V35B	70-82	D9069-On	B35LC5100	Stainless #5 ALoc	Replacement	5	04-02215	$59.28
36TC	79-87	EA1-On	B35LC40P	Stainless SK40S5S Phillips CLoc	Conversion	2,6	04-002216	$173.17
36	73-On	E425-On	B35LC40S	Stainless SK4002S Collared Slot CLoc	Conversion	2,6	04-02217	$173.17

Installation Tool#	Tool Part#	Description	Part No.	Price
1	SK-A5C	#5 ZLoc Grommet Tool	04-02218	$79.75
2	4P3-T26	Installation Pliers and Grommet retainer tool	04-01990	$79.75

See www.aircraftspruce.com for Piper, Mooney, Commander, Mitsubishi, Bellanca, Champion, Citabria, Decathlon, and Merlin conversion kits.

VANS RV – LANCAIR COWLING FASTENER KITS

COWLING MOUNTING KITS

Kits Include SK215 and SK245 Dash 4 Series Receptacles and SK-RVFS1 Flanges

Skybolt P/N	Aircraft	Description	Part No.	Price
RV4J-C1S	Vans RV4 - Complete Kit	38 Collared Slotted Fasteners	04-00399	$381.00
RV4J-C1P	Vans RV4 - Complete Kit	Phillips	04-00403	$381.00
RV4J-C1S-U	Vans RV4 - Upper (FW/Side) Kit	30 Collared Slotted Fasteners	04-02238	$336.00
RV4J-C1P-U	Vans RV4 - Upper (FW/Side) Kit	Phillips	04-02041	$400.00
RV4J-C1S-F	Vans RV4 - Complete Firewall Kit	18 Collared Slotted Fasteners	04-00405	$208.95
RV4J-C1P-F	Vans RV4 - Complete Firewall Kit	Phillips	04-00406	$211.95
RV4J-C1S-UF	Vans RV4 - Upper Firewall Kit	10 Collared Slotted Fasteners	04-02240	$123.50
RV4J-C1P-UF	Vans RV4 - Upper Firewall Kit	Phillips	04-02042	$147.75
RV4J-C1S-S	Vans RV4 - Side Kit	20 Collared Slotted Fasteners	04-00407	$230.95
RV4J-C1P-S	Vans RV4 - Side Kit	Phillips	04-00408	$221.95
RV4J-C1S-C	Vans RV4 - Cheek Cowl Kit	8 Collard Slotted Fasteners	04-02241	$100.80
RV4J-C1P-C	Vans RV4 - Cheek Cowl Kit	Phillips	04-02242	$102.80
RV8J-C1S	Vans RV8 - Complete Kit	50 Collared Slotted Fasteners	04-00409	$487.00
RV8J-C1P	Vans RV8 - Complete Kit	Phillips	04-00410	$498.00
RV8J-C1S-U	Vans RV8 - Upper (FW/Side) Kit	34 Collared Slotted Fasteners	04-02243	$375.00
RV8J-C1P-U	Vans RV8 - Upper (FW/Side) Kit	Phillips	04-02043	$447.00
RV8J-C1S-F	Vans RV8 - Complete Firewall Kit	30 Collared Slotted Fasteners	04-00411	$323.00
RV8J-C1P-F	Vans RV8 - Complete Firewall Kit	Phillips	04-00412	$333.00
RV8J-C1S-UF	Vans RV8 - Upper Firewall Kit	14 Collared Slotted Fasteners	04-02244	$162.80
RV8J-C1P-UF	Vans RV8 - Upper Firewall Kit	Phillips	04-02044	$179.75
RV8J-C1S-S	Vans RV8 - Side Kit	20 Collared Slotted Fasteners	04-00413	$230.95
RV8J-C1P-S	Vans RV8 - Side Kit	Phillips	04-00415	$236.95
RV679J-C1S	Vans RV6,7,9 - Complete Kit	52 Collared Slotted Fasteners	04-02245	$505.00
RV679J-C1P	Vans RV6,7,9 - Complete Kit	Phillips	04-00418	$498.00
RV679J-C1S-U	Vans RV6,7,9 - Upper (FW/Side) Kit	36 Collared Slotted Fasteners	04-00417	$394.00
RV679J-C1P-U	Vans RV6,7,9 - Upper (FW/Side) Kit	Phillips	04-02045	$470.00
RV679J-C1S-F	Vans RV6,7,9 - Complete Firewall Kit	32 Collared Slotted Fasteners	04-00419	$345.00
RV679J-C1P-F	Vans RV6,7,9 - Complete Firewall Kit	Phillips	04-00420	$328.00
RV679J-C1S-UF	Vans RV6,7,9 - Upper Firewall Kit	16 Collared Slotted Fasteners	04-02246	$182.75
RV679J-C1P-UF	Vans RV6,7,9 - Upper Firewall Kit	Phillips	04-02046	$218.95
RV679J-C1S-S	Vans RV6,7,9 - Side Kit	20 Collared Slotted Fasteners	04-00421	$230.95
RV679J-C1P-S	Vans RV6,7,9 - Side Kit	Phillips	04-00422	$235.95
RV10J-C1S	Vans RV10 - Complete Kit	62 Collared Slotted Fasteners	04-02247	$594.00
RV10J-C1P	Vans RV10 - Complete Kit	Phillips	04-02157	$583.00
RV10J-C1S-U	Vans RV10 - Upper (FW/Side) Kit	45 Collared Slotted Fasteners	04-02158	$483.00
RV10J-C1P-U	Vans RV10 - Upper (FW/Side) Kit	Phillips	04-02154	$493.00
RV10J-C1S-F	Vans RV10 - Complete Firewall Kit	36 Collared Slotted Fasteners	04-02159	$384.00
RV10J-C1P-F	Vans RV10 - Complete Firewall Kit	Phillips	04-02156	$394.00
RV10J-C1S-UF	Vans RV10 - Upper Firewall Kit	19 Collared Slotted Fasteners	04-02248	$211.95
RV10J-C1P-UF	Vans RV10 - Upper Firewall Kit	Phillips	04-02155	$254.95
RV10J-C1S-S	Vans RV10 - Side Kit	26 Collared Slotted Fasteners	04-02160	$288.95
RV10J-C1P-S	Vans RV10 - Side Kit	Phillips	04-02161	$295.95
LANCAIR-C1S	Lancair - Complete Kit	62 Collared Slotted Fasteners (Inc SK2800S)	04-00423	$807.00
LANCAIR-C1P	Lancair - Complete Kit	Phillips (Inc SK28S3S around gear well)	04-00424	$809.00
LANCAIR-C1S-U	Lancair - Upper Cowl Kit	45 Collared Slotted Fasteners	04-02249	$482.00
LANCAIR-C1P-U	Lancair - Upper Cowl Kit	Phillips	04-02047	$616.00
LANCAIR-C1S-F	Lancair - Firewall Kit	36 Collared Slotted Fasteners	04-00425	$306.95
LANCAIR-C1P-F	Lancair - Firewall Kit	Phillips	04-02048	$479.95
LANCAIR-C1S-UF	Lancair - Upper Firewall Kit	19 Collared Slotted Fasteners	04-02250	$211.95
LANCAIR-C1P-UF	Lancair - Upper Firewall Kit	Phillips	04-02251	$216.95
LANCAIR-C1S-S	Lancair - Side Kit	26 Collared Slotted Fasteners	04-02252	$289.95
LANCAIR-C1P-S	Lancair - Side Kit	Phillips	04-02049	$370.95
RV-OD1	Oil Door Winged Fasteners (Skytanium)	2 ea ZG2600-1W, SK213-2, Drill Template	04-02253	$17.50
RV-OD2	Oil Door Phillips Fasteners (Stainless)	2 ea SK28S3-2S, SK213-2, Drill Template	04-02254	$15.85
SK-RVFS1	Iner-connecting Flange (Patent Pending)	1 ea Flange	04-02255	$2.90
SK-RVCI	Cleko Insert	1 ea Insert	04-02256	$1.98
SK-4002-TS2	Installation Tool Set	SK-4P3 Pliers, T26 Tool, Unibit-1, Unibit-4	04-02257	$154.75
4P3-T26	Stud Installation Pliers, Retainer Installation Tool		04-01990	$79.75

AN FITTINGS

The aircraft fittings shown on the following pages conform to current AN and MS specifications. We stock aluminum, brass and/or steel fittings. Fittings not regularly stocked can be special ordered. Order by Part Number. Example: AN840-8D.

AN804

TEE, FLARED TUBE WITH BULKHEAD ON RUN

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$12.75	- - -
3	3D	3/16	3/8-24	$11.80	$12.55
4	4D	1/4	7/16-20	$21.55	$10.95
5	5D	5/16	1/2-20	$32.50	$14.50
6	6D	3/8	9/16-18	$21.95	$12.50
8	8D	1/2	3/4-16	$18.95	$15.96
10	10D	5/8	7/8-14	- - -	$26.90
12	12D	3/4	1-1/16-12	- - -	- - -

AN815

UNION, FLARED TUBE

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$10.75	$3.23
3	3D	3/16	3/8-24	$7.50	$3.35
4	4D	1/4	7/16-20	$8.50	$2.20
5	5D	5/16	1/2-20	$10.50	$4.40
6	6D	3/8	9/16-18	$7.90	$3.35
8	8D	1/2	3/4-16	$8.75	$4.50
10	10D	5/8	7/8-14	$13.50	$6.50
12	12D	3/4	1-1/16-12	$23.50	$9.78

SS AN815-4J .....P/N AN815-4J $7.50
SS AN815-6J .....P/N AN815-6J $9.35

AN818

NUT, COUPLING

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$1.56	$0.99
3	3D	3/16	3/8-24	$1.22	$0.75
4	4D	1/4	7/16-20	$1.68	$0.66
5	5D	5/16	1/2-20	$2.76	$1.15
6	6D	3/8	9/16-18	$2.63	$0.91
8	8D	1/2	3/4-16	$3.35	$1.74
10	10D	5/8	7/8-14	$6.50	$2.55
12	12D	3/4	1-1/16-12	$4.15	$3.60

SS AN818-4J .....P/N AN818-4J $2.34
SS AN818-6J .....P/N AN818-6J $2.47

AN816

NIPPLE, FLARED TUBE AND PIPE THREAD

Size No. Steel	Size No. Alum.	Tube O.D.	Pipe Size	Price Each Steel	Price Each Alum.
2	2D	1/8	1/8	$9.50	$3.80
3	3D	3/16	1/8	$5.87	$2.42
4	4D	1/4	1/8	$6.99	$2.34
4-4	4-4D	1/4	1/4	$6.90	$2.69
5	5D	5/16	1/8	$7.35	$3.80
6	6D	3/8	1/4	$6.50	$2.85
6-2	6-2D	3/8	1/8	$8.00	$3.50
6-6	6-6D	3/8	3/8	$11.50	$3.35
7	7D	1/2	1/4	$13.50	$4.90
8	8D	1/2	3/8	$11.75	$4.35
10	10D	5/8	1/2	$13.94	$5.40
12	12D	3/4	3/4	$22.75	$6.75

SS AN816-4J .....P/N AN816-4J $8.45

AN819 (MS20819)

SLEEVE, COUPLING

Size No. Steel	Size No. Alum.	Tube O.D.	Price Each Steel	Price Each Alum.
2	2D	1/8	$2.61	$0.68
3	3D	3/16	$1.04	$0.69
4	4D	1/4	$0.74	$0.58
5	5D	5/16	$1.54	$0.87
6	6D	3/8	$1.35	$0.76
8	8D	1/2	$2.15	$1.23
10	10D	5/8	$2.50	$1.77
12	12D	3/4	$4.50	- - -

AN807

ADAPTER HOSE TO UNIVERSAL

Size No. Brass	Size No. Alum.	Hose I.D.	Thread Size	Price Each Brass	Price Each Alum.
4	4D	1/4	7/16-20	$23.00	$16.45
6	6D	3/8	9/16-18	---	$12.90
8	8D	1/2	3/4-16	- - -	$25.85

AN814

PLUG AND BLEEDER, SCREW THREAD

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	- - -	$6.38
3	3D	3/16	3/8-24	$9.25	$1.59
4	4D	1/4	7/16-20	$9.86	$3.15
5	5D	5/16	1/2-20	$10.46	$2.70
6	6D	3/8	9/16-18	$7.50	$2.67
8	8D	1/2	3/4-16	$11.75	$4.45
10	10D	5/8	7/8-14	- - -	$6.95
12	12D	3/4	1-1/16-12	$19.90	$7.50

AN821

ELBOW, FLARED TUBE, 90°

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	---	$12.37
3	3D	3/16	3/8-24	$14.25	$7.25
4	4D	1/4	7/16-20	$11.50	$7.80
5	5D	5/16	1/2-20	$84.75	$11.50
6	6D	3/8	9/16-18	$13.50	$13.90
8	8D	1/2	3/4-16	$19.93	$9.75
10	10D	5/8	7/8-14	$32.25	$10.50
12	12D	3/4	1-1/16-12	- - -	$15.50

New Surplus AN821-5
P/N 04-02177.....$21.50

AN806

FLARED TUBE PLUG

Size No. Steel	Size No. Alum.	Tube O.D.	Thread Size	Price Each Steel	Price Each Alum.
2	2D	1/8	5/16-24	$5.60	$2.67
3	3D	3/16	3/8-24	$3.60	$1.50
4	4D	1/4	7/16-20	$6.75	$1.54
5	5D	5/16	1/2-20	$3.45	$1.56
6	6D	3/8	9/16-18	$5.87	$1.45
8	8D	1/2	3/4-16	$6.60	$3.35

DEL 37° FITTING SEALS

DEL fitting seals are designed to eliminate leakage due to scratches on the sealing surface, improper torquing, or poor finishes on tube ends, in high or low pressure applications. For use with AN, MS, and JIC 37° flared fittings, DEL fitting seals also reduce tube flare cracking by reducing torque needed, eliminating nose damage to the fitting, and allow reuse of hardware. Approved by FAA, NASA, SAE, Air Force, Army, Navy, and major aerospace contractors.

Part Number	Tube Size OD	Fitting Dash Size	Price Each
04-05002	1/8	2	$1.68
04-05003	3/16	3	$1.70
04-05004	1/4	4	$1.73
04-05006	3/8	6	$1.76
04-05008	1/2	8	$1.78
04-05010	5/8	10	$1.89
04-05012	3/4	12	$1.93
04-05016	1	16	$1.88

AN822 (MS20822)

ELBOW, FLARED TUBE AND PIPE THREAD, 90°

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	1/8	$24.87	$11.50
3	3D	3/16	1/8	$8.75	$7.55
4	4D	1/4	1/8	$12.50	$6.90
4-4	4-4D	1/4	1/4	$9.50	$8.75
-	5-4D	5/16	1/4	-	$15.50
5	5D	5/16	1/8	$12.65	$9.36
6	6D	3/8	1/4	$16.50	$7.95
6-2	6-2D	3/8	1/8	$15.25	$8.85
6-6	6-6D	3/8	3/8	$28.50	$9.25
8	8D	1/2	3/8	$15.70	$11.50
10	10D	5/8	1/2	$22.75	$10.78
12	12D	3/4	3/4	$25.70	$13.75

AN825 (MS20825)

TEE, FLARED TUBE WITH PIPE HREAD ON SIDE

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Thread	Steel	Alum.
2	2D	1/8	1/8	---	$13.70
3	3D	3/16	1/8	$15.75	$9.50
4	4D	1/4	1/8	$18.75	$7.75
5	5D	5/16	1/8	$14.50	$12.75
6	6D	3/8	1/4	$14.85	$9.55
8	8D	1/2	3/8	---	$10.70
10	10D	5/8	1/2	---	$16.80
12	12D	3/4	3/4	---	---

New Surplus AN825-10D.....P/N 04-02226.....$12.90

AN832

UNION, FLARED TUBE, BULKHEAD AND UNIVERSAL

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	$10.95	$8.97
3	3D	3/16	3/8-24	$11.50	$4.50
4	4D	1/4	7/16-20	$10.50	$3.45
5	5D	5/16	1/2-20	$14.70	$6.60
6	6D	3/8	9/16-18	$16.50	$4.35
8	8D	1/2	3/4-16	$18.50	$7.50
10	10D	5/8	7/8-14	$29.80	$8.75
12	12D	3/4	1-1/16-12	$23.50	$14.70

SS AN832-4J .....P/N AN832-4J $11.65
SS AN832-6J .....P/N AN832-6J $11.65

AN823 (MS20823)

ELBOW, FLARED TUBE AND PIPE THREAD, 45°

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Thread	Steel	Alum.
2	2D	1/8	1/8	$36.45	$11.65
3	3D	3/16	1/8	$10.50	$7.50
4	4D	1/4	1/8	$11.78	$6.99
5	5D	5/16	1/8	$12.70	$9.65
6	6D	3/8	1/4	$13.75	$10.50
8	8D	1/2	3/8	$17.50	$10.85
10	10D	5/8	1/2	---	$12.80
12	12D	3/4	3/4	$35.50	$17.50

New Surplus AN823-12.....P/N 04-02268.....$19.90

AN826 (MS20826)

EE TUBE WITH PIPE THREAD ON RUN

Size No.		Tube	Pipe	Price Each	
Steel	Alum.	O.D.	Thread	Steel	Alum.
3	3D	3/16	1/8	$20.70	$9.75
4	4D	1/4	1/8	$12.70	$8.85
5	5D	5/16	1/8	$18.50	$13.55
6	6D	3/8	1/4	$17.50	$9.50
8	8D	1/2	3/8	$24.60	$14.80
10	10D	5/8	1/2	$18.50	$15.00
12	12D	3/4	3/4	---	$21.55

New Surplus AN826-3.....P/N 04-02227.....$10.50

AN833

ELBOW, FLARED TUBE BULKHEAD AND UNIVERSAL, 90°

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	$31.50	$15.50
3	3D	3/16	3/8-24	$13.75	$8.50
4	4D	1/4	7/16-20	$13.95	$8.30
5	5D	5/16	1/2-20	$19.95	$10.90
6	6D	3/8	9/16-18	$12.50	$11.60
8	8D	1/2	3/4-16	$16.50	$14.50
10	10D	5/8	7/8-14	---	$17.50
12	12D	3/4	1-1/16-12	---	$15.85

AN824

TEE, FLARED TUBE

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	---	$15.50
3	3D	3/16	3/8-24	$11.90	$7.60
4	4D	1/4	7/16-20	$10.97	$7.94
5	5D	5/16	1/2-20	$21.50	$7.95
6	6D	3/8	9/16-18	$19.97	$9.50
8	8D	1/2	3/4-16	$23.50	$12.80
10	10D	5/8	7/8-14	$26.50	$15.50
12	12D	3/4	1-1/16-12	---	$23.50

New Surplus AN824-2
P/N 04-02178.....$12.50

AN827

CROSS, FLARED TUBE

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	---	---
3	3D	3/16	3/8-24	---	$12.75
4	4D	1/4	7/16-20	$22.55	$14.50
5	5D	5/16	1/2-20	---	$25.65
6	6D	3/8	9/16-18	---	$13.96
8	8D	1/2	3/4-16	---	$17.50
10	10D	5/8	7/8-14	---	---
12	12D	3/4	1-1/16-12	---	$28.50

AN834

TEE, FLARED TUBE, BULKHEAD AND UNIVERSAL

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	---	$49.95
3	3D	3/16	3/8-24	---	$13.50
4	4D	1/4	7/16-20	$19.92	$10.99
5	5D	5/16	1/2-20	---	$12.75
8	8D	1/2	3/4-16	$25.75	$19.50
10	10D	5/8	7/8-14	---	$25.70
12	12D	3/4	1-1/16-12	---	---

New Surplus AN834-6.....P/N 04-02273.....$17.65

AN FITTINGS

AN837 ELBOW,

FLARED TUBE, BULKHEAD AND UNIVERSAL 45°

Size No.		Tube	Thread	Price Each	
Steel	Alum.	O.D.	Size	Steel	Alum.
2	2D	1/8	5/16-24	---	$15.50
3	3D	3/16	3/8-24	$14.50	$8.25
4	4D	1/4	7/16-20	$11.97	$8.50
5	5D	5/16	1/2-20	$16.75	$8.90
6	6D	3/8	9/16-18	$16.85	$8.95
8	8D	1/2	3/4-16	$24.50	$10.45
10	10D	5/8	7/8-14	$25.95	$18.50
12	12D	3/4	1-1/16-12	---	---

AN844 HOSE ELBOW,

PIPE THREAD, 45°

Size No.		Hose	Pipe	Price Each	
Brass	Alum.	I.D.	Thread	Brass	Alum.
4	4D	1/4	1/8	---	$13.60
6	6D	3/8	1/4	---	$13.75
8	8D	1/2	3/8	$15.75	$13.85
10	10D	5/8	1/2	$14.88	$19.83

New Surplus AN844-4
P/N 04-02175.....$14.90
New Surplus AN844-10D
P/N 04-02274.....$19.50

AN910 COUPLING

PIPE THREAD

Size No.		Thread	Price Each	
Brass	Alum.	Size	Brass	Alum.
1	1D	1/8	$6.50	$3.35
2	2D	1/4	$6.38	$3.90
3	3D	3/8	$11.50	$4.70
4	4D	1/2	$12.50	$8.50
6	6D	3/4	$39.50	$12.50

AN911 NIPPLE

PIPE THREAD

Size No.		Pipe	Price Each	
Brass	Alum.	Thread	Brass	Alum.
1	1D	1/8	$3.35	$2.89
2	2D	1/4	$9.50	$3.75
3	3D	3/8	$7.50	$3.50
4	4D	1/2	$12.60	$8.50
6	6D	3/4	$19.93	$6.75

AN838 ELBOW, BULKHEAD & HOSE TO UNIVERSAL, 90°

Size No.		Hose	Thread	Price Each	
Brass	Alum.	O.D.	Size	Brass	Alum.
4	4D	1/4	7/16-20	---	$12.50
6	6D	3/8	9/16-18	---	$31.50

AN848 ELBOW,

HOSE BULKHEAD, 90°

Size No.		Hose	Thread	Price Each	
Brass	Alum.	I.D.	Size	Brass	Alum.
---	4D	1/4	7/16-20	--	$22.50
---	6D	3/8	9/16-18	--	$24.95
---	8D	1/2	3/4-16	--	$49.75

AN912 BUSHING

PIPE THREAD REDUCER

Size No. Alum.	Pipe Size	Price Ea.	Size No Alum	Pipe Size	Price Ea.
1D	1/4-1/8	$2.99	8D	3/4-3/8	$7.50
2D	3/8-1/4	$3.45	9D	3/4-1/4	$11.65
3D	3/8-1/8	$4.85	10D	1-3/4	$16.50
4D	1/2-3/8	$5.35	11D	1-1/2	$11.50
5D	1/2-1/4	$4.70	12D	1-3/8	$15.75
6D	1/2-1/8	$8.50	13D	11/4-3/4	$12.75
7D	3/4-1/2	$6.95			

New Surplus AN912-11D.....P/N 04-02271.....$11.50

AN840 HOSE NIPPLE,

PIPE THREAD

Size No.		Hose	Pipe	Price Each	
Brass	Alum.	I.D.	Size	Brass	Alum.
4	4D	1/4	1/8	$10.80	$4.45
6	6D	3/8	1/4	$11.90	$5.45
8	8D	1/2	3/8	$16.80	$6.80
---	10D	5/8	1/2	---	$7.89
12	12D	3/4	3/4	$23.75	$13.93

AN842 HOSE ELBOW,

PIPE THREAD, 90°

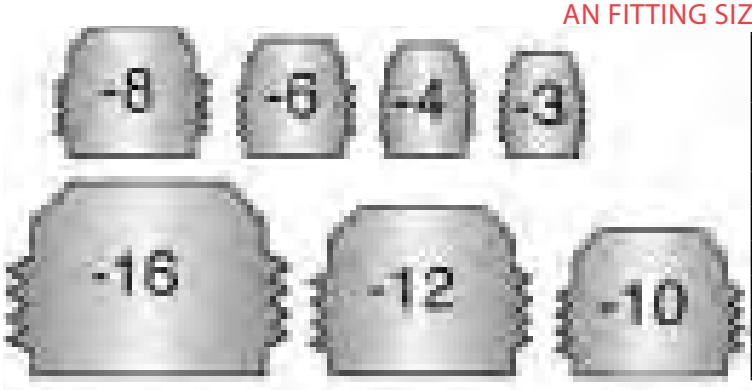
Size No.		Hose	Pipe	Price Each	
Brass	Alum.	I.D.	Thread	Brass	Alum.
4	4D	1/4	1/8	$10.70	$14.75
6	6D	3/8	1/4	$11.50	$12.60
8	8D	1/2	3/8	---	$12.80
10	10D	5/8	1/2	$33.50	$16.85
12	12D	3/4	3/4	$21.80	$38.50

AN913 (MS20913) PLUG

SQUARE HEAD, PIPE THREAD

Size No.			Pipe	Price Each		
Brass	Steel	Alum.	Thread	Brass	Steel	Alum.
1	1S	1D	1/8	$3.20	$6.55	$4.10
2	2S	2D	1/4	$10.50	$6.64	$3.60
3	3S	3D	3/8	$10.50	---	$5.35
4	4S	4D	1/2	$15.60	---	$6.99
6	6S	6D	3/4	$24.50	---	$15.90

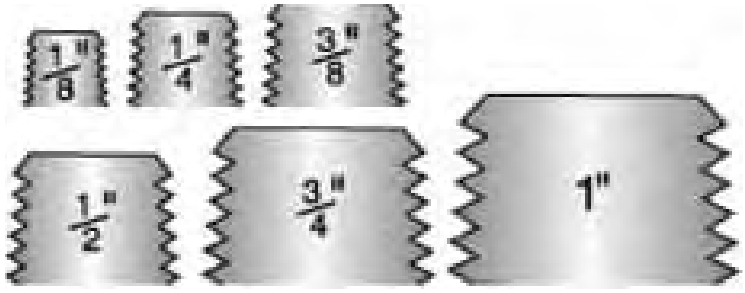
AN FITTING SIZES



AN Size	Metal Tube O.D.	Thread Size
2	1/8	5/16-24 SAE
3	3/16	3/8-24 SAE
4	1/4	7/16-20 SAE
5	5/16	1/2-20 SAE
6	3/8	9/16-18 SAE
8	1/2	3/4-16 SAE
10	5/8	7/8-14 SAE
12	3/4	1-1/16-12 SAE
16	1"	1-5/16-12 SAE

NPT FITTING SIZES

Pipe Thread Size	Threads per inch	Theoretical I.D. of Fitting	Closest AN FittingSize
1/16"	27	1/16"	
1/8"	27	1/8"	4
1/4"	18	1/4"	6
3/8"	18	3/8"	8
1/2"	14	1/2"	10
3/4"	14	3/4"	12
1"	11.5	1"	16
1-1/4"	11.5	1-1/4"	20
1-1/2"	11.5	1-1/2"	24
2"	11.5	2"	



DIAGRAMS MAY NOT BE ACCURATE AND SHOULD NOT BE USED FOR EXACT SIZING. FOR REFERENCE ONLY

AN FITTINGS

AN914 ELBOW,

INTERNAL AND EXTERNAL PIPE THREAD, 90°

Size No.		Pipe Thread	Price Each	
Brass	Alum.		Brass	Alum.
1	1D	1/8	$21.50	$8.50
2	2D	1/4	$13.70	$8.85
3	3D	3/8	$24.90	$12.90
4	4D	1/2	---	$23.50

New Surplus AN914-6D ..... P/N 04-02267 ..... $15.85

AN915 ELBOW,

INTERNAL AND EXTERNAL PIPE THREAD, 45°

Size No.		Pipe Thread	Price	
Brass	Alum.		Brass	Alum.
1	1D	1/8	$19.55	$15.95
2	2D	1/4	---	$9.50
3	3D	3/8	$12.85	$17.92
4	4D	1/2	$29.25	$13.75
6	6D	3/4	---	$20.85

New Surplus AN915-6D ..... P/N 04-02233 ..... $20.85

AN916 ELBOW,

INTERNAL PIPE THREAD, 90°

Size No.		Pipe Thread	Price	
Brass	Alum.		Brass	Alum.
1	1D	1/8	$31.50	$13.50
2	2D	1/4	$14.58	$11.85
3	3D	3/8	$17.78	$15.99
4	4D	1/2	--	$39.50
6	6D	3/4	--	--

New Surplus AN916-6D
P/N 04-02176 ..... $20.85

AN917 TEE,

INTERNAL, PIPE THREAD

Size No.		Pipe Thread	Price	
Brass	Alum.		Brass	Alum.
1	1D	1/8	$17.85	$14.94
2	2D	1/4	$22.50	$11.50
3	3D	3/8	$20.25	$14.75
4	4D	1/2	$49.85	$25.70
6	6D	3/4	---	$42.75

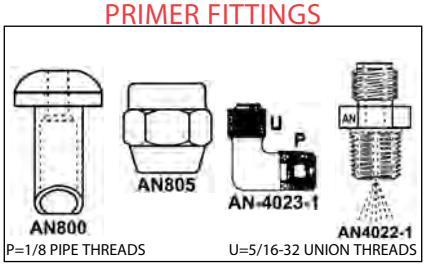
AN918

CROSS INTERNAL PIPE THREAD

Size # Alum.	Pipe Thread	Price Ea Alum.
1D	1/8	$17.50
2D	1/4	$27.95
3D	3/8	---
6D	3/4	$18.75

New Surplus AN918-4D
P/N 04-02284 ..... $23.50

PRIMER FITTINGS



P=1/8 PIPE THREADS U=5/16-32 UNION THREADS

AN No.	Description	Thread	Price
AN780-2	Union Nipple	1/8x5/16-32	$7.90
AN800-2	Union Cone	--	$1.26
AN805-2	Union Nut	5/16-32	$1.50
AN4022-1	Discharge Nipple	1/8x5/16-32	$14.50
AN4023-1	Discharge Elbow New Surplus	1/8x5/16-32	$13.50

AN924 NUT,

FLARED TUBE, BULKHEAD AND UNIVERSAL FITTING

Size No.		Tube O.D.	Thread Size	Price	
Steel Black	Alum. Blue			Steel	Alum.
2	2D	1/8	5/16-24	$1.13	$0.85
3	3D	3/16	3/8-24	$1.85	$0.80
4	4D	1/4	7/16-20	$1.70	$0.97
5	5D	5/16	1/2-20	$2.90	$0.99
6	6D	3/8	9/16-18	$3.97	$0.93
8	8D	1/2	3/4-16	$3.15	$1.54
10	10D	5/8	7/8-14	$3.75	$2.50
12	12D	3/4	1-1/16-12	$12.50	$3.96

AN929 CAP,

FLARED TUBE FITTING

Size No.	Tube O.D.	Thread Size	Price Each
2D	1/8	5/16-24	$1.97
3D	3/16	3/8-24	$2.17
4D	1/4	7/16-20	$1.73
5D	5/16	1/2-20	$1.50
6D	3/8	9/16-18	$1.63
8D	1/2	3/4-16	$4.35
10D	5/8	7/8-14	$4.85
12D	3/4	1-1/16-12	$6.50

AN919 REDUCER,

EXTERNAL THREAD

Size No.		Tube O.D.	Price	
Steel	Alum.		Steel	Alum.
0	0D	3/16-1/8	$14.50	$7.95
1	1D	1/4-1/8	$14.50	$5.35
2	2D	1/4-3/16	$9.85	$3.55
3	3D	5/16-1/4	$8.60	$4.45
4	4D	3/8-1/8	$19.90	$6.50
5	5D	3/8-3/16	---	$5.17
6	6D	3/8-1/4	$10.60	$3.95
7	7D	3/8-5/16	$8.50	$7.50
8	8D	1/2-1/8	---	$6.75
9	9D	1/2-3/16	---	$11.50
10	10D	1/2-1/4	$14.75	$6.50
11	11D	1/2-5/16	$15.75	$11.50
12	12D	1/2-3/8	$15.65	$5.75

ALUMINUM MANIFOLD FITTINGS

ORDERING INFORMATION

Basic part number on all fittings is 04-00XXX, complete the part number by filling in the last 3 digits after selecting the fitting you need according to the details below. Example: 04-00102.

First Code Number - Determines the style of the fitting.

- -1: One port in the end with two ports out, 90° cross drilled with one port per side. 3 ports total. Two Mounting Holes.
- -2: One port in the end with four ports out, 90° cross drilled with two ports per side. 5 ports total. Two Mounting Holes.
- -3: One port in the end with six ports out, 90° cross drilled with three ports per side. 7 ports total. Four Mounting Holes.
- -4: One port in the end with eight ports out, 90° cross drilled with four ports per side. 9 ports total. Four Mounting Holes.
- -5: One port in the end with four ports out, 90° drilling with four ports on one side only. 5 ports total. Two Mounting Holes.

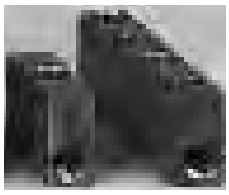
Second Code Number - Determines the style of porting.

- -0: All the ports are the same.
- -1: Inlet port is one size larger than outlet ports.
- -2: Inlet port is two sizes larger than outlet ports.

Third Code Number - Determines the inlet port size.

- -2: 1/8-27 taper pipe thread (NPT)
- -4: 1/4-18 taper pipe thread (NPT)
- -6: 3/8-18 taper pipe thread (NPT)
- -8: 1/2-14 taper pipe thread (NPT)

In the example above - 04-00102, this would be a 1/8 NPT inlet with two outlets of the same size.
Ex.-04-00326, this would have a 3/8 NPT inlet w/six 1/8 NPT outlets.



Our aluminum manifold fittings are a bolt-on design with taper pipe threads. These fittings are designed to provide a convenient means of plumbing multiple hoses from and/or to one source with the fitting being bolted to a supporting structure. This design will eliminate Adel clamps at the juncture of the hoses and eliminate additional tee type fittings when more than two hoses are to be connected to one source. Applications include brake reservoir lines, static system, suction systems, fuel systems, air line pigs, smoke systems, and more. Not for use on oxygen systems or pressures over 150 psi.

Part No.	Price
04-00102	$9.75
04-00104	$12.95
04-00106	$13.95
04-00108	$17.60
04-00114	$10.40
04-00116	$13.20
04-00118	$15.60
04-00126	$11.90
04-00128	$11.88
04-00202	$12.90
04-00204	$17.50
04-00206	$21.85
04-00208	$28.75

Part No.	Price
04-00214	$14.50
04-21600	$19.40
04-21800	$24.60
04-00226	$16.90
04-00228	$17.17
04-00302	$17.65
04-00304	$23.40
04-00306	$29.90
04-00308	$28.64
04-00314	$18.70
04-00316	$25.85
04-00318	$25.56
04-00326	$19.29

Part No.	Price
04-00328	$29.85
04-00402	$21.80
04-00404	$29.85
04-00414	$23.50
04-00416	$32.50
04-00426	$23.33
04-00428	$27.99
04-00502	$14.90
04-00504	$19.65
04-00514	$17.30
04-00516	$22.90
04-00526	$19.85
04-00528	$26.90

AIRCRAFT SPRUCE WEST
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Prices Subject to Change Without Notice

PHENIX FEMALE TO FLARE EXPANDERS AND REDUCERS (CLEAR)

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	Female / Male	Part No.	Price
C46-5	-4 / -6	04-02102	$6.50
C68-5	-6 / -8	04-02101	$8.50
C810-5	-8 / 10	04-02103	$9.50
C1012-5	-10 / -12	04-02104	$14.95
C1216-5	-12 / -16	04-02105	$16.50

PHENIX FEMALE TO FLARE EXPANDERS AND REDUCERS - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	Female / Male	Part No.	Price
C43-4	-4 / -3	04-02094	$6.55
C64-4	-6 / -4	04-02095	$6.50
C86-4	-8 / -6	04-02096	$7.50
C106-4	-10 / -6	04-02097	$9.50
C108-4	-10 / -8	04-02098	$9.50
C1210-4	-12 / -10	04-02099	$15.70

PHENIX SWIVEL COUPLER STRAIGHT - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	Part No.	Price
C6-4	-6	04-02145	$7.35
C8-4	-8	04-02146	$7.85
C10-4	-10	04-02147	$9.50
C12-4	-12	04-02148	$12.50

PHENIX STRAIGHT SWIVEL FEMALE TO MALE NPT - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	NPT	Part No.	Price
C1451-4	-4	1/8"	04-02139	$7.90
C1651-4	-6	1/4"	04-02140	$9.50
C1652-4	-6	3/8"	04-02141	$9.97
C1851-4	-8	3/8"	04-02142	$9.50
C1852-4	-8	1/2"	04-02143	$11.50
C11051-4	-10	1/2"	04-02144	$12.95

PHENIX 90 DEGREE SWIVEL FEMALE TO MALE - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	Female AN	Male AN	Part No.	Price
C0647-4	-6	-6	04-02113	$13.65
C0847-4	-8	-8	04-02114	$19.50

PHENIX 90 DEGREE SWIVEL COUPLER - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	AN	Part No.	Price
C690-4	-6	-6	04-02115	$11.50
C1090-4	-10	-10	04-02117	$16.50
C1290-4	-12	-12	04-02118	$17.50

PHENIX 45 DEGREE SWIVEL COUPLER - BLUE

Light weight aluminum adapters by Phenix Industries are designed for leak-proof sealing with any manufacturers hose ends. Made in USA.

Phenix Part No.	AN	AN	Part No.	Price
C645-4	-6	-6	04-02135	$11.50
C845-4	-8	-8	04-02136	$13.65
C1045-4	-10	-10	04-02137	$15.50
C1245-4	-12	-12	04-02138	$16.60

PHENIX STRAIGHT AND 90 DEGREE PUSH-LOK SWIVEL RED/BLUE

Phenix Compression Swivel Hose Ends are constructed from lightweight 6061 aluminum and designed for smooth flow, easy assembly, and longer life. All elbow ends are built from one-piece billet tube construction, avoiding leakable braze joints. Viton O-Ring seal allows 360 degree rotation. 37 degree AN flare assures leak proof sealing surface eliminating the need for taping. Compatible with all AN adapter fittings. Made in the U.S.A. Compatible Hose Type: Push-On Hose.

STRAIGHT

Phenix Part No.	AN	Part No.	Price
J2400-2	-4	04-02120	$4.35
J2600-2	-6	04-02121	$4.35
J2800-2	-8	04-02122	$5.35
J21000-2	-10	04-02123	$7.50
J21200-2	-12	04-02124	$8.55

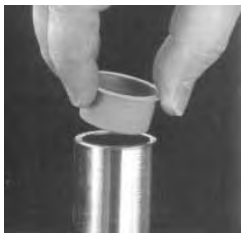
90 DEGREE

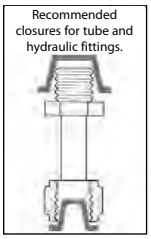
Phenix Part No.	AN	Part No.	Price
J2490-2	-4	04-02130	$14.75
J2690-2	-6	04-02131	$14.50
J2890-2	-8	04-02132	$17.50
J21090-2	-10	04-02133	$33.50
J21290-2	-12	04-02134	$19.80

CAPLUGS

HA

T SERIES CAPLUGS (NON-THREADED)



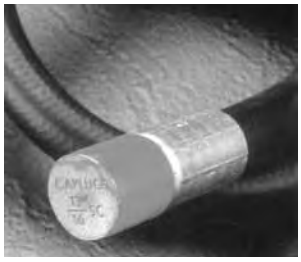


Tapered Caplugs can be used as either caps or plugs. Because they are tapered in design and made from highly pliable (or flexible) Polyethylene, they can be applied to fit snugly and are readily removable, whether used for capping or plugging. Especially recommended for use on MIL Std. and SAE-type tube and hydraulic fittings and for threaded external and internal NPT fittings.

Part No.	Dash No.	Tubing O.D.	Thread	Caplugs As Plugs	Caplugs As Caps	Price Each
04-00045	-2	1/8	5/16-24	1	2	$0.24
04-00046	-3	3/16	3/8-24	2	3-X	$0.18
04-00047	-4	1/4	7/16-20	3	4-X	$0.17
04-00048	-5	5/16	1/2-20	4	5	$0.21
04-00049	-6	3/8	9/16-18	5	6-X	$0.14
04-00050	-8	1/2	3/4-16	8	9-X	$0.18
04-00051	-10	5/8	7/8-14	10	11-X	$0.20
04-00052	-12	3/4	1 1/16-12	12-X	13-X	$0.22
04-00053	-16	1	1 5/16-12	14-X	15-X	$0.37

Less 20% Discount on 50 Caplugs (Same P/N)

SC SERIES CAPLUGS (NON-THREADED)



Series SC sleeve caps are designed to fit outside diameters of tubing sizes listed with a snug friction grip. Available in 57 different O.D.'s and lengths. Ideal for capping and protecting both threaded and non-threaded tubing or rod ends. The also make excellent masks, for painting, plating or grit-blasting operations.

Less 20% Discount on 50 Caplugs (Same P/N)

Part No.	Caplug No.	A To fit tube O.D. Inches	A To fit tube O.D. mm	B Inside Length Inches	B Inside Length mm	Price Ea.
04-00054	SC-1/8	1/8	3.18	.59	14.99	$0.15
04-00055	SC-3/16-5	3/16	4.76	.35	8.89	$0.11
04-00056	SC-3/16-16	3/16	4.76	1.00	25.40	$0.11
04-00057	SC-1/4-4	1/4	6.35	.22	5.59	$0.18
04-00058	SC-1/4-14	1/4	6.35	.88	22.35	$0.19
04-00059	SC-5/16	5/16	7.94	.88	22.35	$0.16
04-00060	SC-3/8	3/8	9.53	.88	22.35	$0.20
04-00061	SC-7/16-14	7/16	11.11	.88	22.35	$0.23
04-00062	SC-1/2-8	1/2	12.70	.50	12.70	$0.20
04-00063	SC-1/2-14	1/2	12.70	.88	22.35	$0.19
04-00064	SC-9/16-9	9/16	14.29	.56	14.22	$0.14
04-00065	SC-9/16-14	9/16	14.29	.88	22.35	$0.28
04-00066	SC-5/8	5/8	15.88	.88	22.35	$0.25
04-00067	SC-3/4	3/4	19.05	.88	22.35	$0.30
04-00068	SC-7/8	7/8	22.23	.88	22.35	$0.30
04-00069	SC-1	1	25.40	1.00	25.40	$0.36

CD SERIES CAPLUGS (THREADED)

Knurled for ease of application, Series CD caps seal flared JIC fittings exceptionally well against dirt and moisture, as well as for masking during dipping, painting and plating.

Part No.	Caplug No.	To Cap Normal Tubing Size Inches	To fit Thread	Dim A In	Dim A mm	No. of Knurls	Price Each
04-00032	CD-3	3/16	3/8-24	.47	11.94	4	$0.19
04-00033	CD-4	1/4	7/16-20	.47	11.94	4	$0.19
04-00034	CD-5	5/16	1/2-20	.47	11.94	6	$0.20
04-00035	CD-6	3/8	9/16-18	.53	13.46	6	$0.22
04-00036	CD-6A	3/8	5/8-18	.53	13.46	6	$0.27
04-00037	CD-8	1/2	3/4-16	.57	14.48	6	$0.29
04-00038	CD-10	5/8	7/8-14	.68	17.27	6	$0.34
04-00039	CD-11	-	1-14	.78	19.81	8	$0.34
04-00040	CD-12	3/4	1 1/16-12	.75	19.05	8	$0.36

Less 20% Discount on 50 Caplugs (Same P/N)

PD SERIES CAPLUGS (THREADED)

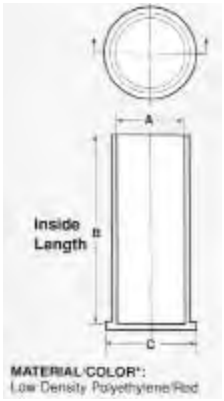
Series PD Plugs, designed for use on flared JIC fittings, air knurled for ease of application. They will seal low pressure requirements with light finger tightening. PD plugs can be used to seal 37° flare fittings without gaskets.

Part No.	Caplug No.	To Plug Nominal Tubing Size	To fit Thread	Dimensions B in	Dimensions B mm	Dimensions C in	Dimensions C mm	Dimensions D in	Dimensions D mm	Price Each
04-00023	PD-30	3/16	3/8-24	.46	11.68	.50	12.70	.18	4.57	$0.23
04-00024	PD-40	1/4	7/16-20	.53	13.46	.62	15.75	.19	4.83	$0.25
04-00025	PD-50	5/16	1/2-20	.53	13.46	.68	17.27	.25	6.35	$0.27
04-00026	PD-60	3/8	9/16-18	.50	12.70	.81	20.57	.25	6.35	$0.30
04-00027	PD-65	3/8	5/8-18	.59	14.99	.81	20.57	.25	6.35	$0.29
04-00028	PD-80	1/2	3/4-16	.75	19.05	.94	23.88	.25	6.35	$0.30
04-00029	PD-100	5/8	7/8-14	.87	22.10	1.06	26.93	.25	6.35	$0.35
04-00030	PD-121	3/4	1-1/16-14	1.12	28.45	1.31	33.28	.25	6.35	$0.38
04-00031	PD-160	1	1-5/16-12	.93	23.62	1.50	38.10	.25	6.35	$0.49

Less 20% Discount on 50 Caplugs (Same P/N)

CAPLUGS

RCL SERIES CAPLUGS (UNTHREADED)



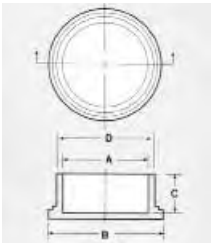
Series RCL caps are ideal for protecting threaded or smooth cylindrical surfaces. Originally designed for use on hydraulic double threaded bulkhead fittings, they are especially suitable where greater longitudinal protection is required.

Less 20% Discount on 50 Caplugs (Same P/N)

Part No.	Caplug No. (formerly) (series B-203)	A	B		C		Price Each
		To Cap Thread Size In.	Inside Length				
			In	mm	in	mm	
04-00079	RCL-2	5/16	1.24	31.50	.46	11.68	$0.15
04-00080	RCL-3	3/8	1.24	31.50	.52	13.21	$0.29
04-00009	RCL-4	7/16	1.33	33.78	.58	14.73	$0.16
04-00011	RCL-5	1/2	1.33	33.78	.64	16.26	$0.28
04-00012	RCL-6	9/16	1.41	35.82	.70	17.78	$0.31
04-00013	RCL-8	3/4	1.56	39.63	.88	22.35	$0.26
04-00014	RCL-9	M-20 (.787)	1.56	39.63	.91	23.11	$0.79
04-00015	RCL-10	7/8	1.70	43.18	1.01	25.66	$0.35
04-00016	RCL-12	11/16	1.89	48.01	1.19	30.23	$0.50

HA

EC SERIES CAPLUGS (UNTHREADED)



Static dissipative EC Series Caplugs provide positive ESD and physical protection for all common sizes of threaded electrical and electronic connectors. Also suitable for protecting non-threaded bayonet-type connectors.

Less 20% Discount on 50 Caplugs (Same P/N)

Part No.	Caplug No.	A-Caps Nominal Thread Size In.	Dimensions				Price Each
			B		C		
			In	mm	in	mm	
04-00070	EC-4	1/4	.48	12.19	.50	12.70	$0.19
04-00071	EC-5	5/16	.55	13.97	.56	14.22	$0.19
04-00072	EC-6	3/8	.62	15.75	.50	12.70	$0.14
04-00073	EC-8	1/2	.74	18.79	.50	12.70	$0.22
04-00074	EC-9	9/16	.78	19.81	.44	11.18	$0.23
04-00075	EC-10	5/8	.84	21.34	.50	12.70	$0.21
04-00076	EC-12	3/4	.97	24.63	.50	12.70	$0.24
04-00077	EC-14	7/8	1.12	28.44	.50	12.70	$0.28
04-00078	EC-16	1	1.22	30.98	.50	12.70	$0.26

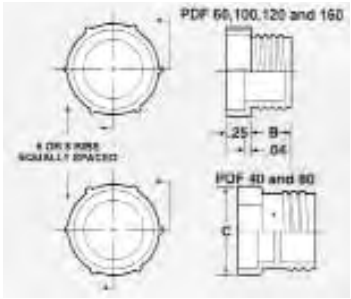
P SERIES CAPLUGS (THREADED)

Series P pipe pluge are square head. They are molded in high density polyethylene and are ideal for keeping moisture, dirt and other contaminants from NPT-threaded ports.

Part No.	Caplug No.	To Fit	Dimensions						Price Each
			A		B		C		
			in	mm	in	mm	in	mm	
04-00041	P-18	1/8" NPT	.44	11.18	.28	7.11	-	-	$0.21
04-00042	P-28	1/4" NPT	.50	12.70	.37	9.40	-	-	$0.32
04-00043	P-38	3/8" NPT	.56	14.22	.44	11.18	-	-	$0.48
04-00044	P-48	1/2" NPT	.59	14.99	.56	14.22	-	-	$0.48

Less 20% Discount on 50 Caplugs (Same P/N)

PDF SERIES CAPLUGS (THREADED)

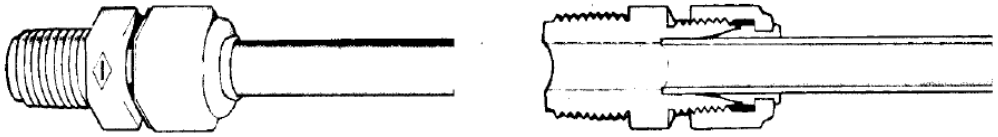


Series PDF plugs are designed for easy mechanical or hand installation on flat-faced O-ring fittings.

Part No.	Caplug No.	To Plug Nominal Tubing Size	To Fit Thread Size	Dimensions				Price Each
				B		C		
				in	mm	in	mm	
04-00018	PDF-60	3/8"	11/16-16	.44	11.18	.87	22.10	$0.41
04-00019	PDF-80	1/2"	13/16-16	.50	12.70	.94	23.88	$0.48
04-00020	PDF-100	5/8"	1-14	.59	14.99	1.16	29.47	$0.43
04-00021	PDF-120	3/4"	13/16-12	.63	16.00	1.33	33.78	$0.59
04-00022	PDF-160	1"	17/16-12	.75	19.05	1.63	41.40	$2.45

Less 20% Discount on 50 Caplugs (Same P/N)

NYLO-SEAL FITTINGS

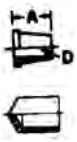


Nylo-Seal tube fittings are exceptionally strong. The bodies, made of nylon, are stronger than machined fittings of similar composition. They are furnished complete with nut/sleeve assemblies, made of acetal copolymer. Since the sleeve snaps into and is retained by the nut there is no fumbling for a loose sleeve. Just insert tube into the fitting and tighten the nut 2 to 2-1/2 full turns.

Note: The most frequently used combination of tube and pipe sizes are 1/4" Tube x 1/8" Pipe and 3/8" Tube x1/4" Pipe.

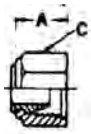
HA

259-P CAP, 259-N INSERT (NYLON)



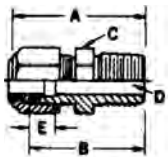
	Tube O.D.	A	D
259-N	1/4	3/8	1/8
259-P	3/8	7/16	13/64

261-N NUT AND SLEEVE ASSEMBLY



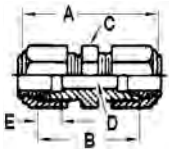
Tube O.D.	Thd.	A	C
1/4	7/16-20	15/32	9/16
3/8	5/8-20	37/64	3/4

268-N MALE CONNECTOR



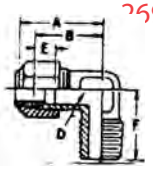
Tube O.D.	Pipe Thd.	A	B	C	D	E
1/4	1/8	1-13/64	1	5/8	15/64	15/32
1/4	1/4	1-25/64	1-3/16	5/8	15/64	11/16
3/8	1/4	1-17/32	1-21/64	13/16	5/16	19/32
3/8	3/8	1-19/32	1-25/64	13/16	11/32	19/32

262-N UNION



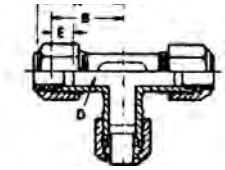
Tube O.D.	A	B	C	D	E
1/4	1-25/64	63/64	5/8	7/32	15/32
3/8	1-21/32	1-1/4	13/16	23/64	19/32

269-N MALE ELBOW



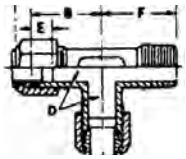
Tube O.D.	Pipe Thd.	A	B	D	E	F
1/4	1/8	1-1/64	13/16	7/32	3/8	27/32
1/4	1/4	1-1/64	13/16	13/32	3/8	1-1/32
3/8	1/4	1-9/64	15/16	5/16	7/16	1-1/32
3/8	3/8	1-9/64	15/16	11/32	7/16	1-3/32

264-N UNION TEE



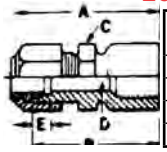
Tube O.D.	A	B	D	E
1/4	1-9/64	47/64	7/32	15/32
3/8	1-11/64	31/31	11/32	19/32

271-N MALE RUN TEE



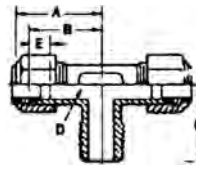
Tube O.D.	Pipe Thd.	A	B	D	E	F
1/4	1/8	59/64	21/32	7/32	15/32	3/4
1/4	1/4	59/64	13/32	7/32	15/32	29/32
3/8	1/4	1-5/32	61/64	5/16	19/32	1-1/16
3/8	3/8	1-3/16	61/64	23/64	19/32	1-7/64

266-N FEMALE CONNECTOR



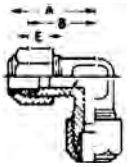
Tube O.D.	Pipe Thd.	A	B	C	D	E
1/4	1/8	1-9/64	15/16	9/16	7/32	9/16
1/4	1/4	1-5/16	1-7/64	11/16	7/32	47/64
3/8	1/4	1-27/64	1-7/32	11/16	11/32	3/4
3/8	3/8	1-27/64	1-7/32	13/16	11/32	3/4

272-N MALE BRANCH TEE



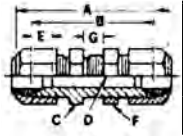
Tube O.D.	Pipe Thd.	A	B	D	E	F
1/4	1/8	15/16	47/64	7/32	15/32	3/4
1/4	1/4	15/16	47/64	7/32	15/32	13/16
3/8	1/4	1-11/64	31/32	5/16	19/32	1-1/16
3/8	3/8	1-11/64	31/32	23/64	19/32	1-7/64

265-N ELBOW UNION



Tube O.D.	A	B	D	E
1/4	1-1/64	13/16	7/32	3/8
3/8	1-5/32	15/16	11/32	7/16

282-N BULKHEAD UNION



Tube O.D.	Pipe Thd.	A	B	C	D	E	F	G
1/4	7/16-20	1-57/64	1-31/64	5/8	7/32	15/32	5/8	5/16
3/8	5/8-20	2-1/4	1-53/64	13/16	11/32	19/32	7/8	3/8

*Use 259-N inserts with all Poly-Flo tubing connections. Not needed with Nylo-Seal tubing.

Part No.	Tube Size In.	Price Each	Part No.	Size (In) Tube Pipe	Price Each	Part No.	Size (In) Tube Pipe	Price Each
259-N 04	1/4	$0.79	266-N 04 x 02	1/4 x 1/8	$6.50	271-N 04 x 02	1/4 x 1/8	$3.25
259-N 06	3/8	$0.96	266-N 04 x 04	1/4 x 1/4	$5.50	271-N 04 x 04	1/4 x 1/4	$4.15
259-P 04	1/4	$0.68	266-N 06 x 04	3/8 x 1/4	$6.75	271-N 06 x 04	3/8 x 1/4	$8.75
259-P 06	3/8	$1.06	266-N 06 x 06	3/8 x 3/8	$6.50	271-N 06 x 06	3/8 x 3/8	$5.75
261-N 04	1/4	$0.79	268-N 04 x 02	1/4 x 1/8	$2.35	272-N 04 x 02	1/4 x 1/8	$3.20
261-N 06	3/8	$1.15	268-N 04 x 04	1/4 x 1/4	$2.15	272-N 04 x 04	1/4 x 1/4	$4.35
262-N 04	1/4	$2.46	268-N 06 x 04	3/8 x 1/4	$2.48	272-N 06 x 04	3/8 x 1/4	$5.50
262-N 06	3/8	$3.45	268-N 06 x 06	3/8 x 3/8	$2.40	272-N 06 x 06	3/8 x 3/8	$5.85
264-N 04	1/4	$3.95	269-N 04 x 02	1/4 x 1/8	$2.25	282-N 04	1/4	$6.50
264-N 06	3/8	$5.85	269-N 04 x 04	1/4 x 1/4	$2.35	282-N 06	3/8	$6.98
265-N 04	1/4	$2.70	269-N 06 x 04	3/8 x 1/4	$3.20	----	----	----
265-N 06	3/8	$4.75	269-N 06 x 06	3/8 x 3/8	$3.20	----	----	----

Less 10% on 50 pieces per size, Less 20% on 100 pieces per size

HOSE FITTINGS – PIPE FITTINGS

HOSE & TUBING FITTINGS

Adapter Tube to Pipe | Elbow Tube to Pipe | Tee, Tube to Pipe (Pipe on Side) | Tee, Tube on Three Sides | Connector Tube to Tube

Hose and tubing Insert Fittings are available in high density polyethylene or Nylon. Use polyethylene fittings with Tygon, nylon or soft rubber tubing to assemble low pressure instrument lines such as airspeed pitot and static lines. Use Nylon fittings in gravity-feed fuel lines and engine breather lines.

Fitting Type	Size	Polyethylene Part No.	Polyethylene Price Each	Nylon Part No.	Nylon Price Each
ADAPTER Tube to pipe	3/16Tx1/8P	0700-150	$0.46	0701-150	$0.99
	1/4Tx1/8P	0700-153	$0.73	0701-153	$0.84
	5/16Tx1/8P	0700-156	$0.77	0701T-15	$0.92
	3/8Tx1/8P	0700-158	$0.71	0701-158	$0.80
	1/4Tx1/4P	0700-110	$0.80	0701-110	$0.78
	3/8Tx1/4P	0700-162	$0.76	0701-162	$0.64
ELBOW Tube to Pipe	1/4Tx1/8P	0710-153	$0.98	0711-153	$1.25
	3/8Tx1/8P	0710-158	$0.97	0711-158	$1.07
	1/4Tx1/4P	0710-110	$1.21	0711-110	$1.09
	3/8Tx1/4P	0710-162	$0.78	0711-162	$1.18
Tube to Tube	1/4Tx1/4T	0710-015	$0.75	0711-015	$0.98
	3/8Tx3/8T	0710-020	$1.26	0711-020	$1.21
REDUCING CONNECTOR	1/4Px1/8P	0725-153	$0.72	0726-153	$0.98
	3/8Px1/8P	0725-161	$0.87	0726-161	$0.79
	3/8Px1/4P	0725-162	$1.00	0726-162	$0.98
TEE Tube to pipe	1/4Tx1/4Tx1/8P	0715-153	$1.15	0716-153	$1.20
	3/8Tx3/8Tx1/4P	0715-162	$1.18	0716-162	$1.10
	1/4Tx1/4Tx1/4P	0715-110	$1.08	0716-110	$1.17
TEE All Tube	3/16Tx3/16Tx3/16T	0715-011	$0.77	0716-011	$0.89
	1/4Tx1/4Tx1/4T	0715-015	$1.26	0716-015	$1.15
	3/8Tx3/8Tx3/8T	0715-020	$1.13	0716-020	$1.13
CONNECTOR Tube to Tube	1/4Tx1/4T	0705-015	$0.64	0706-015	$0.76
	3/8Tx3/8T	0705-020	$0.83	0706-020	$0.76

Fitting Type	Size	Part No.	$1.12
TEE Tube to pipe HDPE Natural	3/8x3/8x1/4	0782-162	$1.12

TEE CONNECTOR

For pressure switches with 1/8" male pipe threads. For 1/4" O.D oil pressure lines..P/N 10-04846 ..... $9.85

HERBIE CLIP HOSE CLAMPS

The Herbie Clip hose clamp is the original double toothed (double row of teeth) ratchet clamp. This makes the Herbie clip twice as strong (up to 200psi depending on hose work and spigot) as similar hose clamps with a single row of teeth.

The Herbie Clip hose clamp combines its high strength with other key features such as: non-corrosive and resistant to many chemicals, simple to install can be fitted before or after the hose is in place, minimum leak path, lightweight, easy to use (no sharp edges to cut the operators), fully compliant with ROHS, UL listed (nylon 6.6.)

Clip Size	Min Dia. (in.)	Max Dia. (in.)	Part No.	Price
A	.22	.26	05-02698	$0.21
AA	.26	.31	05-02699	$0.24
B	.31	.36	05-02701	$0.25
C	.40	.47	05-02702	$0.26
CC	.44	.51	05-02695	$0.26
D	.47	.54	05-02703	$0.25
E	.52	.59	05-02704	$0.31
F	.59	.67	05-02705	$0.32
G	.67	.75	05-02706	$0.32
H	.71	.81	05-02696	$0.32
J	.80	.91	05-02707	$0.31
K	.87	.98	05-02708	$0.38

HERBIE CLIP HOSE CLAMP TOOLS

INSTALLATION TOOL

Recommended for medium volume use.
Fits sizes A to K.....P/N 05-02709 ..... $169.50

REMOVAL TOOL

It is easy to install and remove using a choice of manual.

P/N 05-02710.....$17.50

BRASS POLY-FLO FITTINGS

Poly-Flo Flareless tube fittings consist of a brass body, nut and sleeves. Use with PolyFlo, PVC or Nylaflow pressure tubing. The Poly-Flo fittings have the same configuration as Nylo-Seal fittings of the same basic part number.

261UB - NUT WITH SLEEVE

Tube O.D.	Thread Size	Part Number	Price Each
1/8	5/16-24	261UB-02	$0.99
3/16	3/8-24	261UB-03	$0.85
1/4	3/8-24	261UB-04	$0.95

262P - UNION

Tube O.D.	Thread Size	Part Number	Price Each
1/8	--	262P -02	$5.35
3/16	--	262P-03	$4.50
1/4	--	262P-04	$3.95

264P - UNION TEE

Tube O.D.	Thread Size	Part Number	Price Each
3/16	--	264P-03	$7.93
1/4	--	264P-04	$5.60

266P - FEMALE CONNECTOR

Tube O.D.	Pipe Thread	Part Number	Price Each
1/8	1/8	266P-02x02	$3.65
3/16	1/8	266P-03x02	$3.60

268P - MALE CONNECTOR

Tube O.D.	Pipe Thread	Part Number	Price Each
1/8	1/8	268P-02x02	$1.98
3/16	1/8	268P-03x02	$3.95
1/4	1/8	268P-04x02	$1.96

269P - MALE ELBOW

Tube O.D.	Pipe Thread	Part Number	Price Each
3/16	1/8	269P-03x02	$4.70
1/4	1/8	269P-04x02	$2.50

270P - FEMALE ELBOW

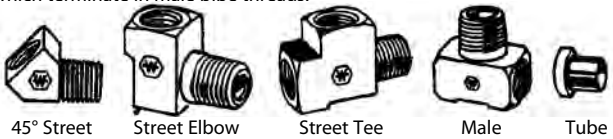
Tube O.D.	Pipe Thread	Part Number	Price Each
3/16	1/8	270P-03x02	$4.80

272P - MALE BRANCH TEE

Tube O.D.	Pipe Thread	Part Number	Price Each
3/16	1/8	272P-03x02	$6.45

WEATHERHEAD BRASS PIPE FITTINGS

These brass elbows and tees provide flexibility in the routing of lines which terminate in male pipe threads.



45° Street Elbow | Street Elbow | Street Tee | Male Branch Tee | Tube Insert

45° STREET ELBOW

Part Number	Pipe Thread	Price Each
3350x2	1/8	$2.68
3350x4	1/4	$3.40
3350x6	3/8	$4.35

90° STREET ELBOW

Part Number	Pipe Thread	Price Each
3400x2	1/8	$1.95
3400x4	1/4	$3.35
3400x6	3/8	$4.80

MALE BRANCH TEE

Part Number	Pipe Thread	Price Each
3600x2	1/8	$5.35
3600x4	1/4	$6.50
3600x6	3/8	$10.50

STREET TEE

Part Number	Pipe Thread	Price Each
3750x2	1/8	$4.35
3750x4	1/4	$7.50
3750x6	3/8	$8.80

WEATHERHEAD BRASS FITTINGS

Part No.	Description	Size	Price Each
2030-4	Tube Insert*	1/8ODx3/32ID	$0.64
3220x4x2	Bushing	1/8FPx1/4MP	$0.97
6100x2	Nut	1/8T	$0.95
6200x2	Male Connector	1/8Txl/8P	$1.52
66x2	Fml Connector	1/8Txl/8P	$2.56

* Used for Long-EZ brake fittings.

WEATHERHEAD BARB-TITE REUSABLE HOSE ENDS

MALE PIPE

MALEPIPE RIGID - 90° ELBOW

Designed for use with hoses with maximum working pressure up to 250 PSI. Easy to assemble and disassemble.

Part No.	Description	Hose I.D.	Pipe Size	Cut-off Factor	Price Each
10006B-102	Straight Pipe	3/8"	1/8"	1-1/2	$9.50
10006B-104		3/8"	1/4"	1-1/2	$1.97
10008B-108	Straight Pipe	1/2"	1/2"	1.19	$4.75
10006B-106		3/8"	3/8"	1-11/16	$2.21
10006B-C02	90° Pipe	3/8"	1/8"	3/8	$8.90
10006B-C04		3/8"	1/4"	3/8	$9.50

BRASS TUBE FITTINGS

Description	Part No.	Price
Brass Tube Fitting 3/8 inch Pipe x 3/8 inch	04-00833	$3.85
Brass Tube Fitting 1/4 inch Pipe x 3/8 inch	04-00834	$2.54

MS21919 DG & WDG CLAMPS

Loop-type cushioned aluminum alloy clamp. Cushion (non-fuel resistant) is bonded to inner surface and edges of clamp. WDG clamps are cushion wedge type. Cushion assures tight fit and eliminates vibration, thus preventing line abrasion.

Tube Dia.	Dash No.	Price Each	Dash No.	Price Each	Tube Dia.	Dash No.	Price Each	Dash No.	Price Each
1/8	DG2	$0.43	WDG2	$0.46	1-5/16	DG21	$1.48	WDG21	$1.13
3/16	DG3	$0.38	WDG3	$0.36	1-3/8	DG22	$1.39	WDG22	$0.96
1/4	DG4	$0.25	WDG4	$0.38	1-7/16	DG23	$1.81	WDG23	$1.39
5/16	DG5	$0.29	WDG5	$0.38	1-1/2	DG24	$1.26	WDG24	$1.20
3/8	DG6	$0.29	WDG6	$0.36	1-9/16	DG25	$1.87	WDG25	$3.35
7/16	DG7	$0.58	WDG7	$0.44	1-5/8	DG26	$1.45	WDG26	$1.41
1/2	DG8	$0.36	WDG8	$0.38	1-3/4	DG28	$1.51	WDG28	$2.63
9/16	DG9	$0.37	WDG9	$0.49	1-7/8	DG30	$1.63		
5/8	DG10	$0.41	WDG10	$0.44	1-15/16	DG31	$2.42		
11/16	DG11	$0.74	WDG11	$0.77	2	DG32	$1.21		
3/4	DG12	$0.47	WDG12	$0.63	2-1/16	DG33	$1.63		
13/16	DG13	$1.26	WDG13	$0.68	2-1/8	DG34	$1.23		
7/8	DG14	$0.75	WDG14	$0.66	2-1/4	DG36	$1.67		
15/16	DG15	$0.99	WDG15	$0.79	2-3/8	DG38	$2.28		
1	DG16	$1.04	WDG16	$0.68	2-1/2	DG40	$1.44		
1-1/16	DG17	$1.15	WDG17	$1.29	2-5/8	DG42	$2.52		
1-1/8	DG18	$0.99	WDG18	$0.90	2-3/4	DG44	$1.89		
1-3/16	DG19	$1.33	WDG19	$1.11	2-7/8	DG46	$3.40		
1-1/4	DG20	$1.18	WDG20	$0.87	3	DG48	$1.69		
					3-1/8	DG50	$3.35		

MS21919-WH CLAMPS

Band Material: Low Carbon Steel
Cushion Material: Silicone - For elevated temperature usage in phosphate ester based fluid and other synthetic fluid contaminated areas. Unaffected by ozone. Not resistant to petroleum based fluids. Color is white.

Part No.	Tube Dia.	Price
MS21919-WH2	1/8"	$0.80
MS21919-WH3	3/16"	$0.86
MS21919-WH4	1/4"	$0.66
MS21919-WH5	5/16"	$0.68
MS21919-WH6	3/8"	$0.70
MS21919-WH7	7/16"	$0.72
MS21919-WH8	1/2"	$0.74
MS21919-WH9	9/16"	$0.88
MS21919-WH10	5/8"	$0.86
MS21919-WH11	11/16"	$0.86
MS21919-WH12	3/4"	$0.89
MS21919-WH13	13/16"	$0.96
MS21919-WH14	7/8"	$0.97
MS21919-WH15	15/16"	$0.96
MS21919-WH16	1"	$0.99
MS21919-WH18	1-1/8"	$1.01
MS21919-WH20	1-1/4"	$1.06

MS21919 WCH CLAMPS

Band Material: Corrosion Resistant Steel
Cushion Material: Silicone - For elevated temperature usage in phosphate ester based fluid and other synthetic fluid contaminated areas. Unaffected by ozone. Not resistant to petroleum based fluids. Color is white.

Part Number	Tube Dia.	Price
MS21919-WCH2	1/8"	$1.14
MS21919-WCH3	3/16"	$1.32
MS21919-WCH4	1/4"	$1.13
MS21919-WCH5	5/16"	$1.10
MS21919-WCH6	3/8"	$1.11
MS21919-WCH7	7/16"	$1.15
MS21919-WCH8	1/2"	$1.18
MS21919-WCH9	9/16"	$1.28
MS21919-WCH10	5/8"	$1.31
MS21919-WCH11	11/16"	$1.35
MS21919-WCH12	3/4"	$1.39
MS21919-WCH13	13/16"	$1.43
MS21919-WCH14	7/8"	$1.47
MS21919-WCH15	15/16"	$1.50
MS21919-WCH17	1 1/16"	$1.57
MS21919-WCH18	1 1/8"	$1.58
MS21919-WCH20	1 1/4"	$1.65
MS21919-WCH22	1 3/8"	$1.72

MS21919-WCJ CLAMPS

Band Material: Corrosion Resistant Steel
Cushion Material: Fluorosilicone - For elevated temperature usage in petroleum based fluid contaminated areas. Unaffected by ozone. Not resistant to phosphate ester based fluids. Color is solid blue.

Part No.	Tube Dia.	Price
MS21919-WCJ2	1/8"	$1.46
MS21919-WCJ3	3/16"	$1.57
MS21919-WCJ4	1/4"	$1.58
MS21919-WCJ5	5/16"	$1.70
MS21919-WCJ6	3/8"	$1.80
MS21919-WCJ7	7/16"	$1.90
MS21919-WCJ8	1/2"	$2.10
MS21919-WCJ9	9/16"	$2.42
MS21919-WCJ10	5/8"	$2.70
MS21919-WCJ12	3/4"	$2.90
MS21919-WCJ14	7/8"	$3.20
MS21919-WCJ16	1"	$3.38
MS21919-WCJ20	1-1/4"	$4.50

OETIKER SS MECHANICAL INTERLOCK CLAMPS

Oetiker's core skills are reflected in three tried-and-tested product groups. A wide range of clamps and rings for connections and mountings of all types. In-house-produced pincers for optimum installation of our assortment of clamps. And practical Quick Connectors for fast plug connections without tools. • Mechanical interlock: for pre-coated material Clamp ear: fast and simple installation, visible deformation provides evidence of proper closure • Dimple: increases clamping force, spring-effect compensates for changes in diameter due to thermal • Specially formed strip edges: reduced risk of damage to parts being clamped • Material: 155 Stainless Steel, Material no. 1.4301/UNS S30400

Description	Part No.	Price
Oetiker 256 Stainless Steel MI-Clamp 25.6mm (1") open position / 22.8mm pinched position	15-05730	$0.32
Oetiker 226 Stainless Steel MI-Clamp 22.6mm (7/8") open position / 19.8mm pinched position	15-05731	$0.30
Oetiker 105 Stainless Steel MI-Clamp 10.5mm open position / 8.9mm pinched position	15-08416	$0.25
Oetiker 133 Stainless Steel MI-Clamp 13.3mm open position / 11.4mm pinched position	15-08417	$0.26
Oetiker 145 Stainless Steel MI-Clamp 14.5mm open position / 12.6mm pinched position	15-08418	$0.26
Oetiker 170 Stainless Steel MI-Clamp 17.0mmopen position / 15.1mm pinched position	15-08419	$0.28
Oetiker 198 Stainless Steel MI-Clamp 19.8mm (3/4") open position / 17.0mm pinched position	15-08420	$0.29

OETIKER STEPLESS SCREW CLAMPS

Oetiker Stepless Screw Clamps feature a unique tongue-in-groove design to provide a perfect 360° seal. Their narrow band width of 9 mm is designed to fit grooved objects. They are ideal where specialty clamping needs have to be met and the application calls for a smooth inner surface such as on flexible duct sleeves. The tongue-in-groove design provides that "stepless" complete seal. Manufactured using 300 AISI series stainless steel.

P/N	Clamping O.D. Range Inches	Price Each	P/N	Clamping O.D. Range Inches	Price Each
028-9	13/16" - 1-1/8"	$4.35	090-9	3-5/16" - 3-1/2"	$4.55
031-9	15/16" - 1-1/4"	$4.35	095-9	3-1/2" - 3-3/4"	$6.85
032-9	1-1/16" - 1-1/4"	$4.45	100-9	3-11/16" - 3-15/16"	$3.95
036-9	1-1/4" - 1-7/16"	$4.70	105-9	3-15/16" - 4-1/8"	$4.55
040-9	1-3/8" - 1-9/16"	$4.35	110-9	4-1/8" - 4-5/16"	$4.55
045-9	1-9/16" - 1-3/4"	$4.45	115-9	4-5/16" - 4-1/2"	$5.80
050-9	1-3/4" - 2"	$4.35	120-9	4-1/2" - 4-11/16"	$3.60
055-9	1-15/16" - 2-1/8"	$4.35	125-9	4-11/16" - 4-15/16"	$3.65
060-9	2-1/8" - 2-3/8"	$4.85	130-9	4-7/8" - 5-1/8"	$3.65
065-9	2-5/16" - 2-9/16"	$4.35	135-9	5-1/16" - 5-5/16"	$4.55
070-9	2-9/16" - 2-3/4"	$4.40	140-9	5-1/2" - 5-11/16"	$5.75
075-9	2-3/4" - 3"	$5.45	145-9	5-11/16" - 5-7/8"	$5.35
080-9	2-15/16" - 3-1/8"	$6.50	150-9	5-7/8" - 6-1/16"	$3.45
085-9	3-1/8" - 3-5/16"	$4.50	160-9	6-1/16" - 6-1/4"	$3.95
			165-9	6-1/4" - 6-1/2"	$4.83

QS 100 HOSE CLAMPS

Tangential worm-screw type for use on fuel, oil, air and coolant lines. Worm drive provides uniform clamping pressure without distorting hose. The QS100 series has stainless steel band with cadmium-plated carbon steel thumb screw. To attach, just push housing to the desired position on the band, snugly around hose, & the threads of the worm screw will drop into the slots. Tighten thumb screw with finger pressure - no tools required.

QS100 Dash No.	Dia. Range (In.) Min.	Max.	Price Each	QS100 Dash No.	Dia. Range (In) Min.	Max.	Price Each
M6W	7/16	25/32	$1.82	M24W	1-1/16	2	$1.86
M8W	1/2	29/32	$1.83	M28W	1-1/16	2-1/4	$1.84
M10W	9/16	1-1/16	$1.84	M32W	1-9/16	2-1/2	$1.95
M12W	11/16	1-1/4	$1.84	M36W	1-13/16	2-3/4	$1.95
M16W	13/16	1-1/2	$2.00	M40W	2-1/16	3	$2.25

Less 15% in lots of 50. May be assorted.

STAINLESS STEEL CLAMPS FOR SILICONE VACUUM HOSE

Clamp for silicone hose will not cut into the hose like other clamps. 100 % S/S including wore gear.

I.D.	Part No.	Price
1/4"	05-04707	$1.30
3/8"	05-04708	$1.59
1/2" or 5/8"	05-04709	$1.65
3/4"	05-04711	$1.64

QS 200 HOSE CLAMPS

Aero-Seal stainless steel clamps are for industrial & aircraft applications. This tangential worm-screw type clamp is for use on fuel, oil, air & coolant lines. The worm drive provides uniform clamping pressure without distorting hose. Attach by pushing housing snugly around the hose to desired position on the band—the threads of the worm screw will drop into slots. Tighten slotted head with screwdriver.

QS200 Dash No.	Dia. Range (In.) Min.	Max.	Price Each	QS200 Dash No.	Dia. Range (In) Min.	Max.	Price Each
-06H	7/16	25/32	$1.39	-44H	2-5/16	3-1/4	$1.93
-08H	1/2	29/32	$1.38	-48H	2-9/16	3-1/2	$1.98
-10H	9/16	1-1/16	$1.45	-52H	2-13/16	3-3/4	$2.15
-12H	11/16	1-1/4	$1.43	-56H	3-1/16	4	$2.05
-16H	13/16	1-1/2	$1.40	-60H	3-5/16	4-1/4	$2.20
-20H	13/16	1-3/4	$1.42	-64H	3-9/16	4-1/2	$2.18
-24H	1-1/16	2	$1.47	-72H	4-1/8	5	$2.30
-28H	1-5/16	2-1/4	$1.48	-80H	4-5/8	5-1/2	$2.75
-32H	1-9/16	2-1/2	$1.49	-88H	5-1/8	6	$2.77
-36H	1-13/16	2-3/4	$1.56	-96H	5-5/8	6-1/2	$2.75
-40H	2-1/16	3	$1.88	---	---	---	---

Less 15% in lots of 50. May be assorted.

DOUBLE EAR CLAMPS

•Robust, durable one-piece design offers positive, tamper resistant seal •For air and fluid media lines •One-piece design offers quick and easy installation •Smooth edges prevent damage to hose.

1/4" ..... P/N 15-04628 ..... $0.44
5/16" ..... P/N 15-04870 ..... $0.42
3/8" ..... P/N 15-04816 ..... $0.46

EAR CLAMP PINCERS WITH SIDE JAWS TOOL

Side Jaw Pincer, Forged Steel, used to close ear clamps.
P/N 12-03358 ..... $49.75

STANDARD EAR CLAMP TOOL

Straight Jaw Pincer, Forged Steel, Normal Use of intallation or removal of 5mm,7mm,9mm ear clamps.
P/N 12-03297 ..... $39.75

BREEZE MINIATURE CLAMPS

The best clamp for small diameter hose and tubing. Stainless steel band and housing with plated carbon steel screw. Applies an even circumferential pressure with less torque.

7/32" to 5/8" ..... P/N 6504 ..... $0.94 Ea.
7/16" to 7/8" ..... P/N 6506 ..... $0.92 Ea.

BREEZE AERO-SEAL STAINLESS CLAMP KITS

Pack A : Contains 2 each QS200 -52H, -64H, -72H and -80H.
P/N 05-00942 ..... $18.00
Pack B : Contains 2 each QS200 -8H, -12H, -24H, -32H, -40H, & -64H.
P/N 05-01340 ..... $19.00

SNAPPER CLAMPS

A quick ratchet closure provides specific take-up, eliminating excessive tightening which may mutilate the hose.

3/8" for 1/4" fuel line
P/N 05-00940 ..... $0.22
1", for radiator hose
P/N 05-00941 ..... $0.37

SNAPPER CLAMP FOR 1/4" PRIMER LINE

For use with 7015 1/4 OD primer line. The latest in quick and easy clamping systems. Can be installed in seconds with ordinary pliers. Double ratchet design provides positive locking. Constructed of heavy duty white nylon.
P/N 15-05994 ..... $0.59

LOOM CLAMPS VINYL COATED

Vinyl Hose Clamps. Vinyl coated galvenized steel. Temp. Range (F)-30 to +180

Clamp I.D.	Part No.	Price	Clamp I.D.	Part No.	Price
1/4	15-04635	$0.54	5/8	15-04877	$0.69
3/16	15-04804	$0.53	7/16	15-04919	$0.49
3/8	15-04821	$0.53	1/2	15-06851	$0.60

AN742 PLAIN CLAMPS

Plain loop-type line support clamps, made of aluminum alloy meeting specification QQ-A-362, condition T. Heat-treated to a minimum tensile strength of 50,000 PSI.

Dash No.	For Tube O. D. (In.)	Price Each	Dash No.	For Tube O. D. (In.)	Price Each
-D3	3/16	$0.25	-D8	1/2	$0.39
-D4	1/4	$0.19	-D10	5/8	$0.36
-D5	5/16	$0.44	-D12	3/4	$0.49
-D6	3/8	$0.33	-D15	15/16	$0.99
-D7	7/16	$0.98	-D16	1	$1.13

Less 15% in lots of 50. May be assorted.

LINE CLAMPS

These line clamps are lightweight but tough enough for the most rugged applications. Feature single piece .030" thick aluminum construction. No more messy bundles. Each clamp is shaped to hold braided line, tubing, or wiring securely, without pinching. Secured w/ standard tie wraps, these claps keep movement and wear to a minimum. Can be adjusted to mount on any tubing from 3/4".

Size	P/N	Price	Size	P/N	Price
1/4"	05-00004	$0.69	5/8"	05-00007	$0.76
3/8"	05-00005	$0.81	3/4"	05-00008	$0.92
1/2"	05-00006	$0.87	1"	05-00009	$0.98

30 piece assortment – includes 5 of each clamp
P/N 05-02205 ..... $24.75

AP

NYLO-SEAL TUBING - POLY-FLO TUBING

AP

NYLO-SEAL NYLON TUBING

Made of Nylon-II and is far superior to other types of Nylon tubing. It does not depend on moisture for flexibility and does not become brittle. It has excellent resistance to flexural fatigue and can be used where there is vibration or tube movement. Self-extinguishing under A.S.T.M. Test D635-44. N Tubing is rated to 1000 lbs. and is excellent for instrument lines and other low pressure applications. Use NSR tubing (2500 lb. rating) for hydraulic brake lines after verifying it is appropriate tubing for your application.

N TUBING

Part No.	O.D. (In.)	Wall (In.)	Burst Pressure (PSI)	Min. Bend Radius	Wt. (Lb/Ft)	Price per Ft.
05-01009	1/8	.026	1000	3/8"	.004	$0.32
05-01010	3/16	.039	1000	5/8"	.008	$0.28
05-01011	1/4	.035	1000	7/8"	.015	$0.66
05-01012	3/8	.075	1000	1-1/2"	.032	$0.87

NSR TUBING

Part No.	O.D. (In.)	Wall (In.)	Burst Pressure (PSI)	Min. Bend Radius	Wt. (Lb/Ft)	Price per Ft.
05-01228	1/8	.026	2500	3/8"	.004	$0.44
05-01229	1/4	.050	2500	7/8"	.015	$0.77
05-01230	3/16	.039	2500	5/8	.008	$0.75
05-01231	3/8	.075	2500	1-1/2"	.032	$1.64

NYLAFLOW NYLON TUBING

Nylon Polypenco. pressure tubing is a super tough, low friction, high flexibility tubing that can be used for cable protectors or in short pieces, as small bushings and washers. Suitable for use in oil, air, vacuum, fuel and low pressure hydraulic lines. It resists abrasion and wears better than aluminum or steel tubing. Has an extremely smooth inner surface with a very low coefficient of friction. Used for brake lines, and also as a conduit for the rudder cables in the Rutan VariEze and Long-EZ. Rated 1000 psi. Use Poly-Flo fittings. Sold by the foot.

Type	OD	ID	PSI	Part No.	Price
Standard Wall	1/8	.096	1000	05-00105	$0.15
Standard Wall	3/16	.138	1000	05-00110	$0.26
Standard Wall	1/4	.190	1000	05-00115	$0.34
High Bursting Pressure	1/4	.150	2500	05-04349	$0.59
High Bursting Pressure	3/16	.111 (appx.)	2500	05-04355	$0.28

NEOPRENE HOSE

Neoprene tubing is used in instrument hookups and for battery drains. Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153. Not for use as fuel or oil lines.

I.D.	Wall	Part No.	Price/Ft
3/16"	1/16"	05-00200	$1.30
1/4"	1/16"	05-00300	$0.79
3/8"	1/16"	05-00400	$0.84

TYGON TUBING

Tygon tubing is flexible, tough, abrasion-resistant and non-aging. Ideal or hookup of airspeed pitot and static lines (not recommended for pressurized applications). Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153.

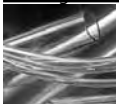
3/8" O.D. X 1/4" I.D..... P/N 05-00944 ..... $1.70 Ft

1/2" O.D. X 3/8" I.D..... P/N 05-00945 ..... $3.55 Ft

BING ALCOHOL RESISTANT FUEL LINE

This fuel line is blue in color and does not rot or deteriorate from the inside, clogging the carburetor or fuel system. It withstands 50 PSI and tensile strength is 8000 PSI. It is resistant to temperatures of -65° to 220°F without deterioration, features exceptional resistance to gasoline, oil, oxygen, and ozone, and has high elastic memory allowing use of Delrin or nylon barbed fittings in low pressure applications without the need for external clamps.

Description	ID	OD	Part No.	Price
Bing Alcohol Resistant Fuel Line	1/4	3/8	05-00500	$1.48
Bing Alcohol Resistant Fuel Line	1/8	1/4	05-00560	$1.25



NYLON TUBING

Nylon tubing is a popular choice for low pressure pneumatic applications because of its combination of flexibility and toughness. Nylon retains its performance integrity in elevated temperatures and generally, because of it's higher pressure and temperature characteristics, Nylon will have a greater flow passage than composite tubing made from other material with the same outside diameter.

Part No.	OD	ID	Price
0500-071	3/8	1/4	$0.54
0500-165	7/8	5/8	$2.06
0500-180	1	3/4	$0.74

BLACK MAX NYLON BRAKE LINE

This is the standard brake line used with Black Max Kits. It is nylon tubing with 1/8" OD x .078" ID and 1000PSI. Sold by the Foot. P/N 06-01006.....$0.59

POLY-FLO POLYETHYLENE TUBING

Poly-Flo tubing is a flexible, economical thermoplastic tubing fabricated from high molecular weight polyethylene for improved strength. The base resin has the greatest resistance to environmental stress cracking of all the regular polyethylenes. It meets A.S.T.M. D-1248-60T, Type 1, Class A, Grade 4 and Federal Specification LP-590, Type 2, Grade 7. Used for instrument or pneumatic lines. Use Nylo-Seal fittings (259-N inserts are required), nylon or polyethylene hose fittings such as 0710-153. Color - natural.

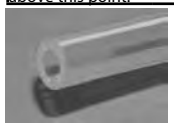
Part No.	Tube OD	Wall	Bend Radius	PSI at 75 F	PSI at 150 F	Price
44-P	1/4	0.040	1.250	190	75	$0.39
66-P	3/8	0.062	2.00	205	80	$0.38
88-P	1/2	0.062	2.500	150	60	$0.45

PRESSURE RATINGS

Operating Temperature	Poly-Flo (Polyethylene) Burst Pressure* PSI	Poly-Flo (Polyethylene) Max. Work Pressure* PSI	Nylo-Seal NSR** (Nylon 11) Burst Pressure* PSI	Nylo-Seal NSR** (Nylon 11) Max. Work Pressure* PSI
Room Temp.	250-600	75-160	2500	625
140°F.	125-300	37-80	1800	425
230°F.	UNUSABLE		1400	350
280°F.	UNUSABLE		UNUSABLE	

*Depends on tube size and wall thickness. Working pressure based on a safety factor of 4.

**Satisfactory for continuous operation up to 180° F. Becomes embrittled above this point.



SUPER HEAVY PULSE LINE

Super heavy wall clear polyurethane pulse line has an extra thick 3/32" wall that will not dampen crankcase pulse even on longer runs. Clear one piece urethane construction is not affected by fuel. Will not harden, crack, or become brittle with age. Can also be used as clear fuel line. Sold by the foot. Outside Diameter: 7/16". Inside Diameter: 1/4". Wall Thickness: 3/32" P/N 15-06094.....$3.70

CLEAR BLUE FUEL LINE

Polyether-based Polyurethane Tubing offers excellent resistance to chemicals, kinking, abrasion, hydrolysis, oxidation, and ozone exposure. Our Polyether-based Polyurethane tubing excels in maintaining exceptional flexibility, high-impact strength, and above average performance in cold temperature.

O.D.	Description	Part Number	Price
1/4"	Clear Blue Polyurethane Fuel Line	15-04632	$0.82
5/16"	Clear Blue Polyurethane Fuel Line	15-04874	$0.90
3/8"	Clear Blue Polyurethane Fuel Line	15-04818	$1.20

POLYURETHANE TUBING

Flexible polyurethane tubing has greater abrasion and tear resistance than any other type of plastic tubing. Won't age or oxidize. Excellent low temperature flexibility - avoids brittleness. Tensile strength 5900 PSI. Use AN hose fittings such as AN840 with Breeze Mini Clamps, nylon or polyethylene hose fittings such as 0710-153. Sold by the foot.

Mfg PN	OD	ID	Our PN	Price
0585-033	3/16	1/8	05-11169	$0.60
0585-071	3/8	1/4	0585-071	$1.73
0585-107	1/2	3/8	0585-107	$2.15
0585-165	7/8	5/8	0585-165	$6.75
0585-180	1	3/4	05-04246	$9.50

PARKER SUPER-FLEX FL FUEL LINE HOSE

Parker's fuel line hose includes a new thermoplastic barrier that helps protect our atmosphere from harmful hydrocarbons that escape through the carcass of ordinary fuel hose. This new hose surpasses all of CARB's stringent permeation requirements and is similar to SAE30R7 specifications. The Super-Flex FL hose also features an abrasion and weather resistant cover to help protect from external application abuse. Approved for biodiesel fuels that meet ASTM D 6751 requirements per UL guidelines for Biodiesel compatibility.4:1 Design factor

Tube:	NBR with a thermoplastic barrier
Cover:	Black Hypalon
Reinforcement:	Braided Polyester
Temperature Range:	-30°F to +257°F (-34°C to +125°C)

Part No.	ID (in.)	Reinf. Braids	OD(in.)	OD(mm)	Approx. wt. per 100 ft.	Min. Bend Rad.	Max Rec. WP	Price Per Ft.
05-03597	1/4	1	0.500	12.7	9.7	-	100	$4.75
05-07223	5/16	1	0.0562	14.3	11.3	-	100	$4.85
05-03598	3/8	1	0.625	15.9	1.30	-	100	$4.85

MIL-DTL 6000D OIL AND COOLANT HOSE

Inside and out, MIL-DTL 6000D is designed to handle the effects of oil, alcohol, coolant, and water. The tube is oil resistant with a black cover reinforced with high strength mildew resistant yarns. It withstands extreme temperature conditions from -40°F to +250°F. Meets or exceeds U.S. military specs. Lightweight, flexible and easy-to-handle, making it the perfect hose for hard-to-get-to spots in tight engine compartments. Not recommended for fuel lines.

Part No.	Hose Dimensions I.D. (In.)	Hose Dimensions O.D. (In.)	Burst Pressure (PSI)	Wt./ Ft. (Lb.)	Price Per Ft.
6000-4	1/4	5/8	1,000	.14	$4.95
6000-5	5/16	11/16	1,000	.16	$5.35
6000-6	3/8	3/4	1,000	.18	$5.75
6000-8	1/2	7/8	1,000	.22	$5.75
6000-10	5/8	1	1,000	.26	$6.75
6000-12	3/4	1-1/8	1,000	.27	$7.75
6000-14	7/8	1-1/4	1,000	.32	$8.50
6000-16	1	1-3/8	1,000	.38	$8.85

MIL-DTL 6000D HOSE AVAILABLE IN 10 FT MAXIMUM LENGTHS
MIL-H-6000 IS SUPERCEDED BY MIL-DTL-6000C
NOT RECOMMENDED FOR FUEL LINES

AEROQUIP 306 HOSE (MIL-H-5593)

A low-pressure hose for instrument air & vacuum lines. Consists of an inner tube of seamless synthetic rubber, reinforced with a single layer of cotton braid and a synthetic rubber cover. Used with slip-over hose fittings such as the AN840 series, or with Aeroquip 471 hose fittings when connecting to AN type fittings. Conforms to Specification MIL-H-5593. Specify hose I.D. when ordering.

Part No.	Hose Dimensions I.D. (In.)	Hose Dimensions O.D. (In.)	Burst Pressure (PSI)	Wt./ Ft. (Lb.)	Price Per Ft.
306-2	1/8	11/32	1,000	.056	$5.30
306-4	1/4	15/32	1,000	.072	$2.70
306-6	3/8	19/32	1,000	.096	$4.35
306-8	1/2	3/4	750	.144	$5.50
306-10	5/8	7/8	700	.168	$6.95

AEROQUIP 471 HOSE FITTING
USED WITH AEROQUIP 306 HOSE

471-2D

Aeroquip 471 hose fittings consist of an AN818 nut, an externally threaded 37° nipple and an internally threaded hose socket. All components are anodized aluminum. Fittings conform to MS27404.

Part No.	Tube Size (In.)*	AN818 Nut Thread Size	Price Ea.
471-2D	1/8"	5/6-24	$10.90
471-4D	1/4	7/16-20	$5.95
471-6D	3/8	9/16-18	$8.90
471-8D	1/2	3/4-16	$23.65

*Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension.

AEROQUIP ASSEMBLY MANDRELS FOR AIRCRAFT HOSE ASSEMBLIES

For use with Aeroquip 491 fittings. These tools are recommended to avoid damage to the sealing surface and to properly support the inner tube. Note: These are Aeroquip Factory Mandrels, which are highly recommended for best results.

Hose Size	#491 Fitting P/N	Mandrel P/N	Price	Hose Size	#491 Fitting P/N	Mandrel P/N	Price
3/16"	491-3	S-1051-3*	$107.95	1/2"	491-8	S-1051-8	$76.85
1/4"	491-4	S-1051-4*	$91.75	5/8"	491-10	S-1051-10	$104.75
5/16"	491-5	S-1051-5*	$116.75	3/4"	491-12	S-1051-12	$245.00
3/8"	491-6	S-1051-6*	$83.80				

*With Removable mandrel. Aeroquip Qty. Discount: 15% for 20 ft.; 20% for 50 ft.; 25% for 100 ft. or more (Per Item)

SILICONE HOSE

Sold by the foot (not for fuel or oil)

ID	OD	Wt/Ft/Llbs	Part No.	Price
1/4"	0.45"	.064	05-00659	$5.25
3/8"	0.67"	.144	05-00660	$6.65
1/2"	0.80"	.175	05-06925	$7.65
5/8"	0.95"	.220	05-00661	$7.95
3/4"	1.07"	.276	05-00671	$8.75

AEROQUIP 303 HOSE

This standard hose is used in med-pressure a/c hydraulic fuel, oil and coolant systems. An inner tube of seamless synthetic rubber is reinforced with a synthetic-impregnated single-wire braid over a single cotton braid and an outer cover of synthetic-impregnated oil-resistant cotton braid. Operating temperature -65° to 250°F. Conforms to MILH-8794 (supersedes MIL-H-5511A). Used with Aeroquip 491 hose fittings.

Hose P/N*	For Tubing Size	Hose I.D.	Max. Oper. Pressure** (PSI)	Wt. per Ft. (Lb.)	Price Per Ft.
303-3	3/16	1/8	3,000	.120	$5.50
303-4	1/4	3/16	3,000	.132	$5.70
303-5	5/16	1/4	3,000	.156	$7.10
303-6	3/8	5/16	2,000	.228	$7.30
303-8	1/2	13/32	2,000	.264	$7.50
303-10	5/8	1/2	1,750	.372	$8.50
303-12	3/4	5/8	1,500	.456	$9.50

* Corresponds to dash no. of Aeroquip 491 hose fittings.
** Safety factor of 4.

P/N 491-3

AEROQUIP 491 HOSE FITTINGS
USED WITH AEROQUIP 303 HOSE

Aeroquip 491 hose fittings consist of an AN818 style nut, an externally threaded 37° nipple and an internally threaded hose socket. Fittings of sizes 3 through 6 have nuts and nipples of cadmium plated steel. Nuts and nipples for size 8 and larger are of anodized aluminum. Fittings conform to MS24587.

Part No.	Tube Size (In.)*	AN818 Nut Thread Size**	Price Each
491-3	3/16	3/8-24	$11.95
491-4	1/4	7/16-20	$9.25
491-5	5/16	1/2-20	$13.00
491-6	3/8	9/16-18	$12.90
491-8D	1/2	3/4-16	$14.75
491-10D	5/8	1-1/16-12	$23.50
491-12D	3/4	1-1/16-12	$31.65

* Corresponds to dash no. of Aeroquip 816 hose fittings.
** Safety factor of 4.

HOSE AND FITTING ASSEMBLY MANDRELS

These hose and fitting assembly mandrels are designed for all straight fittings in Aeroquip 303 and Stratoflex 111 series. These hose types are common to most hydraulic, pneumatic, coolant, fuel and oil systems specified in MS33620 for aircraft applications. These quality tools are made from premium tool steel and bright nickel plated for long life. Available individually in sizes -3 thru -12 or in an assortment kit including all 7 sizes.

MILSPEC MANDRELS			
	Hose	Fitting	Price
05-01885	3/16	MS-3M	$18.50
05-01886	1/4	MS-4M	$14.75
05-01887	5/16	MS-5M	$14.75
05-01888	3/8	MS-6M	$19.90
05-04241	1/2	MS-8M	$21.75
05-04242	5/8	MS-10M	$30.85
05-04243	3/4	MS-12M	$38.50
05-04544	Includes 1 each of the MilSpec Mandrels		$158.95

AEROQUIP 666 HOSE

Aeroquip 666 medium pressure Teflon hose is widely used in aircraft applications handling fuel, oils, and other fluids. It is unaffected by all fuels, oils, alcohols, coolants, or solvents commonly use in aircraft. Construction of Aeroquip 666 hose is of spiral extruded Teflon resin for the inner tube with a reinforcement and outer cover of Type 300 Series stainless steel wire braid. The result is a lightweight hose able to withstand prolonged flexing and vibration under all service conditions. Aeroquip 666 hose is also use in hydraulic and pneumatic applications at pressures up to 1500 psi.

Hose Part No.	Hose I.D. (inches)	Hose O.D. (inches)	Max. Oper. Pressure	Wt. Per Ft. (lbs.)	Price Per Ft.
666-4	.188	.312	1500	.08	$9.50
666-5	.250	.375	1500	.09	$10.50
666-6	.313	.466	1500	.11	$12.65
666-8	.406	.562	1500	.14	$16.50
666-10	.500	.656	1500	.19	$20.50
666-12	.625	.789	1000	.24	$28.50

REUSABLE 37° FITTINGS FOR #666 HOSE

Use with Hose Size	Part No.	Price ea.
666-4	05-01320	$54.75
666-5	05-01321	$69.75
666-6	05-01322	$65.75

Use with Hose Size	Part No.	Price ea.
666-8	05-01323	$88.75
666-10	05-01324	$118.90
666-12	05-01325	$141.75

STRAIGHT CRIMP FLARELESS FITTINGS FOR #666 HOSE

Part Number	Aeroquip Hose Size	Price ea.
AE21502-E	666-4	$24.70
AE21502-F	666-5	$29.65
AE21502-G	666-6	$26.50

Part Number	Aeroquip Hose Size	Price ea.
AE21502-H	666-8	$26.90
AE21502-J	666-10	$38.50
AE21502-K	666-12	$46.85

Crimping tool and sleeve required for assembly.

AP

AEROQUIP 816 & 8891 HOSE FITTINGS
USED WITH AEROQUIP 601 HOSE

816-4

Aeroquip 816 straight hose fittings and 8891 90° hose fittings consist of a pre-assembled nut/nipple assembly and an internally threaded hose socket. The size 4 fitting has a cadmium plated steel nut and nipple. Sizes 6, 8 and 10 nuts and nipples, and all sizes of sockets, are anodized aluminum. Note: Aeroquip 816 fittings are not the same as AN816 fittings. Include the word "Aeroquip" with Part number when ordering.

Aeroquip 816		Size*	Nut Thread Size**	Aeroquip 8891	
Part No.	Price Each			Part No.	Price Each
816-4	$29.75	1/4	7/16-20	8891-4	$51.75
816-6D	$28.50	3/8	9/16-18	8891-6D	$68.85
816-8D	$31.50	1/2	3/4-16	8891-8D	$69.50
816-10D	$38.80	5/8	7/8-14	8891-10D	$86.25

*Corresponds to tube O.D. of AN-type flared tube fittings. Not an Aeroquip dimension. ** Same thread size as AN818 nut of same dash no.
Less 10%, 6 - 11 Aeroquip fittings; Less 15%, 12 - 24 Aeroquip fittings; Less 20%, 25 or more Aeroquip Fittings May be assorted sizes and types.

AEROQUIP FIRE SLEEVE

Aeroquip Firesleeve was specially developed to meet the fire resistance requirements of FAATSO - C53a OR TSO - C75. May be used for all fuel, oil, hydraulic, fire extinguisher & propeller feathering lines. "Fire-proof" hose lines as defined by FAA must withstand a direct flame for fifteen minutes under specified flow conditions without failure. "Fire-resistant" lines must withstand a 5-minute exposure under these conditions. "Fire-proof" hose lines are obtained when the proper size Aeroquip Firesleeve is selected from the chart below and properly assembled. 900591B Clamps - used to secure firesleeve material on each end over the basic hose assembly. See chart for correct size.

900591B-1C ..... Clamp I.D.= 1" ..... P/N 05-02653 ..... $2.20
900591B-2C ..... Clamp I.D.= 1.5" ..... P/N 05-02652 ..... $2.55
900591B-3C ..... Clamp I.D.= 2" ..... P/N 05-02654 ..... $2.93

Part No.	Use With Hose #		900591B Clamp Dash #	Price Per Ft.	Part No.	Use With Hose #		900591B Clamp Dash #	Price Per Ft.
	303	601				303	601		
AE102-8	-3	-4	-1C	$7.60	AE102-16	-10	-10	-3C	$12.80
AE102-9	-4	-5	-2C	$8.50	AE102-18	-12	-	-3C	$14.50
AE102-10	-5	-	-2C	$8.50	AE102-20	-	-12	-3C	$18.85
AE102-12	-6	-6	-2C	$9.50	AE102-22	-16	-16	-3C	$21.50
AE102-14	-8	-8	-2C	$12.50	AE102-24	-	-	-3C	$28.50

Quantity Discounts Same As Aeroquip Hose
Firesleeve Clamp Installation Tool - Band Width: 1/4 in - 3/8 in
P/N 05-00447 ..... $123.95
Economy Firesleeve Clamp Tool - for 3/8" or 1/4" roll band.
P/N 12-00684 ..... $24.70

AEROQUIP AE466

Integral silicone firesleeves on Teflon 666 hose assemblies.

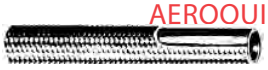
This hose/sleeve combination meets the test requirements of TSO-C53A Type D and TSO-C75 Type IIIA and IIIB. The Silicone sleeve is applied directly onto the metal braid an fittings to form a smooth, tight bond. Hose flexibility is not impaired. Non-age sensitive for extra-long service life. Eliminates the use of band clamps. Temperature range -65°F to +450°F. Specify hose size and length of assembly in inches and eighths of an inch from sealing surface to sealing surface. Available in blue, brown, orange, or purple. Purple is lightweight.

Call 877-4-SPRUCE (777823), or email
info@aircraftspruce.com for pricing and availability.

Size	Aeroquip P/N
-3	AE3663161BXXXX
-4	AE3663161EXXXX
-5	AE3663161FXXXX
-6	AE3663161GXXXX

Size	Aeroquip P/N
-8	AE3663161HXXXX
-10	AE3663161JXXXX
-12	AE3663161KXXXX

AEROQUIP 601/AE701 HOSE



An inner tube of seamless, specially formulated synthetic rubber reinforced with a stainless steel partial inner braid and full-coverage stainless steel outer braid. Operating temperature -40° to 300°F. Aeroquip 601 hose is widely used for aircraft fuel and oil lines where flexibility and light weight are prime considerations. Because of its lighter weight and lower operating pressure than type 303 hose, it is not recommended for hydraulic lines. Use with Aeroquip 816 hose fittings. Aeroquip 601/AE701 is a direct replacement for old 601 hose. AE701 hose has no shelf life and is the upgraded version of 601 hose.

Hose Part Part No.*	For Tubing Size	Hose I.D.	Max. Oper. Pressure** (PSI)	Wt. per Ft. (Lb.)	Price Per Ft.
601-4	1/4	7/32	1,000	.120	$12.10
601-6	3/8	11/32	1,000	.156	$13.10
601-8	1/2	7/16	1,000	.168	$15.80
601-10	5/8	11/16	1,000	.204	$17.80

* Corresponds to dash no. of Aeroquip 816 hose fittings. ** Safety factor of 4.

CUSTOM AEROQUIP 666 TEFLON HOSE ASSEMBLIES

Aeroquip Teflon hose is constructed with a conductive, seamless smooth bore inner tube covered with a stainless steel braid. Unattracted by fuel, oil, coolants and solvents used in aircraft systems. Service and shelf life of Aeroquip Teflon hose is unlimited for all practical purposes. They can be used in fuel, hydraulic and pneumatic applications at working pressures to 1500psi. Minimum burst pressures are 8000 psi sizes -3 to -8. Temperature range is -65° to +450° F. Hose assemblies prices are straight to straight. Call for 45° and 90° elbow pricing.Measurements are taken as follows:

Fittings	Measurement
Straight to Straight	End to end (overall length)
Straight to 45°	End of straight fitting to top of b-nut on 45° fitting
Straight to 90°	End of straight fitting to center of 90° fitting
45° to 45°	Top of b-nut on 45° fitting to Top of b-nut on 45° fitting
45° to 90°	Top of b-nut on 45° fitting to center of 90° fitting
90° to 90°	Center of 90° fitting to Center of 90° fitting

Call 877-4-SPRUCE (777823), or email at info@aircraftspruce.com
for pricing and availability.

Size	Aeroquip P/N
-3	AE3660000BXXXX
-4	AE3660000EXXXX
-5	AE3660000FXXXX
-6	AE3660000GXXXX

Size	Aeroquip P/N
-8	AE3660000HXXXX
-10	AE3660000JXXXX
-12	AE3660000KXXXX

Temp. range -65°F to +350°F. Color; Blue

SILICONE HOSE

ID	OD	Wt / Ft. (Lb.)	Part No.	Price / Ft
1/4"	0.45"	.064	05-00659	$5.25
3/8"	0.67"	.144	05-00660	$6.65
5/8"	0.95"	.220	05-00661	$7.95
3/4"	1.07"	.276	05-00671	$8.75

BLACK SILICONE FIRE SLEEVE

This black silicone fire sleeve has a temperature range of -65°F to +2000°F. The 5/8" I.D. Fits all E185, E225 & 0-300 engine breather tubes. The 3/4" I.D. fits O-470 I IO470 breather tubes. Sold by the foot.

1/4" ..... P/N 05-06832 ..... $4.95
5/8" ..... P/N 05-00672 ..... $6.95
3/4" ..... P/N 05-04549 ..... $8.75

BLUE FIRE SLEEVE

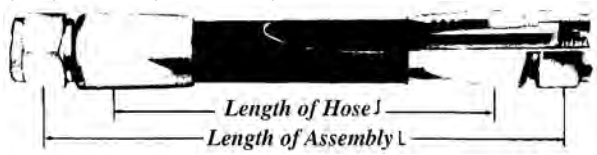
1/2 ID size for wires or other sizes for wire insulation or firesleeve for aircraft hose assembly. Colors: Blue

Size	Part No.	Price
1/2"	05-04712	$6.90
5/8"	05-04713	$7.50
3/4"	05-04714	$7.90
7/8"	05-04715	$10.55
1"	05-04716	$11.85

ASSEMBLY INSTRUCTIONS

USING 303 HOSE AND 491 FITTINGS

To make hose assembly of length "L", cut hose to length "J". Obtain "J" length by subtracting proper fitting allowances.



Hose & Fitting Dash No.	-3	-4	-5	-6	-8	-10	-12
Fitting Allowance* (In.)	1.30	1.30	1.48	1.54	1.88	2.00	2.00

*Allowance for 2 fittings.

step 1 Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. Do not remove cover.

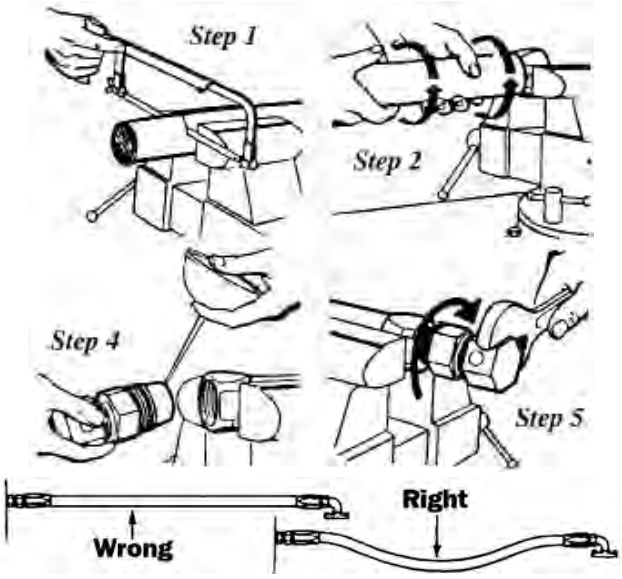
step 2 Place socket in vise. Do not overtighten vise on thin-walled sockets of lightweight fittings. Screw hose into socket until it bottoms. Back-off 1/4 turn.

step 3 Tighten nipple and nut on assembly mandrel.

step 4 Lubricate inside of hose and nipple threads liberally. Use lubricating oil, petrolatum or light grease.

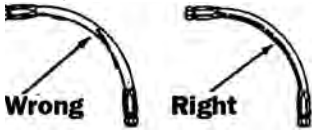
step 5 Screw nipple into socket and hose using wrench on ass'y tool hex. Nut must swivel freely when assembly tool is removed. Maximum allowable gap is 1/16 inch. L.P.S.-1 is an excellent lubricant for use in hose assembly.

CLEAN, INSPECT, PROOF TEST



PLANNING HOSE LINE INSTALLATIONS

1. Provide slack or bend in the hose line to provide for changes in length that will occur when pressure is applied.



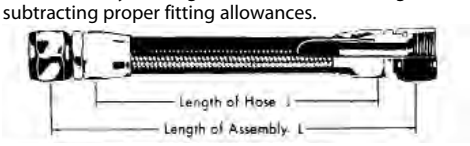
2. Observe linear stripe. Hose must not be twisted. High pressures applied to a twisted hose may cause failure or loosen the nut.

*10781-4 Clamp to be used to secure the Firesleeve material on each end over the basic hose assembly. Specify size. -22CR or -32CR $3.55 - $3.90

End Dip for Firesleeve - P/N 5027 ..... $188.75

USING 601 HOSE AND 816 FITTINGS

To make hose assembly of length "L", cut hose to length "J". Obtain "J" length by subtracting proper fitting allowances.



step 1 - Cut hose squarely to length. Use hose cut-off machine or fine tooth hacksaw. To minimize wire braid flare-out, wrap hose with masking tape and saw through tape. Remove tape before step 2.

step 2 - Insert hose in socket with a twisting, pushing motion until hose is in line with back of socket threads.

step 3 - Important-mark hose position around hose at rear of socket. Use a grease pencil, painted line or tape.

step 4 - Lubricate inside of hose & nipple threads liberally. Use SAE 30 lubricating oil. Avoid getting oil in the cutting spur of the nipple.

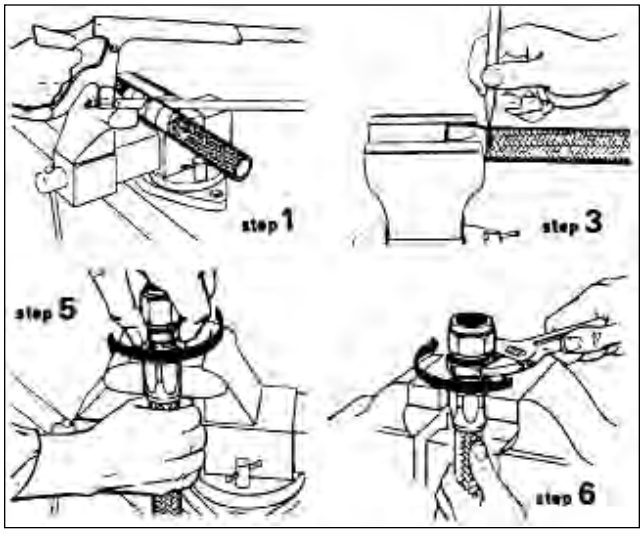
step 5 - Carefully insert nipple and engage nipple and socket threads while holding hose in position with other hand. Make sure that hose does not push out of socket by observing mark made in step 3.

step 6 - Complete assembly using wrench while continuing to hold in position. Maximum allowable gap is .041" in sizes 3, 4, & 5, and .031" in size 6 & up.

step 7 - IMPORTANT—check for hose push-out by observing hose position mark. None should be evident.

CLEAN, INSPECT, PROOF TEST

Note: Hose push out after proof test should not exceed 1/32" on sizes 12 and up. None is allowable on smaller sizes.



STRATOFLEX 2650 FIRESLEEVE

Part No.	Use With Hose No.				*10781-4 Clamp	Price Per Ft.
	124	193	111	156		
2650-6	-4	-	-	-	-	-
2650-8	-6	-3	-	-4	22CR	$10.50
2650-9	-	-4	-	-5	22CR	$10.95
2650-10	-8	-	-4	-6	22CR	$12.90
2650-11	-	-6	-	-	-	-
2650-12	-10	-	-5,-6	-8	22CR	$13.55
2650-13	-	-8	-8	-	-	-
2650-14	-12	-	-	-	22CR	$15.50
2650-16	-	-10	-10	-10	32CR	$12.75
2650-18	-	-	-	-12	32CR	$19.50
2650-20	-16	-	-12	-	32CR	$24.60
2650-22	-	-	-16	-16	32CR	$29.90

AP

STRATOFLEX HOSE & FITTINGS

STRATOFLEX 111 HOSE

Part No	Tube O.D.	Hose ID.	Max Press	Wt Per lb./In.	Price Per Ft.
111-4	.250	.188	3000	.0120	$8.99
111-5	.312	.250	3000	.0130	$11.50
111-6	.375	.312	2000	.0190	$9.90
111-8	.500	.406	2000	.0220	$10.50
111-10	.625	.500	1750	.0310	$15.70
111-12	.750	.625	1500	.0380	$14.90
111-16	1.00	.875	800	.0368	$18.50

STRATOFLEX 300 STRAIGHT FLARED FITTINGS FOR 111 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
300-3S	.188	3/8-24	$17.90
300-4S	.200	7/16-20	$20.85
300-5S	.312	1/2-20	$26.50
300-6S	.375	9/16-18	$60.75
300-8D	.500	3/4-16	$32.50
300-10D	.625	7/8-14	$41.85
300-12D	.750	1-1/16-12	$58.75
300-16D	1.00	1-5/16-12	$66.70

STRATOFLEX 124 HOSE

Description	Part No.	Price
124-3 Hose	124-3	$5.49
124-4 Hose	124-4	$15.90
124-6 Hose	124-6	$10.00
124-10 Hose	124-10	$8.30

STRATOFLEX 156 MEDIUM PRESSURE HOSE

Part No	Tube O.D.	Hose ID.	Max Press	Mini Blend	Price/Ft.
156-3	.188	.156	1500	1.75	$19.75
156-4	.250	.219	1500	2.00	$16.55
156-5	.312	.281	1500	2.25	$21.50
156-6	.375	.344	1500	2.50	$19.50
156-8	.500	.438	1250	3.50	$18.65
156-10	.625	.562	1250	4.00	$20.75
156-12	.750	.688	1250	4.50	$30.50
156-16	1.000	.875	1000	5.50	$33.50

STRATOFLEX 678 45° ELBOW FLARED FITTINGS FOR 156 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
678-3S	.188	3/8-24	$140.90
678-4S	.250	7/16-20	$127.75
678-6D	.375	9/16-18	$108.90
678-8D	.500	3/4-16	$89.85
678-10D	.625	7/8-14	$261.95
678-12D	.750	1-1/16-12	$124.80
678-16D	1.00	1-5/16-12	-

STRATOFLEX 193 HOSE

Specifications: Hose meets or exceeds the requirements of MIL-H-5593. Construction: Tube - Seamless Buna - N. Reinforcement - One braid of high tensile fiber cord. Cover - Synthetic rubber. Identification: LP-MIL-H-5593-size, date of manufacture, manufacturer's code (CAGE) marked on one side of the hose. Stratoflex 193-size marked on other side of hose. Yellow markings are repeated every 12 inches. Application: Low pressure air and vacuum instrument systems. Vacuum service 20"Hg sizes -2 thru -6; 10"Hg sizes -8and -10. Temperature range: -65 to +165°F / (-54 to +74°C).

Part No	Tube O.D.	Hose ID.	Max Press	Weight per In. (l.b.)	Price Per Ft.
193-2	.35	.125	300	.0038	$8.50
193-3	.41	.188	250	.0050	$4.35
193-4	.48	.250	200	.0058	$3.95
193-6	.60	.375	150	.0079	$4.70
193-8	.75	.500	150	.0015	$8.50
193-10	.87	.625	150	.0138	$9.85

STRATOFLEX 646/640 45° ELBOW FLARED FITTINGS FOR 111 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
646-4S	.250	7/16-20	$75.75
646-6S	.375	9/16-18	$125.75
646-8D	.500	3/4-16	$172.75
646-10D	.625	7/8-14	$189.75
640-12D	.750	1-1/16-12	$249.95
640-16D	1.00	1-5/16-12	$391.95

STRATOFLEX 649/643 90° ELBOW FLARED FITTINGS FOR 111 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
649-4S	.250	7/16-20	$82.75
649-6S	.375	9/16-18	$191.75
649-8D	.500	3/4-16	$116.75
649-10D	.625	7/8-14	$159.75
649-12D	.750	1-1/16-12	$169.75

STRATOFLEX 676 STRAIGHT FLARED FITTINGS FOR 156 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
676-3S	.188	3/8-24	$43.60
676-4S	.250	7/16-20	$35.65
676-5S	.312	1/2-20	$71.75
676-6D	.375	9/16-18	$36.85
676-8D	.500	3/4-16	$28.75
676-10D	.625	7/8-14	$46.75
676-12D	.750	1-1/16-12	$49.90
676-16D	1.000	1-5/16-12	$59.75

STRATOFLEX 680 90° ELBOW FLARED FITTINGS FOR 156 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
680-3S	.188	3/8-24	$239.95
680-4S	.250	7/16-20	$68.75
680-5S	.312	1/2-20	$149.75
680-6D	.375	9/16-18	$118.75
680-8D	.500	3/4-16	$99.85
680-10D	.625	7/8-14	$244.95
680-12D	.750	1 1/16-12	$132.75
680-16D	1.000	1 5/16-12	$155.75

STRATOFLEX 311 STRAIGHT FLARED FITTING FOR 193 HOSE

Part No.	Tube O.D.	Thread	Price Ea.
311-2D	.125	5/16-24	$23.55
311-3D	.188	3/8-24	$17.90
311-4D	.250	7/16-20	$15.50
311-6D	.375	9/16-18	$27.65
311-8D	.500	3/4-16	$55.95
311-10D	.625	7/8-14	$159.85

STRATOFLEX FLARED HOSE ASSEMBLIES

Call for quote on Stratoflex 111, 156, 193 and 124 PTFE flared hose assemblies. Our hose assemblies are competitively priced and available for immediate shipment.

VAUGHN'S STANDOFF HUB

The Vaughn's Standoff Hub is a system consisting of three parts (hub, washers, and saddles) that enable you to keep hoses and wires in place in aircraft, machines, and more. The Standoff parts are made of durable nylon and are clean and easy to install. Parts sold separately.

Vaughn's Standoff Hub ..... P/N 05-06555.....$1.49
Vaughn's Standoff Hub (Washer Only)..... P/N 05-06554.....$0.09
Vaughn's Standoff Hub (Saddle Only)..... P/N 05-06556.....$4.85

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CEET

SCEET

"CAT" - "CAT" type flexible hot or cold air ducting is extremely lightweight and highly flexible. Short lengths can be joined together to form a continuous length. Made of a single ply black neoprene-impregnated fiberglass with a spiral copper coated steel wire inside and wrapped with fiberglass cord on the outside. Suitable for conveying fumes and air a temperatures from -65° to over 350°F. Not reccomended for handling liquids or highly abrasive materials, or for negative pressure applications.

"SCAT" - "SCAT" type ducting has the same type construction as "CAT" except with red silicone rubber impregnation. For use in conducting extremely cold or hot air with temperatures from -65° to over 550°F. Not recommended for negative pressure applications.

"CEET" - "CEET" type ducting has two plies of neoprene-impregnated fiberglass, similar to CAT except wire between plies. For use in hot or cold air applications and for conveying fumes at temperatures ranging from -65° to over 350°F. Not reccomended for handling liquids or highly abrasive materials, or for negative pressure applications.

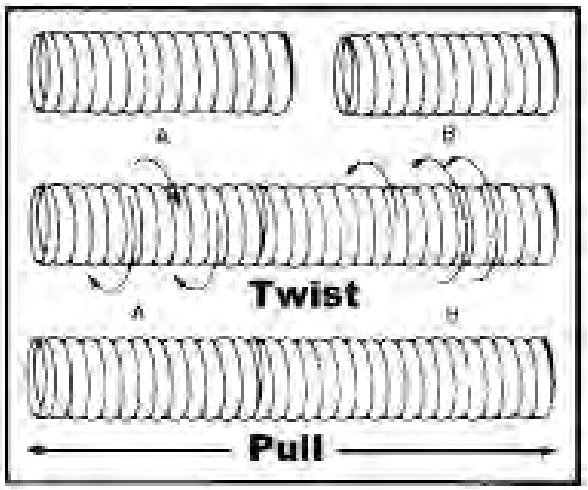
"SCEET" - "SCEET" type ducting has two plies of silicone rubber-impregnated fiberglass, similar to SCAT except wire between plies. Ideal for use in conducting extremely cold or hot air at temperatures from -80° to over 550°F, and for conveying fumes. Not reccomended for handling liquids or highly abrasive materials, or for negative pressure applications.

Dash No.	Inside Diameter	CAT		SCAT		CEET		SCEET	
		Part Number	Price Per Foot	Part Number	Price Per Foot	Part Number	Price Per Foot	Part Number	Price Per Foot
-2A	5/8"	05-29801	$7.50	05-29901	$7.50	05-30501	$7.50	05-30601	$6.95
-3	3/4"	05-29802	$5.99	05-29902	$9.50	05-30502	$6.99	05-30602	$5.95
-3A	7/8"	05-29803	$6.50	05-29903	$5.95	05-30503	$7.50	05-30603	$6.50
-4	1"	05-29804	$6.50	05-29904	$7.80	05-30504	$7.50	05-30604	$6.50
-5	1-1/4"	05-29805	$6.60	05-29905	$6.50	05-30505	$7.50	05-30605	$7.50
-6	1-1/2"	05-29806	$5.75	05-29906	$7.50	05-30506	$7.50	05-30606	$8.50
-7	1-3/4"	05-29807	$6.25	05-29907	$9.50	05-30507	$7.75	05-30607	$14.75
-8	2"	05-29808	$6.65	05-29908	$8.50	05-30508	$7.90	05-30608	$10.55
-9	2-1/4"	05-29809	$6.75	05-29909	$9.60	05-30509	$7.95	05-30609	$10.50
-10	2-1/2"	05-29810	$7.50	05-29910	$9.75	05-30510	$8.50	05-30610	$11.50
-11	2-3/4"	05-29811	$7.65	05-29911	$10.50	05-30511	$9.50	05-30611	$12.90
-12	3"	05-29812	$8.75	05-29912	$10.90	05-30512	$9.85	05-30612	$11.90
-13	3-1/4"	05-29813	$9.50	05-29913	$12.80	05-30513	$10.50	05-30613	$13.50
-14	3-1/2"	05-29814	$9.75	05-29914	$11.50	05-30514	$10.95	05-30614	$14.90
-15	3-3/4"	05-29815	$10.75	05-29915	$11.50	05-30515	$11.50	05-30615	$16.70
-16	4"	05-29816	$10.50	05-29916	$14.50	05-30516	$11.90	05-30616	$16.65
-18	4-1/2"	05-29818	$10.75	05-29918	$15.50	05-30518	$12.85	05-30618	$16.80
20	5"	05-29820	$11.75	05-29920	$16.50	05-30520	$14.85	05-30620	$19.90
24	6"	05-29824	$12.50	05-29924	$19.50	05-30524	$16.75	05-30624	$23.50

Diameters not listed are available as a special order in full lengths only. Order CAT 2-3/4" diameter for Whisperflow air vents. Full factory lengths are 10 ft to 13 ft pieces on CAT, CEET, SCAT, & SCEET, except 5/8" id (PN 05-30501 is only 9ft).

SCREWING DUCTING TOGETHER

Short lengths of ducting can be spliced to eliminate waste. For permanent splices, an adhesive should be applied to the ends before joining. To relieve wire tension when cut, bend end of wire in slightly.



ALUMINUM FLANGES FOR DUCTING

Simplify installation of cabin, carb. heat, cabin vent lines. Aluminum flange may be welded or riveted in place. Slip ducting over outlet and secure with clamp.

Made in the USA

Flange Size	Part No.	Price
1"	10350-4	$6.95
1-1/4"	10350-5	$10.50
1-1/2"	10350-6	$7.50
1-3/4"	10350-7	$10.75
2	10350-8	$7.50
2-1/4"	10350-9	$11.60
2-1/2"	10350-10	$7.75
2-3/4"	10350-11	$11.75
3"	10350-12	$8.75
Discount: 10% On 20; 15% On 50, 20% On 100 (Assorted)		

ANTIQUE PIPER WING ROOT FRAME COVERS

This cover is constructed of a light-weight stiffener panel, 1/2" foam padding and headliner fabric. A flap extends into the back side of the wing root frame and glues in place for a professional finish.

P/N 09-17345.....$84.75

AP

E-A-R-COMPOSITE DAMPING FOAM

ADC-224 is a mid-temperature skin damping composite of 0.25" thick damping foam fixed with 0.005" thick aluminum foil and backed with pressure sensitive adhesive. Used in aircraft for weight efficient damping and to reduce radiated noise. Meets FAR 25.853 (A) for fire resistance. Furnished in 27" x 48" sheets.

P/N 09-00181 ..... $189.50 / sheet

Less 10% discount on 10 or more sheets

3M™ SOUND & VIBRATION DAMPING PANELS

Designed for damping resonant vibrations of thin sheet metal, these panels are pressure sensitive, specially compounded polyurethane damping foam with an aluminum foil backing. The adhesive on the foam is protected by a peel-off paper covering. It is an excellent insulator for conducted heat and is an excellent heat reflector. Fire-resistant and self-extinguishing per FAA test procedure. Excellent moisture resistance. Resistant to most solvents. Easily applied with only hand pressure for a permanent bond even on rough, irregular surfaces. Used extensively in commercial aircraft and highly recommended for metal home builts. Apply to firewall, fuselage — anywhere a vibration problem exists. Wt.4 oz./sq. ft., 1/4" thick. Meets FAR 25.853

3M Sound Damp Panel 6" x 48" ..... P/N 09-30206 ..... $30.65 ea.
3M Sound Damp Panel 12" x 48" ..... P/N 09-30212 ..... $57.75 ea.
3M Sound Damp Panel 18" x 48" ..... P/N 09-30218 ..... $81.75ea.

Less 15% on 12 or more pieces

ALUMINUM FOIL TAPE

A 2 Mil. (50 micron) high strength aluminum foil coated with an aggressive, high temperature acrylic adhesive system. The foil conforms well to both fibrous and sheet metal ducts, providing an excellent vapor seal. The malleable foil also conforms well around corners and to irregular surfaces. Coated with a special cold weather acrylic pressure sensitive adhesive system which combines superior quick stick at normal temperature with superior low temperature performance below freezing - this is the ultimate in cold weather tapes. Recommended for use at normal and elevated temperatures also. Applications: Primarily used for vapor sealing fiberglass ductboard and sheet metal ducts; can also be used on FSK systems.tape described above.2" x 25 Yd. Roll.

Description	Part No.	Price	Description	Part No.	Price
1"X 25YD	09-01273	$11.35	4"X25 YD	09-01275	$38.95
2"X 25 YD	09-01274	$25.90	6"X50 YDS	09-01276	$59.50

TEFLON ANTI-CHAFE TAPE

ISD Chafe Tape is a durable Teflon material with a pressure sensitive adhesive which resists solvents, and oils. Designed specifically to prevent aluminum chafing between airframes and engine cowls. It helps prevent black streaking on aircraft exterior due to cowl chafing. Not FAA/PMA approved. Operable temperature range: -100°F to +500°F. Width: 1". Roll length: 6 yds. Tkns: .012" P/N 09-31805 ..... $42.50/roll

TEFLON COATED FIBERGLASS ANTI-CHAFE TAPE

These 1' wide rolls of Teflon on fiberglass anti-chafe tape are excellent for use on engine cowlings to keep cowl components from chafing. The tape is available in 5 mil thick and 10 mil thick and comes with a silicone adhesive on the tape. Just peel back liner and install. Rolls are 1" wide x 36 yds long.

5 Mil Anti-Chafe tape ..... P/N 05-01024 ..... $45.50/roll
10 Mil Anti-Chafe tape ..... P/N 05-01025 ..... $59.85/roll

UNI-WRAP SILICONE TAPE
RUBBER SELF-BONDING TAPE

UniWrap silicone rubber sealing tape bonds to itself permanently to protect, repair, join, or insulate virtually any type of part on which ordinary tape can be used. But the big difference between UniWrap and ordinary tape is that it fuses to itself permanently to form a homogenous mass and provides unprecedented protection and insulating characteristics. UniWrap uses no adhesives so it is non-tacky. It has a 12 month shelf life and after fusing is unaffected by moisture, cold, heat, ozone shock, or vibration. Meets MIL-I-46852 Type II as well as strict aerospace industry performance requirements. Available in red, black, gray, or white. Furnished in 10 yard rolls, UniWrap is 1" wide and 0.020" thick UniWrap (red) P/N 09-30450 ..... $12.85

NOXUDOL SOUNDPROOFING LIQUID

A paint-on soundproofing material that is applied to metal surfaces to reduce vibration and reverberant noise. Use to fill cracks and spaces where noise can enter. Buff color and can be painted. Paint engine mounts to increase fire resistance! Odorless and non-toxic when dry. Waterbased product. Non-Flammable. Shelf life: 1-year. Not FAA approved.

Quarts ..... P/N 09-42740 ..... $24.70
Gallon ..... P/N 09-00772 ..... $96.75

SUPER SOUNDPROOFING TAPE

This is a 1/8" thick by 2" wide self adhesive tape that can be placed on metal panels and wrapped around ducts to reduce vibration and reverberant noise transfer. Not FAA approved. 30 ft. rolls.

1" wide ..... P/N 09-00381 ..... $8.65/ea.
2" wide ..... P/N 09-42745 ..... $23.75/ea.
4" wide ..... P/N 09-00433 ..... $46.50/roll

SUPER SOUNDPROOFING FLOOR MAT

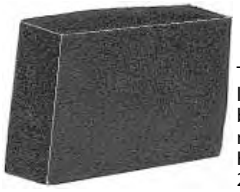
This heavy duty, wear resistant vinyl mat with foam backing can be placed on aircraft floors to reduce noise & vibration. 54" width. ..... P/N 09-42750 ..... $16.75/lin.ft.
Without foam backing ..... P/N 09-42751 ..... $9.85/lin.ft.

HOW TO SOUNDPROOF LIGHT AIRCRAFT

Sound measurement indicates that sometimes the noise levels are so high in some aircraft that damage to hearing over time can result. This "How-To" manual discusses the advanced techniques to sound proofing the light aircraft and drastically reducing such noise. Information presented is applicable to all types of planes from "puddle-jumpers" to jets.

P/N 09-42755 ..... FREE

SUPER SOUNDPROOFING SHEET WITHOUT ADHESIVE

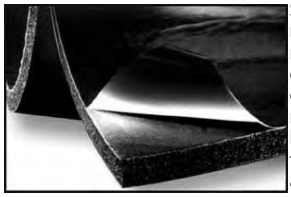


This material is excellent for reducing noise levels in all types of certificated and home-built aircraft. It is a closed cell vinyl insulating material which will not absorb water or oil. Has fire retardant qualities and meets FAR 25.853a Appendix F, Pt1. It is smooth on one side for easy attachment to the inside cabin skins, sides, top and front firewall. Excellent for helicopters as well. Furnished in bulk 48" wide sheet, it is easily cut by scissors and attached with contact cement. Available in black only.

The Flammability Report (Burn Certs) are available on request.

Thick-ness	Wt. / Lineal ft.	P/N 09-	Price Per. Lineal Ft.	Thick-ness	Wt. per Lineal ft.	P/N 09-	Price Per. Lineal Ft.
1/8"	.25 lbs.	42719	$5.45	3/4"	1.4 lbs.	42727	$20.50
1/4"	.60 lbs.	42720	$13.50	1"	2.0 lbs.	42730	$21.85
3/8"	.80 lbs.	42723	$12.65	1-1/2"	3.0 lbs.	72731	$31.85
1/2"	1.0 lbs.	42725	$14.85	2"	4.0 lbs.	42760	$34.50

SUPER SOUND PROOF WITH ADHESIVE



Super Soundproofing Foam Mat for noise control: A closed cell vinyl-nitride noise control FOAM suitable for application to cars, boats, planes, home and office, anywhere a noise control mat is needed. Won't absorb moisture or odor, long lasting and durable. An excellent thermal insulator! (FAA Approved for aircraft, too!) Just apply with vinyl or contact cement to reduce and absorb sound. There may be small variances in the width of this product.

1/8" w/adhesive ..... P/N 09-01243 ..... $8.75
1/4" w/adhesive ..... P/N 09-01244 ..... $12.95
3/8" w/adhesive ..... P/N 09-00443 ..... $16.65
1/2" w/adhesive ..... P/N 09-00444 ..... $20.75
3/4" w/adhesive ..... P/N 09-01245 ..... $27.50
1" w/adhesive ..... P/N 09-01246 ..... $27.50
2" w/adhesive ..... P/N 09-01247 ..... $39.50

SEE THE ENGINE PARTS SECTION OF THE CATALOG FOR MORE INSULATION PRODUCTS!

SOUNDEX PREMIUM AIRCRAFT SOUNDPROOF AND MATERIALS PACKAGES

SoundEx™ is a premium aircraft soundproofing / insulation that incorporates excellent vibration damping and noise absorption properties. SoundExTM is a superior product compared to other products on the market because of it's thermal qualities, adds less weight to aircraft (6.11oz. per sq. ft. for 1" thickness and 5.8 oz. per sq. ft. for 3/4" thickness), and affordability. Stop the yelling and make flying fatigue a thing of the past. Improve your quality of flight with SoundExTM.

Decibel Reduction Data - Decibel reductions will vary depending upon how well your aircraft is currently insulated. Our latest data indicate that you should expect noise level reduction from 4-7 dB(a) and 10-15 dB(c). From singles and light twins to corporate jets, SoundEx™ is the noise reduction option of choice. Pilots and passengers can fly and communicate in comfort.

Flammability Requirements - All materials are manufactured to meet requirements for FAR 23:856 / FAR 25:856 Part II. Aircraft specific testing may be required for return to service.

No.	Aircraft Model	Basic Materials (sidewall above floor/roof)		Deluxe Materials (basic + floor/belly)		SX-250 Footage (black mat for under carpet)
BEECHCRAFT						
SX-01	Bonanza 35-E35	05-04256	$895.00	05-04256-1	$985.00	N/A
SX-02	Bonanza F35-M35	05-10770	$719.00	05-10770-1	$1,142.00	N/A
SX-03	Bonanza N35-P35, C33-E33, and F33C (and older with long 3rd window added)	05-04312	$721.00	05-04312-1	$1,146.00	N/A
SX-04	Bonanza/Baron S35-V35/F33/A55-B55 (and older with large baggage and long 3rd window added)	05-04313	$895.00	05-04313-1	$1,319.00	N/A
SX-05	Bonanza/Baron F33-G33 and B55-E55 (with extended baggage)	05-04314	$1,071.00	05-04314-1	$1,494.00	N/A
SX-06	Bonanza/Baron 36-A36 and B58 (through 1978	05-04315	$1,067.00	05-04315-1	$1,314.00	N/A
SX-07	Bonanza/Baron A36-B36 and B58 (1978 and newer) (with extended baggage)	05-04316	$1,414.00	05-04316-1	$1,666.00	N/A
SX-08	Bonanza 33/35/36 Windsh/d set (without factory speedslope) Includes upper material forward of instrument panel	05-04317	$203.95	N/A	N/A	N/A
SX-09	Bonanza 33/35/36 Windsh/d set (with factory speedslope) Includes upper material forward of instrument panel	05-04318	$194.75	N/A	N/A	N/A
SX-10	Duke	05-04319	$1,775.00	N/A	N/A	9 ft.
CHEYENNE						
SX-42	Cheyenne I & II	05-07161	$1,942.00			
KING AIR 90						
SX-44	King Air 90	05-07158	$3,185.00	N/A	N/A	-
KING AIR 300 COMING SOON						
*Ensure you order the correct Bonanza Materials by checking the following modifications: • Bonanza 35-E35 with tiny 3rd window modification, order Materials for F35-M35. • Bonanza 35-M35 (or A33-B33) with large third window and hat shelf modification, order Materials for N35-P35. • Bonanza 35-P35 (or A33-E33) with large third window and expanded baggage modification, order Materials for S35-V35B.						
PIPER						
SX-11	Comanche PA24/PA30 (through 1963) (*Floor not drilled for access)	05-04320	$1,065.00	05-04320-1	$1,698.00	N/A
SX-12	Comanche PA24/PA30 (1964 and 1965)	05-04321	$892.00	05-04321-1	$1,698.00	N/A
SX-13	Comanche PA24/PA30 (1966 and newer)	05-04322	$905.00	05-04322-1	$1,389.00	N/A
SX-14	Early Arrow, Cherokee, Warrior PA28-160, 180, 235	05-04323	$893.00	N/A	N/A	9 ft.

No.	Aircraft Model	Basic Materials (sidewall above floor/roof)		Deluxe Materials (basic + floor/belly)		SX-250 Footage (black mat for under carpet)
SX-15	Arrow, Cherokee, Warrior PA28-160, 180, 235	05-04324	$895.00	N/A	N/A	9 ft.
SX-16	Cherokee Six, Seneca, Lance, Saratoga PA32, PA34	05-04325	$1,414.00	N/A	N/A	11 ft.
PIPER CONT.						
SX-18	Navajo	05-04327	$2,479.00	N/A	N/A	12 ft.
SX-34	Aztec	05-04329	$1,414.00	N/A	N/A	13 ft.
Tomahawk						
SX-29	Tomahawk	05-07159	$714.00	N/A	N/A	-
CESSNA						
SX-35	150	05-04330	$707.00	N/A	N/A	6 ft.
SX-36	152	05-04331	$707.00	N/A	N/A	6 ft.
SX-24	170	05-04332	$880.00	N/A	N/A	8 ft.
SX-20	172	05-04333	$895.00	N/A	N/A	8 ft.
SX-32	177, 177 RG	05-04334	$1,071.00	N/A	N/A	9 ft.
SX-37	180/185	05-04335	$880.00	N/A	N/A	8 ft.
SX-21	182 (except earliest without rear window)	05-04336	$897.00	N/A	N/A	8 ft.
206	Coming Soon!					
SX-22	210 (except earliest without rear window)	05-04337	$1,071.00	N/A	N/A	8 ft.
SX-23	310 (without rear window)	05-04338	$1,398.00	N/A	N/A	10 ft.
SX-24	310	05-04339	$1,414.00	N/A	N/A	10 ft.
SX-26	337, 337P	05-04340	$1,071.00	N/A	N/A	8 ft.
SX-25	340	05-04341	$1,951.00	N/A	N/A	12 ft.
SX-33	414A	05-04342	$2,264.00	N/A	N/A	13 ft.
COMMANDER						
SX-43	112/114	05-06834	$1,232.00	N/A	N/A	8 ft.
MOONEY						
SX-27	M20 to M20E	05-04344	$895.00	N/A	N/A	6 ft.
SX-28	M20F to M20K	05-04345	$895.00	N/A	N/A	7 ft.
M20L to M20S Coming Soon!						
NAVION						
SX-31	A, B	05-04346	$1,248.00	N/A	N/A	N/A
VAN'S RV (EXPERIMENTAL)						
SX-30	RV-8 (Firewall, Sidewalls, Belly)	N/A	N/A	05-04349-1	$935.00	N/A
BULK MATERIAL						
SXE-1125	1-1/8" x 36" x 48" SoundEx Sheet			05-04353	$136.75	per sheet
SXE-875	7/8" x 36" x 48" SoundEx Sheet			05-04354	$129.85	per sheet
SX-600	3/4" x 36" x 48" Black Mat			05-04357	$93.75	per sheet
SX-500	1/2" x 48" Black Mat			05-04358	$29.90	per roll ft.
SX-250	1/4" x 48" Black Mat			05-04359	$19.85	per roll ft.
SX-125	1/8" x 36" x 48" Black Mat			05-04360	$16.75	per sheet
SXT-200	2" Aluminum Foil Tape			05-04364	$15.95	per roll ft
SX-1357	SoundEx Glue			05-04365	$17.50	per 6oz. tub

INSULATION MATERIALS

AP

THE INSULATOR
AIRCRAFT INSULATOR MATERIAL

The Insulator is one of the finest sound proofing and thermal insulation materials available, and will last the life of the aircraft. The dual sided Insulator panels are ideal for installation on interior skin, floor, engine covers, doors, headliners, and bulkheads. The Insulator uses multi - layered fiber plys bonded to reinforced high performance foil to provide optimum barrier to acoustics, radiant heat, thermal heat, and moisture. Insulator is available in 4'x 6' panels or by the lineal foot (4' wide). Install Insulator with Sticky Stuff spray adhesive (shown below) and Insul-Tape. Not FAA approved.

INSULATOR PANELS

Insulator – one ply 4' x 6' sheet. Single sided only.
3/8" thick ..... P/N 09-27400 ..... $29.65 ea
Discount: less 15% on orders for 20 sheets (assorted)

INSULATOR BY THE FOOT

Single side foil, single layer #6014; 4 ft. wide.
P/N 09-06014 ..... $4.20 /ft.
Double side foil, single layer #6016;
4 ft wide ..... P/N 09-06016 ..... $5.95 /ft.
Discount: less 15% for 100 ft. (per P/N)

STICKY STUFF ADHESIVE

Stick Stuff is one of the best performing spray adhesives available. It is ideal for installing the Insulator and has many other uses. One spray can will install two 4' x 6' panels.
P/N 09-27415 ..... $11.75/ea.

INSUL-TAPE
AIRCRAFT INSULATOR MATERIAL

This pressure sensitive aluminized foil tape conforms to irregular surfaces, seals seams and joints and provides a vapor barrier. Also mends damaged Insulator foil. Cuts easily with household scissors.
30' roll ..... P/N 09-27420 ..... $5.35/ea.

BLANKET IN-A-BOX

Insulating your aircraft made easy! Blanket is ready to install as is or can be modified to fit special areas. Each box contains all the materials to insulate your aircraft including an Orcotek strip blanket, tape, cutting knife, instructions and built-in work surface with measuring grid.
Furnished as follows:
1" blanket-in-a-box contains 1 roll (1"x20"x100') Orcotek strip blanket, 2 rolls of Orcotape OT-16A (2"), utility knife, dispenser box-work platform P/N 09-45005 $2,463.00/box
2" blanket-in-a-box contains 1 roll (2"x20"x50') Orcotek strip blanket 1 roll of Orcotape OT-16A (3"), utility knife, dispenser box/work platform P/N 09-45010 ..... $1,563.00/box

CONTEGO FIRE BARRIER LATEX PRIMER
-THE FIRE STOPS HERE-

Contego protects most building materials from the ravages of fire. Contego intumescent fire barrier products are all non-toxic, non-dermatic, and safe for pets. When exposed to fire, Contego fire retardant coatings expand to form a tough char barrier fire cannot penetrate. Deprived of fuel, the fire quickly dies. Contego not only helps prevent fires, it minimizes deadly smoke production, one of the leading causes of fatalities in residential and commercial fires. Intumescent fire barriers are nothing new, but Contego Passive Fire Barrier Latex represents a quantum leap forward in terms of quality, versatility, affordability and fire safety-all in one truly impressive fire proofing product. Size: Quart.
P/N 05-02615 ..... $25.90

3M™ CARPET TAPE 9377 2 INCH X 25 YARD

3M 9377 Tape has a differential adhesive system with a high-tack acrylic that bonds to the top-layer substrate and a rubber-based adhesive system that attaches to the flooring material. One side is black and attaches to the flooring material with an acrylic-based adhesive. The white side of the tape is a rubber-based adhesive that provides a bond to the floor surface. Firm application pressure helps develop better adhesive contact and improve bond strength. The bond strength will build over time reaching maximum strength at 72 hours.
FAR-25-.853 P/N 09-02133 ..... $44.90

INSULATION REPAIR & FABRICATION TAPE

Orcotape OT-16A is a lightweight, pressure sensitive, reinforced, metallized polyvinyl fluoride tape which is designed to be used in the fabrication, repair & installation of thermal/acoustic blankets. It is the companion tape to be used with the Orcotek strip blanket to seal the edges. Furnished in 60yd rolls.
2" width ..... P/N 09-45040 ..... $138.75/ea.
3" width ..... P/N 09-45045 ..... $224.95/ea.
5" width ..... P/N 09-02554 ..... $398.00/ea.

ORCOTEK STRIP BLANKET

Aircraft insulation by the foot. This durable, state-of-the-art, light weight blanket meets the thermal and acoustic requirements of the major aircraft manufacturers and is now available for your airplane. The blanket consists of fiberglass enclosed in moisture barrier. It can be used as is or cut in special shapes. Use Orcotape OT-16A 2" or 3" tape to seal the open edge(s) of the blanket. Strip blanket available in 1" thick x 20" wide or 2" thick x 20" wide.
1" thick x 20" wide ..... P/N 09-45015 ..... $26.50/linear ft.
2" thick x 20" wide ..... P/N 09-45020 ..... $31.60/linear ft.

3M™ INTERAM CERAMIC BLANKET 49 INCHES BY 25 FEET

3M Interam Mat I-10A, 49 inches by 25 feet (one roll): Ceramic fiber based material that expands into low-density insulation blankets when exposed to high temperatures or flames. Outer foil layer is aluminum.
P/N 03-00136 ..... $676.00

VALCO CINCINNATI MULTI-PURPOSE SEALANT

Valco Cincinnati multi-purpose sealant is a paste-like, one component material that cures to a tough, rubbery solid upon exposure to moisture in the air. Because it does not flow due to its own weight, this sealant can be applied overhead or on sidewall joints and surfaces without sagging, slumping or running off. It adheres to clean metal, glass, most types of wood, silicone resin, vulcanized silicone rubber, ceramic, natural and synthetic fiber, and painted and many plastic surfaces.
Valco mutli-purpose sealant has good resistance to weathering vibration, moisture, ozone and extreme temperatures. It may be applied in subzero weather without loss of extrusion or physical property characterisitics and is effective to -46°C (-50°F). Fully cured Valco multi-purpose sealant can be used for extended periods at temperatures up to 204°C (400°F), and for shorter periods as high as 218°C (425°F)
2 oz. tube ..... P/N 09-00277 ..... $6.95
7 oz. tube ..... P/N 09-00278 ..... $14.85

VHT FLAMEPROOF COATINGS

Originally designed for NASA's reentry spacecraft, VHT FlameProof is a scientifically formulated compound designed to withstand temps. up to 1500°F (816°C) VHT It survives where other paints can't, shields & protects, maintains the finish, prevents rust & corrosion, and resists oils & solvents. For aircraft applications the typical use is on high temperature steel components such as exhaust & turbocharging systems. Excellent for use as a heat resistant & anti-corrosion coating on exhaust manifolds and turbine casings. Both Flat Aluminum and Flat Black are non-facing colors.
Flat Aluminum 16 oz. aerosol spray ..... P/N 08-00713 ..... $11.75
Flat Black 16 oz. aerosol spray ..... P/N 08-00714 ..... $11.75

BAFFLING MATERIAL

FIBERFRAX

A new material made from washed ceramic fibers with binders added to form a lightweight, flexible asbestos-free insulation. Withstands temperatures to 2300° F. Excellent for aircraft firewalls. Available in 24" wide rolls in 1/16" and 1/8" thicknesses.

1/16" Thick.....P/N 05-02678.....$6.90 Lin ft.
1/8" Thick.....P/N 05-02679.....$10.95 Lin ft.
Discount Less 15% On 50Ft. Per Size

FIBERFRAX HI TEMP COATING

Used as a hi temp coating over Fiberfrax, or other pourus materials. Can also be used as an adhesive to bond Fiberfrax or other pourus material together. Coverage: 15 sq. ft. per pint & 120 sq. ft per gallon.

Fiberfrax Adhesive Pt.....P/N 05-00800..... $23.75
Fiberfrax Adhesive Gal.....P/N 05-00900.....$179.95

NEOPRENE BAR

Neoprene bar of proper Shore hardness for fabrication of shock absorber donuts. Used in Osprey II nose gear. Available in 2 sizes:

1/2" Th x 2" W.....P/N 05-02000.....$12.50/ft.
3/4" Th x 3" W.....P/N 05-02100.....$21.80/ft.

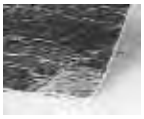
RUBBER SHEET PACKING

Will not deteriorate in petroleum products. Recommended for oil and solvent service. Wt. 6 oz. per sq. ft. 1 Size: 1/16" thick x 36" wide roll. Sold in 36" 1 width only. Price is per Lin. Ft. P/N 05-01000.....$3.95
Discount: Less 15% On 20 Ft.

HEAT-PROOF TAPE

Heat-proof and fire resistant. Made of woven fiberglass. Non-metallic, commercial grade. Withstands up to 1000°F. 2" wide x 1/16" thick. Wt. 4-1/2 lbs. per 100 ft. roll.....P/N 09-31500.....$0.79/ft.
Less 15% On 100 ft.

FIREWALL 2000 CERAMIC BLANKET



This blanket is .250" thick, weighs only 9.5 oz/sq. ft. and is flexible enough to cover compound curves. The heat side of the blanket is covered with stainless steel, the other side is aluminum It is easy to rivet or can be glued into position. Sold by the running foot. Temp. range up to 1000°F.24" wide P/N 05-00948..... $26.85
Less 15% on 25ft. roll

3M™ FIRE BARRIER 2000

A premium nonslump sealant bonds to most common construction material to form a flexible seal. Superior Adhesion. Remains elastomeric and is weather resistant. This product is great for through penetrations and may also be used for fire rated construction joints. P/N 05-00949..... $23.50

FIREWALL 2000 KIT

Contains 24"x48" sheet of Firewall 2000 and one tube of firewall caulk.. P/N 05-00950.....$129.95

FIREWALL BLANKET

Firewall blanket is black in color. Note: This material is used for cosmetic purposes on the inside portion of a firewall to cover up an unsightly firewall. It is not fireproof and is not an actual firewall material. The maximum sheet size is 36" x 48"

36" x 48" sheet.....P/N 09-00276.....$57.25
24" x 48" sheet.....P/N 09-00276-2.....$37.79
12" x 48" sheet.....P/N 09-00276-1.....$18.89

KOOLMAT HEAT BARRIER

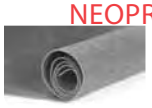
A .070 thick fiberglass textile cured to a 1/8" silicone substrate. The latter providing a good wear resistant surface. Can be used on steel, aluminum, fiberglass, wood and plastic surfaces. It is good to temperatures up to 1000° F and reduces cockpit heat up to 75%. Contains no asbestos. Can be used to insulate cowl and firewall forward area. (Not used on exhaust) Color: gray on top side (silicone) and white woven cloth (fiberglass). Wt: .72 lbs. per sq. ft. Sold in 30" width by the lineal foot. Gray.....P/N 09-24730.....$32.75/lin ft.

ENGINE BAFFLE TEXTURED FINISH

FAA approved replacement Engine Baffle. This material is easily identifiable by its textured finish. 32oz fiberglass reinforcement mat. Boasts a -60 to 550°F range.

Color	Size	Part No.	Price	Size	Part No.	Price
Black	1/8" x 3" x 9'	05-04656	$77.75	1/8" x 36" x 40"	05-04657	$189.50
Red	1/8" x 3" x 9'	05-04658	$106.80	1/8" x 36" x 40"	05-04659	$209.95
Blue	1/8" x 3" x 9	05-04660	$120.75	1/8" x 36" x 40"	05-04661	$209.95

NEOPRENE COATED PYROGLASS CLOTH



This neoprene coated cloth is designed for applications where its superb heat and flame resistance provide an extra margin of protection for people and equipment. Self-extinguishing, it is used as aircraft firewall barriers, protective sleeves and tadpole tape covers, flat seals, gaskets, mounts and door seals. It is ozone and weather resistant, and can be used against caustics, gasoline, oil, water and steam. It does not support combustion and will operate in continuous temperatures from -40°F to +200°F. Thickness .070". Sold in 60" Width only.

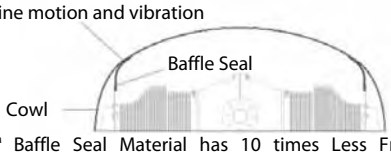
P/N 05-00600..... $59.90 ft.

PRE-CUT PYROGLASS CLOTH BAFFLE STRIP

Cut from Pyroglass cloth above. 3"x 84".....P/N 05-00700.....$20.85

COWL SAVER BAFFLE SEAL MATERIAL

Friction between baffle seal and cowl
transfers engine motion and vibration



Cowl Saver™ Baffle Seal Material has 10 times Less Friction! - One side is silicone and the other is the revolutionary friction free surface unique to the patent pending Cowl Saver™. Cowl Saver™ dramatically reduces the friction between your cowl and baffle seals.

Low Friction Saves You Money! - Reduces transfer of damaging engine vibration to the engine cowl Minimizes cowl chaffing and erosion from baffle seals. Extends baffle seal life. Reduces expensive cowl and cowl fastener repairs. Reduces fatigue and cracking in aluminum baffles and cowl skins.

The cowling even goes on easier! - Unbeatable Performance. Ideal balance of flexibility and stiffness to insure a proper seal. Fiberglass reinforced. Meets industry standard AMS3320G specification. McFarlane quality you can count on! Not FAA-PMA approved

Part Number	Thickness	Size	Color	Spruce	Price
CS085X36X36G	.085"	36" x 36"	Gray	05-03403	$239.00
CS085X18X36G	.085"	18" x 36"	Gray	05-03404	$133.80
CS085X3X108G	.085"	3" x 108 "	Gray	05-03405	$67.80

Accessories

6036 BAFFLE SEAL RETAINER STRIP - A baffle seal retainer strip used as a retainer for riveting baffle seals to baffles. 7/16 inch x 12 inch strips - Cut to desired length during installation.
P/N 05-03399 .....$2.16

RIVET KIT 2 - A baffle seal rivet kit containing soft Mil-Spec rivets that will not deform the baffles. Several sizes are included for various baffle thickness and hole sizes. P/N 05-03401 .....$18.80

BAFFLE-KIT-1 - A convenient kit that includes (1) CS085X3X108G Cowl Saver™ Baffle Seal Material, (1) RIVET-KIT-2 Soft Rivets, (5) 6036 Retainer Strip P/N 05-03402 .....$92.85

BAFFLE-KIT- 2 - This new baffle kit with more material. This kit is best for larger aircraft or curved baffle seals that cannot be cut from three inch strips. The new kit includes (1) 18x36 inch piece of Cowl Saver™ material, (2) Baffle Seal Rivet Kits and (10) Baffle Seal Retaining Strips.
P/N 05-04108 .....$173.85

BAFFLE-KIT- 3 - Part number Baffle-Kit-3 is a convenient kit that includes (1) 3" x 156" (13ft) Cowl Saver™ Material, (1) Baffle Seal Rivet Kit, and (7) Baffle Seal Retainer Strips P/N 05-04557 .....$147.85

INSPECTA-SHIELD
FIRE RETARDANT PENETRANT

Inspecta-Shield is a durable, non-toxic, fire retardant chemical penetrant which when cured and dried, is odorless and colorless. Will retard flame in materials such as fabrics, poly foam, paper, and wood. Will generally last for the life of the product to which it has been applied. Inspecta-Shield is environmentally compatible and will protect surfaces up to 2,200°. These surfaces will retain their color and resist sun rot up to 50% longer. A Class A rated flame retardant that meets F.A.R. 25.853 (a & b). 1qt. spray bottle will treat an area of 150 sq. ft. Can be applied with most garden and household sprayers.

Note: Inspecta-Shield is corrosive to aluminum and other metals. If it comes in contact with metals be sure to wipe off metal and clean thoroughly Qt. .....P/N 09-05760.....$16.50
Gal.....P/N 09-00274.....$63.75

SILICONE SEAL WITH ADHESIVE

A general use silicone with an acrylic sticky backing. Can be used as any silicone seal where a sticky backing is used, such as Battery Box Covers (top), and Baffle anti-chafe (prevent wear between metal baffles and cylinder head fins) Low temp use only: 0 to +300 Thickness is .050"

Size	Part No.	Price
6"x6"	05-04254	$12.50

SEE THE ENGINE PARTS SECTION OF THE CATALOG FOR MORE INSULATION PRODUCTS!

AVTEK SQUEEZE-OUT DOOR SEAL KITS

Door Seal keeps water, cold, wind and noise out of your aircraft. The seal is designed for use on multiple aircraft make/model applications. The -02 is shipped with dual Air-Chambers.The installer can split the chambers using one near the hinges, where gaps are small, use two of three chambers in the rear where the gaps are larger. The -02 is very versatile, and works great on every aircraft, where as the -01 may not. Get the -01/-02 combination kit if you are unsure!

*While the -02 kit contains enough seal material to seal all General Aviation Doors, the purchase of the -02/-02 Kit will give you extra -02 in case something unexpected happens durring installation. Extra can also be used for the baggage door.

Description	Use	Features	Part No.	Price
AvTek Air Chamber Door Seal -02	Recommended for All Aircraft. Fwd-Aft Cabin Doors & Bag Door.	Flex, E/Z Conform Will Not Push Door-Out	05-02198	$118.85
AvTek Thin Seal (Window) -03	Recommended for Cessna & Beech. Use for Windows, Paper-Thin Door-Gaps	Seals When No Other Seal Will	05-02199	$49.75
AvTek Thin Seal (Door) -03	Recommended for All Aircraft. Use for Very Small Gaps in Doors	Seals When No Other Seal Will	05-02201	$79.95
AvTek Thicker Seal (Door)	Recommended for All Aircraft. Seal installed on the door.	Resist Mil-dew, Mold, & Tearing	05-02202	$69.95
Door & Air-frame Air-Seal Kit	The -02/-02 Air-Chambers on both the Door & on the Door-Way work together. Much like Car-Doors do. Compressing and expanding as your door does, for a "Water-Tight" fit.	N/A	05-04105	$129.95

AVTEK GAP SEAL

The "Spring-Steel" reinforcement channel has "Gripper" teeth to hold firmly in place. And when your door is closed the seal is pinched between the airframe. You can not pull the seal out when the door is closed... however applying adhesive into the channel is recommended. Length: 9ft.

P/N 05-02203 ..... $159.75

GAP SEAL

Gap Seal for rudder and elevator of your aerobatic aircraft!Proven and continually tested since 1979. Designed specially for Pitts S-1S, S-1T, S-2A, S-2S, S-2B , S-2C and Christen Eagle aerobatic aircraft. It can also be used on other aerobatic aircraft if the horizontal stabilizer, elevator, vertical fin and rudder spar is made from a 7/8 inch diameter tube with at least 1/8 inch gap and is equipped with strap hinges. Comes in 3 foot strips. It is cut and glued to the trailing edge of the horizontal stabilizer and vertical fin. Any good quality contact cement can be used to bond the Gap Seal. NOTE: The Gap Seal is not designed for tail surfaces that are pin hinged however some homebuilt aircraft (Pitts S-1C) with pin hinges have been used successfully. Typically 3 strips for Pitts S-1, 4 strips for Pitts S-2 and Eagle, 5 strips for Pitts Model 12 P/N 05-04616 ..... $36.75

HOMEBUILDERS GAP SEAL KIT FOR EXPERIMENTAL AIRCRAFT

Designed for experimental aircraft that have been identified as needing gap seals to improve control response and effectiveness. Features transparent, UV stable film with a long aging, acrylic adhesive. Remains flexible down to -40 deg. F. Easy to install with the use of simple hands tools. Kit includes 3M 8674 Film (PN 09-01643), 86A Adhesion Promoter to ensure maximum adhesion, Scotchbrite pad (PN 09-01753) and 3M Application Solution (PN 06-00604)

P/N 05-03480 ..... $90.50

HOPPER SILICONE SEAL

Medium Density silicone sponge material manufactured to meet the MIL-R-46089 C. The material has a Smooth finish to it. 1/2" x 1".

P/N 05-11194 ..... $5.85

SILICONE BAFFLE SEAL

Silicone (reinforced) with fiberglass cloth. Mil spec: AMS3320 Rev. G; Material Thickness: .093 (3/32) O.E.M Spec; Temp Range: -65 to + 550

.093"X3" Scat Orange P/N 05-04717-1 ..... $3.95
.093"X3" Red ..... P/N 05-04717-2 ..... $5.70
.093"X3" Black ... P/N 05-04717-3 ..... $5.75
.093"X3" Medium Blue P/N 05-04717-4 ..... $3.95

PA28 FUEL PUMP BAFFLE SEAL

PA-28 Fuel pump baffle seal. Models: PA28-140, 150, 160, 180 replacement seal for the fuel pump metal baffle that surrounds the fuel pump assembly.

Scat Orange ..... P/N 05-04706-1 ..... $35.75
Red ..... P/N 05-04706-2 ..... $35.75
Black ..... P/N 05-04706-3 ..... $50.00
Dark Blue ..... P/N 05-04706-5 ..... $35.75

BAFFLING MATERIAL

All seals cut to the original pattern based onthe original pattern based on the original design from the manufacturer. Installation kit included and easy to follow instructions. Not FAA Approved.

Application	Color	Part No.	Price
Cessna 150, 152	Orange	05-03525-1	$149.95
	Red	05-03525-2	$151.75
	Black	05-03525-3	$151.75
	Dark Blue	05-03525-5	$136.95
Cessna C172, C175, C177, C172RG, C177RG	Orange	05-03527-1	$223.95
	Red	05-03527-2	$208.95
	Black	05-03527-3	$251.95
	Dark Blue	05-03527-5	$208.95
Cessna C180, C182, C185, C205, C205A, C206, C210	Orange	05-03528-1	$222.95
	Red	05-03528-2	$222.95
	Black	05-03528-3	$222.95
	Dark Blue	05-03528-5	$222.95
Cessna T206, CT-210, P210	Orange	05-03529-1	$250.95
	Red	05-03529-2	$251.95
	Black	05-03529-3	$251.95
	Dark Blue	05-03529-5	$251.95
CessnaL19-0470	Orange	05-03534-1	$251.95
	Red	05-03534-2	$188.95
	Black	05-03534-3	$188.95
	Dark Blue	05-03534-5	$188.95
Cessna C303, C310, C320, C336, C337, P337	Orange	05-03530-1	$502.00
	Red	05-03530-2	$502.00
	Black	05-03530-3	$437.50
	Dark Blue	05-03530-5	$502.00
Cessna C401, C402, C410, C414	Orange	05-03531-1	$428.95
	Red	05-03531-2	$428.95
	Black	05-03531-3	$428.95
	Medium Blue	05-03531-4	$428.95
	Dark Blue	05-03531-5	$428.95
Cessna 421A, 421B	Orange	05-03532-1	$464.95
	Red	05-03532-2	$464.95
	Black	05-03532-3	$465.95
	Dark Blue	05-03532-5	$464.95
Cessna C421C	Orange	05-03533-1	$538.00
	Red	05-03533-2	$536.00
	Black	05-03533-3	$536.00
	Dark Blue	05-03533-5	$536.00
Rockwell 112TC	Orange	05-03558-1	$257.95
	Red	05-03558-2	$268.95
	Black	05-03558-3	$236.95
	Dark Blue	05-03558-5	$268.95
Rockwell 114TC	Orange	05-06876	$393.00
	Red	05-06876-1	$394.00
	Black	05-06876-2	$268.95
	Dark Blue	05-06876-4	$268.95

HIGH QUALITY RUBBER CHANNEL

Good-grade neoprene. Soft, flexible, oil-resisting.

Style B: 1/2" high - right, 3/8" high-left, 1/16" Groove .....05-00596.....$0.97/ft
Style C: 3/8" high, 1/8" groove, 1/4" across bottom.....05-00597.....$1.86/ft
Style D: 1/2" high - left, 3/16" - right 1/32" Groove .....05-00598.....$0.48/ft
Style E: 1-1/8" high, 1/4" lip right side, 1/16" Groove .....05-00599.....$0.98/ft

SILICONE BAFFLE SEALS

Excellent for replacement of baffle seals. It exceeds asbestos type seals in durability and flexibility over its entire operating heat range of -80 F to +425 F..
Available in red, blue & black.

IRON OXIDE RED - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3320 (PN 05-00770, 05-00771-3, 05-00771) AMS3303 for all others.

3/32" thick x 3" wide x 9' long.....P/N 05-00775.....$15.85
3/32" thick x 36" wide.....P/N 05-00781.....$24.60 /ft
3/32" thick x 3" wide.....P/N 05-00781-3.....$1.90 /ft
1/8" thick x 2" wide x 9' long.....P/N 05-00795.....$11.95
1/8" thick x 3" wide x 9' long.....P/N 05-00755.....$19.85
1/8" thick x 4" wide x 9' long.....P/N 05-00760.....$29.75
1/8" thick x 36"wide.....P/N 05-00772.....$25.50 /ft
1/8" thick x 2" wide.....P/N 05-00772-2.....$1.40 /ft
1/8" thick x 3" wide.....P/N 05-00772-3.....$2.30 /ft
1/8" thick x 4" wide.....P/N 05-00772-4.....$3.35 /ft
1/8" thick x 3"W x 9' w/ fiberglass insert.....P/N 05-00770.....$38.75
1/8" thick x 36"W w/ fiberglass insert.....P/N 05-00771.....$51.25 /ft
1/8" thick x 3" wide w/ fiberglass insert.....P/N 05-00771-3.....$4.35 /ft

LIPSTICK RED - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303.

3/32" thick x 36" wide.....P/N 05-00786.....$27.75 /ft
3/32" thick x 3" wide.....P/N 05-00786-3.....$2.40 /ft

DARK BLUE - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303.

3/32" think x 3" wide x 9' long.....P/N 05-03055.....$18.80
3/32" thick x 3" wide.....P/N 05-01831-3.....$2.45 /ft
3/32" thick x 36" wide.....P/N 05-01831.....$29.25 /ft

BLUE - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303.

3/32" thick x 3" wide x 9' long.....P/N 05-00790.....$16.85
3/32" thick x 36" wide.....P/N 05-00806.....$25.00 /ft
3/32" thick x 3" wide.....P/N 05-00806-3.....$1.95 /ft
1/8" thick x 3"W x 9' w/ fiberglass insert.....P/N 05-00792.....$41.50
1/8" thick x 36"W w/ fiberglass insert.....P/N 05-00791.....$46.80 /ft
1/8" thick x 3" wide w/ fiberglass insert.....P/N 05-00791-3.....$4.70 /ft

BLACK - Meets Mil Spec ZZR765B. ISR3 meets Mil Spec AMS3303 (PN 05-00810, 05-00811, 05-00811-3) AMS3320 for all others.

3/32" thick x 3" wide x 9' long.....P/N 05-00810.....$17.65
3/32" thick x 36" wide.....P/N 05-00811.....$22.90 /ft
3/32" thick x 3" wide.....P/N 05-00811-3.....$1.95 /ft
1/8" thick x 3"W x 9' w/ fiberglass insert.....P/N 05-00826.....$39.85
1/8" thick x 36"W w/ fiberglass insert.....P/N 05-00825.....$54.80 /ft
1/8" thick x 3" wide w/ fiberglass insert.....P/N 05-00825-3.....$4.55 /ft

ASSORTED SILICONE 50 FEET - This is a 50 foot assortment of silicone lengths, thicknesses and colors.....P/N 05-04565.....$37.25

AIRCRAFT BAFFLE SEAL KITS

These pre-cut baffle seal kits are cut to original specifications. Please specify aircraft make, model, serial number, and color of seal. Kits are furnished with rivets, washers, drill bits, & silicone.

CALL FOR PRICE AND P/N OF KIT FOR YOUR AIRCRAFT or
VISIT www.aircraftspruce.com FOR BAFFLE KIT INFORMATION.

BAFFLE FASTENER KIT

Makes attaching baffle material much easier. Includes 12 soft aluminum fasteners.

Pkg. of 12 Sets.....P/N 05-01829..... $10.50

COWL SEAL HARDWARE & TOOLS

GB4-4A: Baffle Seal Pop Rivet, Button Head. 1/8" Dia. x 3/16" Grip Requires a metal baffle strip or back-up washer to secure.
Pkg. of 100 ..... P/N 05-56100 ..... $7.85

GB-A4: Back-up Washers Pkg of 150 ..... P/N 05-56130 ..... $5.90

GB-SF- 3/16: Baffle Seal Fastener (Post Type) for joining sides or overlapping of baffle material. Includes one male and one female piece. 1/8" NPT. Each ..... P/N 05-56140 ..... $0.90

GB4-3AW: Baffle Seal Pop Rivet, Button Head, White. 1/8" Dia. x 3/16"Grip. Pkg. of 100 ..... P/N 05-00132 ..... $6.50

GBL4-4A: Baffle Seal Pop Rivet, Large Flange, Silver. 1/8" Dia. x 3/16"Grip Qty. 100..... P/N 05-00134 ..... $6.85

GBL4-4AB - Black Pop Rivet, large flange for black baffle seal 1/8" x 3/16" grip. GBL4-4AB. Qty 100..... P/N 05-00483 ..... $7.25

GBL4-3AW: Baffle Seal Pop Rivet, Large Flange, White. 1/8" Dia. x 3/16"Grip Qty. 100..... P/N 05-00135 .....$10.50

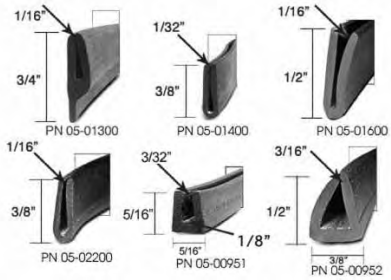
Silicone Revolving Punch Tool: Makes various size holes in baffle material. Each ..... P/N 72 ..... $9.90

CESSNA COWL CHAFE SEAL

This seal is riveted to the firewall on the Cessna 150, 152, 172, and 182. Meets MIL SPEC: AMS3320-.093 black. 1-1/2" wide x 84" long. P/N 05-04489..... $37.50

U CHANNEL

BLACK 65 DURO EPOM U-CHANNEL.



Use CRL Glass and Acrylic Setting Rubber Channels if you have acrylic or glass panels you need to protect. Our Glass Setting Rubber Channels will provide you with the product you need. Available in multiple sizes for most applications.

Sold per foot

Groove	Height	Complete Roll Length	P/N	Price
1/16"	3/4"	12 Ft.	05-01300	$1.23
1/32"	3/8"	15 Ft.	05-01400	$0.31
1/16"	1/2"	25 Ft.	05-01600	$1.15
1/16"	3/8"	100 Ft.	05-02200	$1.35
1/8"	5/16"	50 Ft.	05-00951	$0.92
3/16"	1/2"	50 Ft.	05-00952	$1.65

OPEN CENTER CHANNEL

1/2" Legs 3/4" Curve 3/8" Radius
Made in 12' Lengths -
#4.....P/N 05-01500 .....$1.69 Ft.

Neoprene sponge rubber 1/4-round door seal. Hollow core makes a better seal. Manufactured in 25 Ft. lengths. Sold per foot #7..... P/N 05-01700..... $1.85 Ft

SILICONE P-SEAL 50 DURO

Silicone P-seal 50 duro for battery box application/lighter wall thickness 1-1/2 x 5/8 bulb. Sold by foot.
Use GBL4-4AB large flange (black) pop rivets to install (PN 05-00483). P/N 05-04704..... $7.50

ANTI-CHAFE MOLDING

Anti-Chafe Molding for fuel tank straps. Neoprene channel accommodates metal straps 1" wide.
#9.....P/N 05-01800..... $1.33 ft

"V" STRIP

"V" Strip Canopy Channel 20 Ft. required for Long-EZ.
#10 .....P/N 05-01900.....$0.80 ft

QUARTER ROUND DOOR SEAL

Hollow Quarter round door seal. Medium density sponge material. Use 1100-2 contact cement.
BA-10012 .....P/N 05-11173.....$3.85 ft

CESSSNA/PIPER QUARTER ROUND DOOR SEAL

Constructed of a medium density solid sponge material that offers excellent compression ability and resiliency when installed correctly. Use 1100-2 contact cement.
RB-5022 .....P/N 05-11193.....$4.95 ft

QUARTER ROUND SOLID DOOR SEAL - Closed cell black neoprene with smooth outer surface. 1/2" Legs, 3/4" Curve, 1/2" Radius. 25 ft. Roll
P/N 05-00000 .....$28.75

PIPER DOOR SEAL - Small cell sponge rubber. 25 foot rolls JM189139. P/N 05-00010.....$62.50

BAGGAGE DOOR SEAL - Flexible small cell sponge rubber seal used on many aircraft baggage doors. Packaged in 25 foot rolls. 25 ft. Roll
P/N 05-00020 .....$59.85

PIPER WING ROOT SEAL - Black packaged in 12-foot lengths, adequate for one wing root. 12 ft. Roll
P/N 05-00030 .....$47.50

BEECH WING ROOT SEAL - Black, packaged in 12-foot lengths, adequate for one wing root. 12 ft. Roll
P/N 05-00040 .....$59.75

J-3, PA-18 DOOR GAP SEAL - 24" length Standard color, black. P/N 05-00953 .....$15.75

Note: The above moldings are not FAA approved.

BAGGAGE DOOR SEAL BEECH 19, 23, 24

Revolutionary new seal design! Custom made from a special hybrid rubber compound, the new seal is superior to any seal on the market. The seal comes with pressure-sensitive adhesive to make the installation easier. The kit includes door seal, seal lube, installation instructions, engineering drawing, and Instructions for Continued Airworthiness (ICA). Seals, create an airtight and water tight closure. P/N 05-04639..... $54.75

CHAFE SEAL - DOOR SEALS

AP

EPDM WEATHERSTRIP

Self-adhesive rubber strip, made in Sweden of 100% EPDM rubber. Resistant to aging, weather, ozone, ultraviolet sun rays and many chemicals and solvents. Retains resilience at low temperatures (to - 45°F). Excellent for all types of weatherstripping and canopy installations. Furnished in three sizes

P-STRIP - Furnished in full rolls as a double-width strip which splits in the middle to give two single-width P-strips as illustrated. 17 Ft. Roll 1/4" thick x 3/8" wide. COLOR: WHITE P/N 05-01200 ..... $8.65 Ea.

D-STRIP WEATHERSEAL - 17' Roll 5/16" thick x 23/64" wide. (2) 8-1/2' strips. P/N 05-00897 .....$8.50

ALL STRIP WEATHERSEAL - 10' Roll 5/16" thick x 19/64" wide. P/N 05-00898.....$12.65 Ea.

BEECHCRAFT COWL DOOR CHAFE SEAL

A Complete set of black silicone chafe seal for the upper cowl doors for Beech models 33, 35, 36. 3/8" wide X .020 thick. Kit includes silicone cement.
P/N 05-00665.....$57.75

BEECHCRAFT NOSE GEAR CHAFE SEAL

A Complete set of black silicone nose gear door seals designed to keep the nose gear doors from chafing against the airframe. Fits models 33, 35, 36. Kit includes silicone cement. .....P/N 05-00666..... $54.75

BEECHCRAFT MAIN LANDING GEAR DOOR CHAFE SEAL

A Complete set of black silicone chafe seals cut to the original design. These seals are cemented to the underside of the wing to reduce the chafing of the main landing gear doors when closed.
P/N 05-00667.....$49.95

BEECHCRAFT TAIL ROOT SEAL

A set of two tail root seals for models 33–36.
P/N 05-00669.....$99.85

BEECHCRAFT RUDDERVATOR SEAL

A set of two ruddervator seals for model 35.
P/N 05-00670.....$63.99

BEECHCRAFT UPPER WING SEAL

Includes 2 (12ft) Upper Wing, 2 lower wing seals and 4 oz of cement. (2). Applicable models: 33, 35, 36, 55, 58.
P/N 05-00668.....$173.90

SILICONE AIRBOX & HEATER SEAL

This fiberglass reinforced silicone seal (1/16" thick) makes an excellent replacement for various airbox and heater box seals used in a variety of aircraft. Furnished as a 6" x 6" piece; Black. P/N 05-00662.....$13.70

BLACK SILICONE P SEAL WITH 5/8" BULB

This seal makes an excellent replacement for felt type seals or other neoprene P-seals found in various aircraft. Overall size is 1-3/8" with a 5/8" bulb. Similar to Cessna #S2729-1.Note: Use GBL4-4AB large flange (black) pop rivets to install (PN 05-00483).
P/N 05-00663.....$9.65/ft.

SILICONE ANTI-CHAFE SEAL

Anti-Chafe Seal AMS3303-.032. Silicone, Black, 1-1/2" wide x 15' long. Silicone Anti-Chafe Material: Mooney and Early Cessna Models. Piper: Malibu and Mirage. Replaces the use of Teflon Tape. Reduces vibration on the cowling, reduces wear on the contact surfaces. Seals the aircraft cowl from rain and water. Can also be used for fuel straps. Silicone cement must be used to install silicone based seals. Silicone Cement required for Installation.
Black 1 Inch.....P/N 05-06916..... $17.85
Black 1-1/2 Inch.....P/N 05-06917..... $25.65

BLACK SILICONE P SEAL WITH 7/8" BULB

This seal makes an excellent replacement for felt type seals or other neoprene P-seals sound in various aircraft. Overall size is 1-3/8" with a 7/8" bulb. Sold by the foot. Note: Use GBL4-4AB large flange (black) pop rivets to install (PN 05-00483). P/N 05-02144.....$11.50/ft.

BEECHCRAFT T34 CANOPY SEALS

AMS 3303 silicone seal -65 to +350 for Beechcraft T34 Canopy Seals. Package includes: • 1 ea Canopy Seal 50.0 Long • 2 ea. Canopy Bumper Seal 21.0 Long • 2 ea Canopy Bumper Seal 48.0 Long P/N 05-04247..... $119.50

BEECHCRAFT STORM WINDOW SEAL

19/23/24/33/35/36/50/55/58/76/77/95 Series Window Seal, Storm Window.(Framless)
P/N 05-03613.....$21.75

COWLING CHAFE CLOTH

Off-white, 100% non-asbestos woven tape. Unaffected by most chemicals and temperatures. 1" x 15 ft. Roll
P/N 09-31800 .....$13.95 rl

GB56 SILICONE ANTI-CHAFE COWL SEAL

The kit includes: 15 Foot Roll with Adhesive, Anti-Chafe Seal and Catalyst.Sold in 15ft. rolls..... P/N 05-00664 ..... $62.75

A-56-12 COWL CHAFE SEAL 3/4"

Phenolic-cure Nigen Cotton Webbing used on engine cowls to protect where overlapping the airframe. Not affected by cold, heat or most solvent chemicals. 1/16" thick.
P/N 05-11171 ..... $78.65

SILICONE CEMENT FOR SILICONE SEALS

This silicone cement is the same cement that is included with some of the chafe seals and is excellent for attachment of any silicone seal. 2 oz. .....P/N 05-00996.....$34.50
4 oz. .....P/N 05-04555.....$45.50

SOLID 1/4 ROUND DOOR SEAL

This is a solid 1/4 round seal it is 5/8"x5/8". It is manufactured to meet the MIL-R-6130C-type 2 neoprene spec. and the FAR.25.853-B burn spec. Use T-990 precleaner and 1100-2 glue to install it. P/N 05-04753 .....$5.25/ft.

BEECH FRAMED SILICONE FOAM DOOR SEAL

Original Design. Fits 33-35-36-50-55-56TC-58-95 and includes Door Seal, Silicone Cement, Acid Brush, pair of Gloves and a Razor. P/N 05-10740 ..... $64.85

BEECHCRAFT TAIL ROOT SILICONE SEAL

AMS3303 silicone seal temperature range -65 to +350. Beechcraft tail root seal. 15 foot length.
P/N 05-00669 .....$99.85

PIPER/MOONEY DOOR SEALS

Developed from a special rubber compound that meets military specifications and FAA requirements for aircraft seals. Has a memory, compresses and conforms to the sealing surface providing a perfect seal. Comes with pressure sensitive adhesive that makes it easy to apply and bonds well with any metal surface painted or bare. Installs in the channel on the fuselage opening. Provides for an air- and water-tight seal. Detailed instructions, an engineering drawing for installation of the new seal, including instructions for adjustment of the door as well as removal of the old seal from the door(s). Please call or visit our website for additional photos and models.

Description	Part No.	Price
PA-28 Front Entry Door	05-01240	$86.75
PA-28 Rear Baggage Door	05-01241	$49.95
PA-32 Front Entry Door	05-01242	$86.75
PA-32 Front Baggage Door	05-01243	$58.85
PA-32 Rear Entry Door w/Cargo Door	05-01245	$97.75
PA-34 Front Entry Door	05-01240	$86.75
PA-34 Front Baggage Door	05-01247	$51.75
PA-34 Rear Entry Door w/Cargo Door	05-01248	$97.75
Mooney Aft Baggage Door	05-04859	$54.75
Mooney Storm Window Seal	05-02483	$21.65
Mooney Front Entry Door - Not Recommended for years 1998 - 2009.	05-03626	$128.85
Mooney All MK20 Series Front Entry Door	05-04858	$86.75

PIPER AIRCRAFT FRONT MOUNTED DOOR SEAL

Piper Aircraft Front Mounted Door Seal P301-1.
Nearly a year of development and testing went into creating this revolutionary new Entry Door Seal for aircraft. Custom extruded from a special hybrid rubber compound, the new seal is superior to any seal on the market.
P 301-1 Seal for PA 28/32/34 .....P/N 05-03628 .....$138.99
P 301-23 Seal for PA 28/32/34.....P/N 05-06859 .....$137.50
See our website for application chart.

CESSNA DOOR SEALS

The new seal installed on the fuselage enables the door to fully close and be air and water tight. The new seals are FAA-PMA certified for all Cessna single engine aircraft including the 336 and 337 twins.
Cessna Entry Door Seal .....P/N 05-01610 ..... $86.75
Cessna Window Seal .....P/N 05-01611 ..... $54.75
Cessna Baggage Door Seal .....P/N 05-01612 ..... $54.75
Cessna AFT ENT/CARGO Door Seal .....P/N 05-01613 ..... $97.75
Cessna 207 Front Bag Door Seal.....P/N 05-01614 ..... $54.75

SILICONE GLUE - This pure silicone lubricant will greatly improve the life and sealing ability of door seals and rubber gaskets.
P/N 05-04641 .....$3.95

BAGGAGE COMPARTMENTS

Our Baggage Compartments are custom designed and manufactured to provide your aircraft with a sturdy and attractive area for storing baggage, books, charts, etc. If your aircraft is not listed, please send us the old baggage compartment to use as a pattern for a new one. Available in two colors: off-white or olive drab canvas.

Note: Complete the part number with color choice. Use -1 for off-white, -2 for olive drab, -3 for tan, or -4 for grey. Baggage Compartments are special order & non-returnable

Aircraft	Part No.	Price
Aeronca 7AC	09-17265-	$35.50
Aeronca 11AC	09-17270-	$136.95
Cessna 120/140*	09-17275-	$160.95
Cessna 150*	09-17280-	$156.95
Cessna 172*	09-17285-	$162.95
Cessna 310*	09-17290-	CALL
Ercoupe	09-17295-	$113.95
Fairchild 24	09-17300-	$128.95

Aircraft	Part No.	Price
Luscombe 8A	09-17302-	$66.75
Piper J3	09-17305-	$33.00
Piper J4	09-17307-	$69.50
Piper J5	09-17310-	$58.50
Piper PA12	09-17312-	$89.75
Stearman	09-17315-	$47.85
Taylorcraft	09-17317-	$43.25

PLIOBOND

Pliobond #20 is a viscous, quick setting highly versatile adhesive. Bonds metal; wood, plastics, fabrics; ceramics, glass, vulcanized rubber, paper, leather and concrete. Thin with MEK.

1/2 Pt. Brush Top Can ..... P/N 09-28000 ..... $9.50
Pt. Can ..... P/N 09-28100 ..... $15.85
Qt. Can ..... P/N 09-28200 ..... $25.85

PLIOBOND 25 LV

Pliobond #25 LV is a viscous, quick setting highly versatile adhesive. Bonds metal; wood, plastics, fabrics; ceramics, glass, vulcanized rubber, paper, leather and concrete. Thin with MEK.

Attention: This product meets the Volatile Organic Compounds (VOCs) requirements & is approved for sell, purchase & use in the CA, CT, DC, DE, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VA.

1/2 Pint ..... P/N 09-03812 ..... $10.95
Pint ..... P/N 09-03813 ..... $18.95
Quart ..... P/N 09-03814 ..... $33.50

MAP POCKET

10' elastic mouth, square black vinyl pocket mounted on fiberboard. Includes hardware. ..... P/N 09-17415 ..... $65.75

TAIL WHEEL BOOTS

To keep your aircraft components clean from contamination by dust, grime and dirt, install these quality covers made from black vinyl. No mounting hardware included.

Cessna 195 ..... P/N 09-17350 ..... $43.25
Staggerwing ..... P/N 09-17352 ..... $105.95
Stearman ..... P/N 09-17355 ..... $79.50

CESSNA 150 STEERING LINKAGE COVERS

Linkage Covers for the Cessna 150 Steering Cover. Not FAA Approved. ..... P/N 09-04051 ..... $25.75

PIPER SHOCK BOOTS / COVERS

To keep your aircraft components clean from contamination by dust, grime and dirt, install these quality covers made from black vinyl. No mounting hardware included.

Aircraft	Description	Qty	Part No.	Price
PA-22	1 Pc. Control Column Boot	Each	09-17410	$19.50
PA-25	Gate Control Rod Boot	Each	09-17357	$39.75
J-3	Piper Shock Boots	Pair	09-17360	$59.25
PA-25	Gate Control Rod Boot	Each	09-17375	$16.75
PA-25, SN25-2000 to -4171	Shock Strut Boots, pair	Pair	09-17377	$39.50

MISCELLANEOUS BOOTS / COVERS

Aircraft	Description	Qty	Part No.	Price
Aeronca 7AC	Joy Stick Covers	Pair	09-17362	$22.75
Cessna172 (also fits 182)	Steering Linkage Covers	Pair	09-17365	$19.00
Citabria	Interior Boots	Each	09-17367	$38.00
Beech Bonanza	Gear Boots for Main Gear	Pair	09-17370	$38.00
Beech Bonanza	Dust Boot for Retractor Nose Gear	PAIR	09-17372	$27.50

SEAT SLINGS

These canvas slings are available in Off-White or Olive Drab. All seat slings include front and rear slings except:

Aeronca 65CA 1pc
Piper J-3 ..... 3 pcs
PA-22 ..... 1 pc
PA-12 ..... 3 pcs
Taylorcraft ..... 1 pc

Note: Complete Part Number with color. Use -1 for Off White or -2 for Olive Drab.

Aircraft	Part No.	Price
Aeronca 65CA	09-17320-	$128.95
Bellanca	09-17322-	$67.00
Citabria	09-17325-	$122.95
KR-1 & 2	09-17327-	$61.00

Aircraft	Part No.	Price
Piper J-3	09-17330-	$69.25
Piper J-5	09-17332-	$100.95
Piper PA-12	09-17335-	$100.95
Piper PA-22	09-17337-	$95.75
Taylorcraft	09-17340-	$126.95

WINDLACE INTERIOR DOOR SEAL WELT

1/2" diameter vinyl covered material that provides additional sealing and ornamental edging for the door opening. The windlace is mounted between door post structure and upholstery panels or trim. Install with sheet metal screws. Black color only.

P/N 09-00281 ..... $8.50 / ft.

ANTIQUE PIPER WING ROOT FRAME COVERS

This cover is constructed of a lightweight stiffener panel, 1/2" foam padding and headliner fabric. A flap extends into the back side of the wing root frame and glues in place for a professional finish. P/N 09-17345 ..... $84.75

3M™ SUPER WEATHERSTRIP ADHESIVE

For adhering all types of rubber weatherstripping to metal. Light colored adhesive, very fast drying, exceptional bonding strength. Can be used for adhering vinyl trim head liners and side panels.

5 oz. tube, #8001 ..... P/N 09-27200 ..... $6.95

3M™ FAST TACK TRIM ADHESIVE

This general purpose adhesive is used for bonding trim fabrics, floor mats, and rugs. Features quick tacking quality, does not bleed through fabric, and remains rubbery and flexible. Doesn't dry hard. Excellent for upholstery repairs. 5 oz. tube, #8031 ..... P/N 09-27210 ..... $10.80

3M™ GENERAL TRIM SPRAY ADHESIVE

This convenient sprayable adhesive is used for bonding a variety of trim fabrics. It is non-misting, very strong, light colored, and has a controllable spray pattern.

19.75 oz. Aerosol Can ..... P/N 09-28330 ..... $18.50

3M™ SCOTCH GRIP RUBBER ADHESIVE

This fast drying adhesive develops strength very quickly. It has excellent heat resistance; temperature performance is from -5 to 300°F. Meets specification requirements of MIL-A-1154C. Bonds neoprene, reclaim, SB-R, and butyl rubber to metal, wood, most plastics, and many other products. #1300L Qt Can

P/N 09-27220 ..... $45.50

GORILLA CLEAR REPAIR TAPE

Features the strength of Gorilla Tape in a weatherproof, airtight, crystal clear tape. Fix, patch, seal, hold, and protect almost any surface with a crystal clear appearance for a perfect fix every time. P/N 09-04029 ..... $5.95

AERO-SEAL CEMENT

Designed for door seals and moldings. Adheres rubber to wood, other rubber, fiberglass or metal. 4 oz. brush-top container. P/N 05-00955 ..... $12.85

AP

HEADLINERS - INTERIOR MATERIALS

AP

HEADLINERS

A sagging or torn headliner can make even the nicest airplane look unattractive and worn out. Headliners are actually quite inexpensive and easier to replace than many pilots realize. Our headliners are professionally manufactured and every headliner set comes with complete instructions. Available in Excell stretchable vinyl or wool. Specify fabric type and color as noted below the chart.Headliners are special order & non-returnable.

Aircraft	Part No.	Price
Aeronca		
7AC	09-17454	$179.95
11AC	09-17455	$187.95
15AC	09-17456	$233.95
Chief 65CA	09-17458	$134.95
Chief LA65	09-17460	$134.95
L-3 Defender	09-17462	$143.95
Bellanca Scout		
w/Greenhouse	09-17464	$125.95
Super Viking 1730	09-17466	$181.95
Cessna		
120/140	09-17468	$234.95
150 (59)	09-17470	$111.95
150 (60)	09-17472	$125.95
150 (61-63)	09-17474	$125.95
150 (64-65)	09-17475	$94.75
150 (66-68)	09-17476	$111.95
150 (69)	09-17478	$111.95
170A	09-17480	$197.95
170B	09-17481	$281.95
172 (56-58)	09-17482	$189.95
72 (59-60)	09-17484	$161.95
72 (61-62)	09-17485	$161.95
172 (63-70)	09-17486	$120.95
175	09-17488	$147.95
180	09-17490	$161.95

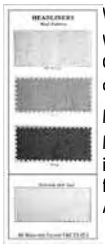
Aircraft	Part No.	Price
Cessna		
182 (56)	09-17492	$189.95
182 (57-59)	09-17494	$189.95
182 (60-61)	09-17495	$161.95
182 (62, Omnivision)	09-17496	$125.95
185 (75)	09-17498	$161.95
206/207	09-17510	$152.95
210 (75)	09-17512	$179.95
310	09-17514	$359.95
Citabria		
w/Greenhouse	09-17515	$125.95
w/o Greenhouse	09-17516	$143.95
Commonwealth		
Skyranger	09-17518	$224.95
Fairchild		
24	09-17520	$171.95
Maule		
M4	09-17522	$206.95
M5	09-17524	$196.00
Piper		
J-4 Coupe	09-17525	$134.95
PA-121/J-5*	09-17526	$170.95
PA-14	09-17528	$152.95
PA-15 Vagabond	09-17530	$161.95

Aircraft	Part No.	Price
Piper		
PA-16 Clipper	09-17532	$129.95
PA-18 Super Cub	09-17534	$105.95
PA-20/22 (51-52) 6 bows, 2 zippers	09-17535	$143.95
PA-20/22 (52-58) 8 bows, 3 zippers	09-17536	$179.95
Colt 108	09-17538	$161.95
PA-23/250 (early 1960)	09-17540	$252.95
PA-242 (thru 1965)	09-17542	$287.95
PA28/323	09-17544	$235.95
Stinson		
1084	09-17546	$180.95
10A	09-17548	$189.95
105-HW75	09-17550	$189.95
Taylorcraft		
BC12	09-17552	$242.95

* 1 Specify round or square windshield Round: S/N 12-01 thru 12-2903.-2907, -2914, -2915, -2917, -2925, -2950, -3028-S, -3901 -3902, -3903; Square: S/N 12-2904 and up except those listed above.

Note: Complete Part No. with Fabric & Color. Excell stretchable vinyl off white -1, wool off white -2, Tan -3, Gray -4.

HEADLINER FABRIC SWATCH SAMPLE



Wool Fabrics

Wool headlining fabrics are available in Off White, Tan or Grey. The fit is in the quality of the workmanship, therefore it can be made to conform to almost any curve.

Mellohide VFR

Mellohide VFR vinyl has a unique four-way stretch which easily eliminates tension wrinkles and produces a smooth, professional finish. Backing and facing aremildrew resistant.

All materials exceed FAR 23-853

P/N 09-02004 ..... FREE

FIREWALL SETS

Vinyl outside, backed with 1/4" closed-cell insulation. If your aircraft is not listed, please send us your current firewall set to use as a pattern.

1-Piece Bulkhead Firewall

Aircraft	Part No.	Price
Aeronca 11AC	09-35910	$134.95
Cessna 120/140	09-35915	$134.95
Piper PA20/22	09-35925	$134.95
Piper PA18	09-35930	$134.95
Piper PA28/140	09-35935	$134.95

CITABRIA

Bulkhead and wrap-around pad 3 piece set.

P/N 09-35950 ..... $229.95

LUSCOMBE 8A & 8E

Please specify model. Also specify if 8A is with or without dishpan. If "with dishpan", specify if round or oblong.

Standard ..... P/N 09-35940 ..... $134.95

With Dishpan ..... P/N 09-35945 ..... $132.95

UPHOLSTERY HARDWARE

82° CSK Washer

Size 4 ..... P/N 04-00393 ..... $0.06 Size 6 ..... P/N 04-00394 ..... $0.05

82° Oval Head Screw

4x1/2 - A-OV ..... P/N O4X8 ..... $0.03 6x1/2 - A-OV ..... P/N O6X8 ..... $0.04

6x3/3 -A-OV ..... P/N O6X12 ..... $0.04 6x1 ..... P/N O6X16 ..... .$0.05

Snap Studs - Males snaps attached to self-tapping phillips head screws. For canopies

#7 x 3/8" ..... P/N 04-01520 ..... .$0.35

#7 x 5/8" ..... P/N 13-03296 ..... .$0.10

HEADLINER WOOL

This is a quality versatile wool headlining fabric. Wrinkles can be removed by applying water in a fine mist then using heat, such as a hair dryer, allowing wool to shrink. This gives a nice tight fit. Colors: Off-white, tan and gray. Complete P/N with color choice using (-2) for Off white, (-3) for tan, or (-4) for gray. 54 inches wide; sold by the yard.

P/N 09-17566-X ..... $29.25/yd.

3M™ HEADLINER CEMENT

Headliner, rubber & gasket adhesive.

Quart ..... P/N 09-17570 ..... $37.85

SUPER TRIM ADHESIVE #1081

A high temp high strength contact type adhesive. Bonds metal, foam, decorative laminates, fabrics, headliners. Variable width spray pattern. Meets Fed. Spec. MMM-A-130B.

16.5 Oz. Can P/N 09-42652 ..... $7.50 ea.

HEADLINER EXCELL STRETCHABLE VINYL

Unique four-way stretch that easily eliminates tension wrinkles, producing a smooth professional finish. Backing and facing are mildew resistant. 54" width. Color: Off white.

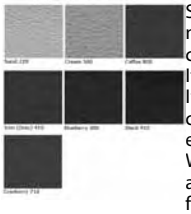
P/N 09-17564 ..... $25.80/yd.

FELT

All wool, 1/4" thick felt for paddings. Firm but resilient construction for many aircraft applications. Gray/ brown mix. NOTE: Sold in Full 36" Width only. Sold per foot.

P/N 09-31600 ..... $16.75/Lineal Ft.

FAUX LEATHER UPHOLSTERY MATERIAL



Superior Panel Technology's offers the latest technology in Faux Leather without the leather cost. It can be used for seats, wall panels and headliners. It meets FAR 23.853(a) flammability requirements. It provides superior wear resistance (100,000 cycles), stretchable (which is great for headliners), abrasion resistance and excellent tailorability. Width is 54", weight is 28 oz/linear yard and it is available in seven colors. See additional image for color chart or download PDF below. Pricing is per linear yard. Request the sample by color number. Burn certificate is included with each order.

Faux Upholstery			Color Samples		
Color	Part No.	Price	Color	Part No.	Price
Sand 220	11-10641	$42.00	Sand 220	11-11140	FREE
Cream 500	11-10651	$45.75	Cream 500	11-11143	FREE
Coffee 800	11-10649	$42.00	Coffee 800	11-11141	FREE
Iron (Gray) 410	11-10638	$45.75	Iron (Gray) 410	11-11145	FREE
Blueberry 600	11-10642	$42.00	Blueberry 600	11-11146	FREE
Onyx Black 910	11-10656	$45.75	Onyx Black 910	11-11142	FREE
Cranberry 710	11-10652	$44.80	Cranberry 710	11-11144	FREE

3M™ LEADING EDGE TAPES - PROTECTIVE BOOTS

3M™ 8672 POLYURETHANE PROTECTIVE TAPES

3M™ Polyurethane Protective Tape 8672 is made from a tough abrasion resistant polyurethane elastomer that resists punctures, tearing, abrasion and erosion. It is formulated for resistance to ultraviolet light. Polyurethane Protective Tape 8672 provides a simple, easy method of protecting a surface from corrosion, abrasion and minor impact damage. It can be installed in a minimum amount of time with simple tools. It can be painted or applied over painted surfaces. Polyurethane Protective Tapes 8672 and 8672 GB are constructed with a long-aging, solvent resistant, pressure sensitive acrylic adhesive that is protected with an easy release paper liner. Polyurethane Protective Tape 8672 is a transparent tape with a paper liner on the adhesive side.
Please visit our website for application instructions.

W	L	Color	Description	Part No.	Price
1″	12yd	Gloss Black	3M™ 8672 Tape	09-01636	$15.99
1″	12yd	Clear	3M™ 8672 Tape	09-01632	$21.85
2″	12yd	Gloss Black	3M™ 8672 Tape	09-01637	$31.70
2:	12yd	Clear	3M™ 8672 Tape	09-01633	$41.50
3″	12yd	Gloss Black	3M™ 8672 Tape	09-01638	$59.85
4″	12yd	Gloss Black	3M™ 8672 Tape	09-01639	$61.75
4′	12yd	Clear	3M™ 8672 Tape	09-01635	$85.75
6″	18yd	Gloss Black	3M™ 8672 Tape	09-02104	$206.95
1″	36yd	Clear	3M™ 8672 Tape	09-00841	$76.75
2″	36yd	Clear	3M™ 8672 Tape	09-20140	$142.75
3″	36yd	Clear	3M™ 8672 Tape	09-00843	$217.95
4″	36yd	Clear	3M™ 8672 Tape	09-20145	$286.95
6″	36yd	Clear	3M™ 8672 Tape	09-00845	$398.50
1″	36yd	Gloss Black	3M™ 8672 Tape	09-00842	$73.75
2″	36yd	Gloss Black	3M™ 8672 Tape	09-00811	$142.75
3″	36yd	Gloss Black	3M™ 8672 Tape	09-00844	$199.75
4″	36yd	Gloss Black	3M™ 8672 Tape	09-00812	$269.95
6″	36yd	Gloss Black	3M™ 8672 Tape	09-00846	$397.95

3M™ 8674 POLYURETHANE PROTECTIVE TAPES

3M™ Polyurethane Protective Tape 8674 is made from a tough abrasion resistant polyurethane elastomer that resists punctures, tearing, abrasion and erosion. it is formulated for resistance to ultraviolet light. Polyurethane Protective Tape 8674 provides a simple, easy method of protecting a surface from corrosion, abrasion and minor impact damage. It can be installed in a minimum amount of time with simple tools. It can be painted or applied over painted surfaces. Polyurethane Protective Tape 8674 is constructed with a long-aging, solvent resistant, pressure sensitive acrylic adhesivethat is protected with an easy release poly liner. This tape is a transparent film and available in 2 liner configuration: Protective Tape 8674 has a single poly liner on the adhesive side. Protective Tape 8674DL has dual liners, one on each side of the tape. The adhesive side has a poly liner, and the liner on the top of the urethane tape is polyester.

W	L	Color	Description	Part No.	Price
1″	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01642	$20.50
1″	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00847	$79.75
2″	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01643	$41.50
2″	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00813	$148.75
3″	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01644	$61.75
3″	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00849	$220.95
4″	12yd	Clear	3M™ 8674 Lead Edge Tape	09-01645	$82.75
4″	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00814	$276.95
6″	36yd	Clear	3M™ 8674 Lead Edge Tape	09-00850	$449.00

AP

3M™ POLYURETHANE PROTECTIVE BOOTS

3M™ Polyurethane Protective Boots SJ8665 are pre-formed and used extensively in private, commercial and military aircraft to fit the complex curvatures of a variety of applications. These boots are designed to help provide long lasting protection of randomes, wing and stabilizer tips, landing gear pods, composite parts, and other portions of aircraft from rain, moisture ingression, UV light, insects, sand, sleet, snow, and most other airborne particle erosion damage. The boots are part of a 3M family of high performance surface protection products available for various aerospace applications worldwide.

Boot Application	3M P/N	Our P/N	Price
Aero Commander			
500-1000, Radome	FP-20	09-00854	$282.95
Aerostar			
601 P Radome	FP-127	09-00856	$338.95
Beechcraft			
Baron Norton Radom (Honeycomb)	FP-55	09-00857	$395.00
Baron Non-Honeycomb (#58-410015-613)	FP-68	09-00858	$304.00
Baron Honeycomb Nose (#58-410017-603)	FP-69	09-00859	$418.00
Beech/Mitsubishi Diamond Radome	FP-84	09-00860	$385.95
Duchess Radome	FP-129	09-00861	$195.95
90,100,200,1300,1900,Most King Air, 65/ A65,70,80, A80,B80,U-8F, U-21A	FP-5	09-00863	$510.00
99	FP-35	09-00864	$201.95
1900& King Air Series Vertical Fairing Dome	FP-173	09-00865	$232.95
Bombardier			
Learjet 23,24,25,Radome (PN2411241-1)	FP-7-1	09-00866	$289.00
Learjet 33, 36 Wing Tip	FP-13-1	09-00867	$289.00
Learjet M-45 Navigational Lens Ass'y	FP-195-1	09-00868	$266.95
Learjet M-45 Radome	FP-174-1	09-00869	$397.00
Learjet 50, 55, 60, (PN5411212-1)	FP-14-1	09-00870	$298.95

Boot Application	3M P/N	Our P/N	Price
Cessna			
208 Wing Mounted Radome	FP-34	09-00871	$299.95
208 Prop Spinner	FP-87	09-00872	$439.95
310K-Q w/Norton Rad, 320, 310R (#4096)	FP-90	09-00875	$309.00
310q w/Norton Radome PN4131	FP-130	09-00876	$299.95
310R w/Norton Radome PN4096	FP-114	09-00877	$297.00
Citation S, I, II, IV, V	FP-29	09-00878	$299.00
Citation II, IV, VII	FP-70	09-00879	$439.95
210 Centurian,182,206,337 w/Wing Pod	FP-126	09-00880	$318.00
425-441 Series Radome	FP-41	09-00881	$284.95
Piper			
Aztec (Turbo) "C" non Coleman/Apache	FP-143	09-00882	$201.95
Aztec E-F Radome	FP-136	09-00884	$420.95

3M™ POLYURETHANE PROTECTION TAPE APPLICATION SOLUTION.

A pre-mixed, water-based solution for applying 3M Polyurethane Protective Tape and Boots. Solution is provided pre-mixed in a ready to use squirt bottles. Allows wide width and contoured performed boots to be easily installed. P/N 06-00604 .....$46.50

3M™ TAPE ADHESION PROMOTER 86A & CLOTH

Tape Adhesion Promoter 86A is intended for use in enhancement of 3M Polyurethane Protective Tape adhesion levels to certain types of surfaces. It is most effective when used over polyurethane enamel surfaces. .....P/N 06-00605 .....$59.99
Adhesion Promoter Cloth (Sold Each).....P/N 05-03479.....$17.50

3M POLYURETHANE 8561 / 8562 PROP TAPE

Note: For Experimental Aircraft Only
Clear 2" wide polyurethane tape stretches to conform to curved or straight leading edges without wrinkling. Thick for greatest protection from any in the field applied surface.
** Sold by the foot.
.008" Thick x 2" Wide.....P/N 15-05829.....$1.71
.014" Thick x 2" Wide.....P/N 15-04832.....$1.95

LEADING EDGE TAPE - WINGWALK

LEADING EDGE TAPE

Clear plastic tape with adhesive backing for application to wing and tail leading edges for protection against nicks caused by stones and gravel. 100 Ft. Rolls.

Width	Color	P/N	Price/ roll
2"	Clear	09-31610	$13.90
3"	Clear	09-31615	$17.50
4"	Clear	09-31620	$21.80
6"	Clear	09-31625	$33.80

3M™ POLYURETHANE LEADING EDGE TAPE

Designed to help protect light aircraft from the damaging effects of rain, insects, sand, snow and sleet. A tough durable, protective tape for exposed surfaces. 3M #8672 Polyurethane Protective Tape is designed to help protect the leading edges of aircraft wings, struts, and horizontal and vertical stabilizers from airborne particle damage. Versions of this tape are used extensively for surface protection in both military and commercial aircraft applications. May be applied to clean metal or to commonly used aircraft paints over metal or fabric. Not to be used on props, helicopter rotors or balanced surfaces such as elevators or ailerons. Clear in color. Sold in full rolls only.

2" wide.....P/N 09-20140.....$142.75
4" wide.....P/N 09-20145.....$286.95

MD FOAM TAPE

An excellent canopy seal which helps stop vibration. Recommended for use on Quickie. Size: 3/8" thick x 1/2" wide x 10 ft. P/N 05-01100.....$2.45

3M™ DUCT TAPE

A general-purpose gray cloth tape with good adhesive qualities.

2" x 60 Yd. Roll..... P/N 09-30900 ..... $11.90

MASKING TAPE

Armak general or 3M purpose crepe masking tape. Long shelf life.

1/4" x 60 yd. Roll .....P/N 09-20101 ..... $1.74 ea.
1" x 60 Yd. Roll.....P/N 09-20100 ..... $2.70 ea.

CLOTH TAPE

Has many uses in aircraft maintenance work. Strip over sharp corners to protect fabric. Strips under doped fabric will prevent fabric from sticking to parts. Pressure-sensitive adhesive backing. Easily applied, easily removed.1" x 60 Yd. Roll P/N 09-17100....$10.50

GORILLA TAPE

Camouflages repairs on white surfaces, and won't yellow outdoors due to its superior UV resistance. Perfect for both indoor and outdoor use with its superior UV resistance and ability to grip to rough, uneven, unforgiving surfaces like wood, stone, stucco, plaster, brick and more. 30 yard rolls.

Standard Width .....P/N 09-04091 .....$7.75
Tough and Wide .....P/N 09-04092 .....$11.75

GLASS STRAPPING TAPE

A pressure-sensitive transparent acetate film tape reinforced with glass strands. Possesses high tensile strength (375 lbs./inch width) and good impact strength. Especially effective for carton sealing applications.

#RG-2A, 3/4" x 60 Yd. Roll.....P/N 09-31200 .....$3.50

POLYPROPYLENE TAPE

A pressure-sensitive transparent polypropylene plastic tape for packaging & edging. Outstanding stretchiness/conformability. Waterproof, flame, abrasion and solvent resistant.

#371, 2" x 110 Yd. Roll.....P/N 09-31300 .....$1.93

RESCUE TAPE

Rescue Tape is a self-fusing silicone repair product with infinite uses. Most versatile and easy to use emergency repair product available. You can repair leaks on plumbing and hoses in a flash, use for electrical wiring or as shrink wrap, wrap tool handles, and much, much more. Incredible 700 PSI Tensile Strength, Insulates 8,000 Volts per layer, Withstands 500° F Degrees of heat! (260° C) ~ Remains flexible to -85° F! (-60° C), Creates a Permanent Air-Tight, Water-Tight Seal in seconds, Resists Fuels, Oils, Acids, Solvents, Salt Water, Road Salt, UV Rays.

Description	Color	Part No.	Price
Rescue Tape Standard Roll 1"x12'x.020"	Red	01-00989	$9.95
Rescue Tape Standard Roll 1"x12'x.020"	Black	01-00990	$9.95
Rescue Tape Standard Roll 1"x12'x.020"	Clear	01-00991	$9.95
Rescue Tape Industrial Roll 2"x36'x.030"	Black	01-00992	$39.95
Rescue Tape Industrial Roll 2"x36'x.030"	Red	01-00993	$39.95

NON-SKID WING WALK TAPE

The non-skid adhesive tape is excellent for wing walk applications. The clear is perfect for pilots wishing their step areas to blend in, not stand out. This tape meets all applicable Mil Specs and has superior adhesion qualities. Sold by linear foot.

24" Wide Clear .....P/N 09-31685 .....$4.90
6" Wide Clear.....P/N 09-31645 .....$1.35
24" Wide White.....P/N 09-31680 .....$5.35

ULTRA WING WALK COATING

Developed exclusively for Aircraft Door Seals by a major chemical company, this phenomenal new wing walk coating reduces the chance of slipping when climbing up on the wing. Unlike the mundane wing walk coating found on most aircraft, ULTRA WING WALK is a fast-drying polyurethane-based semi-gloss black coating with fine particles of rubber that adds class to any plane..... P/N 05-04366 ..... $38.85

3M™ SAFETY WALK SHEET

A durable, mineral coated, non-slip fabric for wing walks. Waterproof, weatherproof and unaffected by vibrations, heat, cold, gasoline or oil. Assures safe footing. Pressure-sensitive backing should have additional coating of Pliobond to assure adhesion for aircraft applications. Sold by lineal foot.

12" Width (3M) ..... P/N 09-32250 .....$5.35 /Ft.
1/2 pt. ..... P/N 09-28000 ..... $9.50
1 pt..... P/N 09-28100 .....$15.85
1 qt..... P/N 09-28200 .....$25.85

3M ™ SAFETY-WALK™ TAPE

High-friction, fine-resilient textured, slip-resistant material. Reverse side coated with pressure-sensitive adhesive protected by a removable liner. Good for wet, barefoot traffic areas. Clear vinyl, light duty, 12 inches wide. Sold by the linear foot.

12" wide Clear .....P/N 09-31650 $5.25
6" wide White .....P/N 09-31655 $2.75
12" wide White..... P/N 09-31660..... $5.40
6" wide Black..... P/N 09-31665..... $2.81
24" wide Black ..... P/N 09-31675..... $9.95

RAC WING WALK

RAC wing walks are not made from the usual, sandpaper-like material, which can decompose and scratch both the wing surface and your knees. Instead, they use a low profile, synthetic rubber, that combines a comfortable feel with good gripping power.The RAC wing walk comes pre-cut to 26 1/2" x 9 1/2". Installation is easy with the aggressive, self-adhering backing. Each wing walk comes rolled in its own, 4"x4"x10" box and installation instructions are also provided with each box. Black

P/N 09-28210 .....$22.50 ea.

HEAVY DUTY WING WALK

This is a Heavy duty Non-Skid or Wing Walk material that must be glued in with a heavy duty contact cement, it is used to prevent falls and slips on slippery surfaces and give added traction when needed it is able to be used on steps, wings and many other places around the airplane or hangar. 24" x70"

P/N 05-11172 .....$138.75

AN900 GASKETS

AN900 (MS35769) annular copper-asbestos gaskets are suitable for temperatures up to 500° F. and pressures up to 200 PSI. Ring width is 1/8"; thickness is 3/32.

AN900 Dash No.	MS35769 Dash No.	I.D. (In.)	Price Each	AN900 Dash No.	MS35769 Dash No.	I.D. (In.)	Price Each
-3	-1	3/16	$2.20	-17	-24	1-1/16	$0.88
-4	-2	1/4	$2.40	-18	-26	1-1/8	$0.77
-5	-5	5/16	$1.89	-19	-29	1-3/16	$1.31
-6	-6	3/8	$0.62	-20	-31	1-1/4	$0.65
-7	-8	7/16	$0.51	-21	-33	1-5/16	$1.75
-8	-9	1/2	$0.89	-22	-35	1-3/8	$1.64
-9	-10	9/16	$0.87	-23	-38	1-7/16	$8.75
-10	-11	5/8	$0.48	-24	-39	1-1/2	$1.10
-11	-13	11/16	$0.77	-25	-41	1-9/16	$1.71
-12	-15	3/4	$0.88	-26	-42	1-5/8	$1.84
-13	-17	13/16	$0.66	-27	-46	1-11/16	$7.50
-14	-18	7/8	$0.58	-28	-48	1-3/4	$0.96
-15	-20	15/16	$2.10	-29	-51	1-13/16	$1.58
-16	-21	1	$0.44	-30	-52	1-7/8	$2.75

Discount Less 20% For 100 Per Size

AN900 GASKET KIT

144 piece kit of copper crush washers in common sizes. Complete with durable plastic case with dividers and size chart. P/N 05-02220.....$139.95

AN901 O-RINGS

AN901 tube connection seals are fabricated from type1100 alum., H14 temper.

Discount Less 20% For 100 Per Size

AN901 Dash No.	Tube O.D.	Price Each	AN901 Dash No.	Tube O.D.	Price Each
-4A	1/4	$0.98	-8A	1/2	$0.36
-5A	5/16	$0.35	-10A	5/8	$1.34
-6A	3/8	$0.34	-12A	1-1/16	$1.35
-4C	1/4	$1.15	-10C	6/8	$4.16
-5C	5/16	$6.50	-12C	1-1/16	$8.50
-6C	3/8	$2.84			

MS28778 TUBE FITTING BOSS GASKET (FORMERLY AN6290)

Straight-thread tube fitting boss gaskets are used to provide a seal between straight-thread fittings, such as AN815, and ports of instruments with female straight threads instead of the more common female tapered pipe threads.

Dash No.	Tube O.D.	Price Ea.	Dash No.	Tube O.D.	Price Ea.
-2	1/8	$0.81	-6	3/8	$0.68
-3	3/16	$0.61	-8	1/2	$0.95
-4	1/4	$0.49	-10	5/8	$0.57
-5	5/16	$0.53			

AN931 ELASTIC GROMMETS (MS35489)

Flexible grommets, made of black synthetic rubber to specification MIL-G-3036. Resistant to hot oil & coolant. Used to protect tubing, wiring and control cables where they pass through bulkheads & firewalls.

PN	MS35489	ID	OD	Hole Size	Thickness	Price
AN931-2-9	-2	1/8	3/4	9/16	3/16	$0.25
AN931-2-16	-3	1/8	1-1/4	1	1/4	$0.87
AN931-3-5	-4	3/16	7/16	5/16	3/16	$0.13
AN931-3-9	-134	3/16	3/4	9/16	3/16	$0.54
AN931-4-7	-6	1/4	5/8	7/16	3/16	$0.14
AN931-4-12	-7	1/4	1	3/4	1/4	$0.64
AN931-4-16	-8	1/4	1-1/4	1	1/4	$0.48
AN931-5-9	-9	5/16	13/16	9/16	5/16	$0.19
AN931-5-12	-10	5/16	1	3/4	5/16	$1.02
AN931-6-10	-11	3/8	7/8	5/8	5/16	$0.33
AN931-6-16	-12	3/8	1-1/4	1	1/4	$0.40
AN931-7-11	-13	7/16	15/16	11/16	5/16	$0.31
AN931-8-13	-14	1/2	1-1/16	13/16	5/16	$0.26
AN931-8-20	-15	1/2	1-1/2	1-1/4	1/4	$0.39
AN931-9-13	-16	9/16	1-1/16	13/16	5/16	$0.35
AN931-10-14	-17	5/8	1-1/8	7/8	5/16	$0.41
AN931-10-20	-18	5/8	1-1/2	1-1/4	1/4	$1.10
AN931-11-16	-19	11/16	1-5/16	1	3/8	$0.39
AN931-12-17	-20	3/4	1-3/8	1-1/16	3/8	$0.38
AN931-12-20	-135	3/4	1-5/8	1-1/4	1/4	$1.12
AN931-12-23	-21	3/4	1-13/16	1-7/16	3/8	$1.68
AN931-14-20	-22	7/8	1-5/8	1-1/4	7/16	$0.84
AN931-16-22	-23	1	1-3/4	1-3/8	7/16	$0.85
AN931-20-38	-25	1-1/4	2-3/4	2-3/8	7/16	$5.90

O-RINGS

O-rings give effective sealing over wide ranges of pressure, temperature, and movement, with the advantage of sealing pressure in both directions and reducing friction and wear on moving parts. The use of O-rings as gaskets or static seals permits metal-to-metal contact and allows almost unlimited pressures under extreme vibration. All 0-rings should be lubricated before installation and constant lubrication should be provided for running seals to avoid excessive wear. Avoid sharp edges, threads, and cross-drilled ports over or through which rings must be installed. AN6227B and AN6230B 0-rings are manufactured to Spec. MIL-P 25732 for use in hydraulic systems using MIL-0-5606 hydraulic oils. MS28778 O-rings meet Spec. MIL-P-5510A and are suitable for MIL-0-5606 hydraulic fluid at 160° F.

AN6227B Dash#	Dimensions (In.) W	I.D.	O.D.	Price Each	AN6227B Dash#	Dimensions (In.) W	I.D.	O.D.	Price Each
1	1/16	1/8	1/4	$0.23	24	1/8	1-5/16	1-9/16	$0.38
2	1/16	5/32	9/32	$0.20	25	1/8	1-3/8	1-5/8	$0.56
3	1/16	3/16	5/16	$0.23	26	1/8	1-7/16	1-11/16	$0.52
4	1/16	7/32	11/32	$0.22	27	1/8	1-1/2	1-3/4	$0.55
5	1/16	1/4	3/8	$0.20	28	3/16	1-1/2	1-7/8	$0.90
6	1/16	5/16	7/16	$0.21	29	3/16	1-5/8	2	$0.78
7	1/16	3/8	1/2	$0.23	30	3/16	1-3/4	2-1/8	$0.86
8	3/32	3/8	9/16	$0.21	31	3/16	1-7/8	2-1/4	$0.87
9	3/32	7/16	5/8	$0.25	32	3/16	2	2-3/8	$1.07
10	3/32	1/2	11/16	$0.23	33	3/16	2-1/8	2-1/2	$0.99
11	3/32	9/16	3/4	$0.26	34	3/16	2-1/4	2-5/8	$1.09
12	3/32	5/8	13/16	$0.26	35	3/16	2-3/8	2-3/4	$1.12
13	3/32	11/16	7/8	$0.26	36	3/16	2-1/2	2-7/8	$1.34
14	3/32	3/4	15/16	$0.26	37	3/16	2-5/8	3	---
15	1/8	3/4	1	$0.38	38	3/16	2-3/4	3-1/8	$1.18
16	1/8	13/16	1-1/16	$0.41	39	3/16	2-7/8	3-1/4	$1.30
17	1/8	7/8	1-1/8	$0.33	40	3/16	3	3-3/8	$1.56
18	1/8	15/16	1-3/16	$0.39	41	3/16	3-1/8	3-1/2	$1.69
19	1/8	1	1-1/4	$0.38	42	3/16	3-1/4	3-5/8	$1.55
20	1/8	1-1/16	1-5/16	$0.41	43	3/16	3-3/8	3-3/4	$1.30
21	1/8	1-1/8	1-3/8	$0.43	44	3/16	3-1/2	3-7/8	$1.93
22	1/8	1-3/16	1-7/16	$0.43	45	3/16	3-5/8	4	$1.92
23	1/8	1-1/4	1-1/2	$0.53	46	3/16	3-3/4	4-1/8	$1.54

See www.aircraftspruce.com for MS28775-026 thru MS28755-131 O-Rings.

AN6230B Dash #	Dimensions (In.) W	I.D.	O.D.	Price Each	AN6230B Dash #	Dimensions (In.) W	I.D.	O.D.	Price Each
1	1/8	1-5/8	1-7/8	$0.64	6	1/8	2-1/4	2-1/2	$0.88
2	1/8	1-3/4	2	$0.70	7	1/8	2-3/8	2-5/8	$0.95
3	1/8	1-7/8	2-1/8	$0.73	8	1/8	2-1/2	2-3/4	$0.93
4	1/8	2	2-1/4	$0.73	9	1/8	2-5/8	2-7/8	$1.15
5	1/8	2-1/8	2-3/8	$0.85	10	1/8	2-3/4	3	$1.14

See Page 981 for AN/MS O-Ring Equivalent Chart.

AN/MS O-RING KIT

This AN/MS O-Ring Kit includes over 382 O-rings made of Nitrile Buna N 70 duro material. These rings have a temperature range of -6 to 275°F and are for use with petroleum oils and fluids. Size range in kit is 0 through 30.(O-Ring Set An6227B-1, -30) .....P/N 05-02210..... $86.75

AS568A O-RING KIT

- 70 Duro Nitrile
- 382 O rings
- Great kit for the homebuilder
- Sizes: -06 to -32

P/N 13-02804 ..... $21.85

MS29513 FUEL RESISTANT O-RINGS

These MS29513 series O-rings are resistant to fuel and are ideal for applications such as fuel injection connections and primers. A small amount of fuel proof grease applied to these O-rings helps the installation and operation of primers. Not resistant to automotive fuels.

Part Number	Nominal Size I.D.	O.D.	W	Price Each
MS29513-005	3/32	7/32	1/16	$0.32
MS29513-006	1/8"	1/4"	1/16"	$0.24
MS29513-007	5/32"	9/32"	1/16"	$0.23
MS29513-008	3/16"	5/16"	1/16"	$0.24
MS29513-009	7/32"	11/32"	1/16"	$0.26
MS29513-010	1/4"	3/8"	1/16"	$0.20
MS29513-011	5/16"	7/16"	1/16"	$0.26
MS29513-012	3/8"	1/2"	1/16"	$0.26
MS29513-031	1-3/4"	1-7/8"	1/16"	$0.59
MS29513-110	3/8"	9/16"	3/32"	$0.25
MS29513-111	7/16"	5/8"	3/32"	$0.25
MS29513-112	1/2"	11/16"	3/32"	$0.27
MS29513-113	9/16"	3/4"	3/32"	$0.29
MS29513-114	5/8"	13/16"	3/32"	$0.32
MS29513-115	11/16"	7/8"	3/32"	$0.29
MS29513-116	3/4"	15/16"	3/32"	$0.29
MS29513-337	3"	3-3/8"	3/16"	$2.34
MS29513-338	3-1/8"	3-1/2"	3/16"	$1.72

TIE RODS - GROMMET EDGING

AP

BRUNTON TIE RODS

These high quality aircraft wires and terminals are manufactured in Scotland by Bruntons Aero Products who first originated streamline wires in 1909. They feature the stronger rolled threads and are available in high polish or satin finish. Material is 316 high tensile stainless steel. Wires are also available in BSF or metric threads. Special wires with combination streamline and round section commonly used for biplane roll wires or seaplane float installations are available. Wires are manufactured to AN specifications and are 100% proof loaded. Wires ordered with terminal assemblies are supplied assembled. Quality certifications are provided with all orders.

Aircraft tie rods carry tensile loads for bracing wings, tail assemblies as well as float installations. They may be ordered separately or with terminal assemblies (AN665 terminal, clevis pin, jam nut, cotter pin). AN specs define thread lengths as well as a fixed difference in length between rod length and pin center length (K). Order pin center lengths ONLY when AN665 terminals are used on both ends of the wire. All other installations must order rod length. Due to fluctuations in international exchange rates, the prices of Brunton tie rods are subject to change. We guarantee the lowest prices and fastest delivery on all Brunton tie rods. Request current pricing. Allow 8-10 weeks for delivery of Brunton tie rods.

STREAMLINE TIE RODS

AN Number	Size & Thread	Diameter Inches	Thread Length (IN.) RH	Thread Length (IN.) LH	K	Minimum Strength Pounds
AN671AC-	6-40	.138	1 3/4	1 1/4	1 1/4	1,200
AN673AC-	10-32	.190	1 7/8	1 3/8	1 1/2	2,400
AN674AC-	1/4-28	.250	2 1/8	1 5/8	1 7/8	4,200
AN675AC-	5/16-24	.3125	2 1/4	1 3/4	2 1/8	6,900
AN676AC-	3/8-24	.375	2 3/8	1 5/8	2 1/4	10,000
AN677AC-	7/16-20	.4375	2 5/8	2 1/8	2 1/2	13,700
AN678AC-	1/2-20	.500	2 7/8	2 3/8	2 7/8	18,500
AN679AC-	9/16-18	.5625	3 1/8	2 5/8	3 1/4	24,000
AN680AC-	5/8-18	.625	3 3/8	2 7/8	3 1/2	29,500
AN682AC-	3/4-16	.750	3 3/4	3 1/4	4 3/8	42,000

CALL FOR CURRENT PRICING!

ROUND TIE RODS

AN Number	Size & Thread	Diameter Inches	Thread Length (IN.) RH	Thread Length (IN.) LH	K	Minimum Strength Pounds
AN701AC-	6-40	.138	1 3/4	1 1/4	1 1/4	1,000
AN703AC-	10-32	.190	1 7/8	1 3/8	1 1/2	2,100
AN704AC-	1/4-28	.250	2 1/8	1 5/8	1 7/8	3,400
AN705AC-	5/16-24	.3125	2 1/4	1 3/4	2 1/8	6,100
AN706AC-	3/8-24	.375	2 3/8	1 7/8	2 1/4	8,000
AN707AC-	7/16-20	.4375	2 5/8	2 1/8	2 1/2	11,500
AN708AC-	1/2-20	.500	2 7/8	2 3/8	2 7/8	15,500

CALL FOR CURRENT PRICING!

SEALS-IT GROMMET SEALS

Grommet seals have many applications. In race cars they serve to keep unwanted smoke and fumes from entering the driver's area while protecting lines from chafing and abrading on rough surfaces. In hot rods and custom car applications, they provide the perfect "finishing touch" to all through panel installations. Wiring, fuel and oil lines, air and liquid hoses, and all other lines that make up your rod or custom, can make an otherwise detailed installation look unfinished. Seals-It grommet seals add the well-organized, professional appearance you want. Grommet seals also have many other applications including: marine, commercial equipment, motor homes, etc.

Grommet Seal 1 Hole Series			
Dia.	Hole	P/N	Price
1.5"	n/a	05-02493	$12.70
2.0"	n/a	05-02494	$12.80
3.0"	n/a	05-02495	$22.50
3.0"	.250	05-02496	$15.95
3.0"	.375	05-02497	$15.95
3.0"	.500	05-02498	$15.95
3.0"	.625	05-02499	$15.95
3.0"	.750	05-02501	$15.90
3.0"	.950	05-02502	$15.90
3.0"	1.180	05-02503	$15.95
4.0"	n/a	05-02504	$26.20
4.0"	1.00	05-02505	$35.00
4.0"	1.80	05-02506	$26.20
4.5"	1.50	05-02507	$44.70
4.5"	2.12	05-02508	$51.60
6.0"	n/a	05-02509	$44.50

Grommet Seal 2 Hole Series			
Dia.	Hole	P/N	Price
All Rubber Blank 5-1/4"		05-02510	$42.50
1-1/2"	2.125	05-02511	$42.50
2 Hole Blank 5-1/4"		05-02512	$42.50
2 Hole Blank 5-1/4"		05-2519	$42.50
1/4"	2.750	05-02520	$42.50
3/8"	2.750	05-02521	$42.50
1/2"	2.750	05-02522	$42.50
5/8"	2.750	05-02523	$42.50
3/4"	2.750	05-02524	$42.50
1"	2.750	05-02525	$42.50
.700	3.625	05-02526	$43.10

SPRING-FAST® GROMMET EDGING

SL Series | BAP Series | MS22529/1 | MS22529/2

Spring-Fast® Composite Grommet Edging covers sharp edges of panels that come in contact with witre and cables and mechanically lock on indefinitely with finger pressure in only seconds per foot. They provide a significant time reduction in assemblies. A long-term reliability solution that replaces nylon caterpillar plastic gromments and associated solvents, adhesives, and ancillary materials to protect critical equipment from failure due to wire chaffing.

Spring-Fast® Grommet Edging is approved by the FAA and U.S. Department of Defense per NASM 22529/a and NASM 22529/2 for all aircraft applications. Meets FAR 25.853 for flammability and MIL 1344 for shock and vibration. Spring-Fast® is available for 8 different sheet thickness ranges from 0.025 to 0.260 and can be purchased in either 10 piece packs of 12.75" long pieces, or 25 or 100-foot reels. Use Spring-Fast® BAP and SL series for flanged lightning hole and three-axis contours. The BAP Series Flexi-Grommet is perfect for roll formed edges and small lightening holes. Where wires are routed in the same plain as the sheet metal, the Spring-Fast® SL Series provides a trim characteristic for all edges with or without cabling nearby.

MFG Number	Sheet Thickness	Package Size	Our P/N	Price Ea.
M22529/2-1R	.025-.036	Per Foot	05-00673	$5.50
M22529/2-1C-10PK	.025-.036	10pcs/12.75"l	05-00674	$59.85
M22529/2-2R	.036-.063	Per Foot	05-00675	$5.50
M22529/2-2C-10PK	.036-.063	10pcs/12.75"l	05-00676	$59.85
M22529/2-3R	.059-.074	Per Foot	05-00677	$5.50
M22529/2-3C-10PK	.059-.074	10pcs/12.75"l	05-00678	$59.85
M22529/2-4R	.070-.093	Per Foot	05-00679	$5.50
M22529/2-4C-10PK	.070-.093	10pcs/12.75"l	05-00680	$59.75
M22529/2-5R	.090-.111	Per Foot	05-00681	$5.65
M22529/2-5C-10PK	.090-.111	10pcs/12.75"l	05-00682	$59.75
M22529/2-6R	.105-.134	Per Foot	05-00683	$5.50
M22529/2-6C-10PK	.105-.134	10pcs/12.75"l	05-00684	$75.50
M22529/2-7R	.178-.198	Per Foot	05-00685	$6.50
M22529/2-7C-10PK	.178-.198	10pcs/12.75"l	05-00687	$86.75
M22529/2-8R	.240-.260	Per Foot	05-00688	$7.95
M22529/2-8C-10PK	.240-.260	10pcs/12.75"l	05-00690	$87.75

See aircraftspruce.com for our complete selection of grommet edging

BAP SERIES GROMMET EDGE

Spring-Fast® BAP Flexi Wire Protection Grommet® Series has all the attributes of the "T" and "BT" Series grommet edging, but has greater gripping strength for severe shock and vibration environments with 4-axis flexibility. Heat continuous to 185°F (85°C) Low Temperature to -40°F (-40° C) High Corrosion Resistance UL94 V-0 Flammability Rating Superior Dielectric Strength High Shock and Vibration Resistance to rms G 41.7 Multi-axis flexibility for rounded inside and outside corners Continuous Edge Protection on Flanged Holes, 1/8" or greater Inside Radius and 1/4" or greater Outside Radius.

SL SERIES GROMMET EDGE

Sold by the foot or in a 10 foot roll. Spring-Fast® SL Series plastic trim has similar attributes of the "AP" and "BAP" Series grommet edging. Features: Substrate: Stainless Steel, Flammability rating: UL94 V-0, RoHS Compliant, DFARS Compliant, Multi axis flexibility, Heat continuous to 185ºF (85ºC), Low temperature to -40ºF (-40ºC), Indoor or outdoor use

High gripping strength, High corrosion resistance, High dielectric strength, High shock and vibration resistance per rms G 41.7, Multi-axis flexibility for rounded inside and outside corners, Continuous edge protections on flanged holes, 1/8" or greater inside radius and 1/4" or greater outside radius. Color: Black

SEE WWW.AIRCRAFTSPRUCE.COM FOR SL AND BAP SERIES P/N'S & PRICING

SPRING-FAST® INSTALLATION PRODUCTS

Description	Part No.	Price
DTI Shears 830 PS	05-04446	$33.75
Grommet Scale 860GSB	05-04448	$17.50
Roller Installation Tool 840R	05-04449	$17.50

SPECIAL SPRING-FAST FULL BYPASS CUT-OFF SHEARS

P/N 05-00689 ..... $29.50

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AN100 CABLE THIMBLES

Made of cadmium plated steel or stainless steel per procurement specification MIL T-5677. Used to form sturdy eye end on control cable. Form cable around thimble and secure with Nicopress sleeve.

Cadmium Plated Steel Thimbles			Cable Size	Stainless Steel Thimbles		
AN Part No.	Price Each	Price Per 100		AN Part No.	Price Each	Price Per 100
AN100-3	$0.16	$12.80	1/16"	AN100C-3	$0.25	$20.00
AN100-4	$0.13	$10.40	3/32",1/8"	AN100C-4	$0.24	$19.20
AN100-5	$0.19	$15.20	5/32"	AN100C-5	$0.44	$35.20
AN100-6	$0.20	$16.00	3/16"	AN100C-6	$0.48	$38.40
AN100-7	---	---	7/32"	AN100C-7	---	---
AN100-8	$0.39	$31.20	1/4"	AN100C-8	$1.09	$87.20
AN100-12	$0.98	$78.40	3/8"	AN100C-12	$3.75	$300.00

AN111 CABLE BUSHINGS

Made of cadmium plated steel. Used in same manner as AN100 cable thimble.

Dash No.	Cable Size	Price Ea.
-3	1/16", 3/32"	$1.84
-4	1/8"	$2.25
-5	5/32"	$2.45
-6	3/16"	$3.55

Less 20% for 100

AN115 CABLE SHACKLES

Made of cadmium plated forged steel per specification MIL-S-5675.

AN 115 Dash No.	Shackle Strength Lbs.	Cable Size	Used With		Price Each
			Thimble	Clevis Pin	
-8	800	1/16"	AN100-3	AN393-9	$13.65
-21*	2100	3/32", 1/8"	AN100-4	AN393-11	$10.85
-32	3200	5/32"	AN100-5	AN394-15	$22.75
-46	4600	3/16"	AN100-6	AN395-17	$39.90

*Replaces AN115 - 16.
DISCOUNT: Less 10% for 12, 15% for 25, 20% for 50 or more. May be assorted.

WIRE ROPE SLEEVES (MS51844)

Oval shaped copper sleeves used in making eye or lap splices in flexible cable. Sleeves are slipped over the two strands of cable to be fastened and are then compressed with special Nicopress hand squeezers. Provides a bond that is even stronger than a standard splice. "18" Series sleeves are plain copper and "28" Series sleeves are zinc plated.

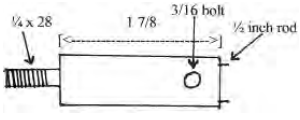
Part No	Nicopress Ref.	Cable Dia.	Matl./Finish	Price	
				Each	100
MS51844-42	18-1-C	1/16"	Copper/Plain	$0.05	$4.25
MS51844-43	18-2-G	3/32"	Copper/Plain	$0.20	$17.00
MS51844-44	18-3-M	1/8"	Copper/Plain	$0.32	$27.20
MS51844-45	18-4-P	5/32"	Copper/Plain	$0.60	$51.00
MS51844-46	18-6-X	3/16"	Copper/Plain	$0.77	$65.45
MS51844-22	28-1-C	1/16"	Copper/Zinc	$0.06	$4.80
MS51844-23	28-2-G	3/32"	Copper/Zinc	$0.13	$10.40
MS51844-24	28-3-M	1/8"	Copper/Zinc	$0.53	$42.40
MS51844-25	28-4-P	5/32"	Copper/Zinc	$0.59	$47.20
MS51844-26	28-6-X	3/16"	Copper/Zinc	$0.80	$64.00

STOP SLEEVES

These copper stop sleeves are used on the ends of bare cables.

Cable Dia.	Model No.	Part No.	Price Ea.
1/16"	ST2-2	04-00899	$0.38
3/32"	ST2-3	04-00901	$0.44
1/8"	ST2-4	04-00902	$0.47
5/32"	ST2-5	04-00903	$0.59
3/16"	ST2-6	04-02061	$0.70

ROD END SWIVEL BEARING



Permanently lubricated in-line swivel for rod end bearing or clevis fork. For applications where rod needs to swivel in a rotary motion to reduce binding while maintaining a straight line to control or stabilizer rod. For use on 1/2" rod and will fit 1/4" x 28 female rod end or clevis fork.

P/N 05-01021 ..... $23.85

NAS287 TERMINAL CHAIN

NAS287-25-3 3/32" cable size ..... P/N 04-02064 ..... $17.75
NAS287-25-2 1/16" cable size ..... P/N 04-02032 ..... $11.75
NAS287-35-4 1/8" cable size ..... P/N 04-02065 ..... $15.75

AN481 CLEVIS FORK ROD ENDS (MS27976)

Manufactured of 1035 or 1042 carbon steel and cadmium plated. Minimum tensile strength 65,000 PSI. For welding to steel tubing or riveting to aluminum tubing. All sizes fit inside of 3/8" O.D. x .035 wall steel tubing.

Current Part No.	Old Part No.	Clevis Pin Hole Dia.	Fork Width		Price Each
			Overall	Inside	
MS27976-1	AN481-1P	1/4"	1/2"	17/64"	$18.70
MS27976-2	AN481-2P	1/4"	5/16"	9/64"	$17.75
MS27976-3	AN481-3P	3/16"	1/2"	17/64"	$19.30
MS27976-4	AN481-4P	3/16"	5/16"	9/64"	$19.50

AN486 THREADED CLEVIS FORK ROD ENDS (MS27975)

These rods ends are machined from 1035 or 1042 carbon steel and cadmium plated. Minimum tensile strength 65,000 PSI. They are internally threaded 1/4"-28 to fit threaded 1/4" dia. rod. Used for engine controls. For experimental aircraft only.

Current Part No.	Old Part No.	Clevis Pin Hole Dia.	Fork Width		Price Each
			Overall	Inside	
MS27975-1	AN486-1P	1/4"	1/2"	17/64"	$15.90
MS27975-2	AN486-2P	1/4"	5/16"	9/64"	$16.80
MS27975-3	AN486-3P	3/16"	1/2"	17/64"	$16.90
MS27975-4	AN486-4P	3/16"	5/16"	9/64"	$16.90
AN486-1032	Special	3/16"	7/16"	3/16"	$9.75

AN490 THREADED ROD ENDS

Manufactured of 4130 steel, heat-treated and cadmium plated. Minimum tensile strength 125,000 PSI. For welding to steel tubing or riveting to aluminum tubing.

PN AN490HT-16P

Part Number	Thread Size	Used With Tube Size	Price Each
AN490HT5P	1/4-28	5/16"x.035	$19.90
AN490HT6P	1/4-28	3/8"x.035	$13.75
AN490HT8P	1/4-28	1/2"x.035	$14.65
AN490HT10P	5/16-24	5.8"x.035	$17.65
AN490HT11P	5/16-24	3/4"x.035	$14.95
AN490HT14P	3/8-24	3/4" x .035	$16.90
AN490HT15P	5/16-24	1/2"x.058	$18.40
AN490HT16P	3/8-24	1/2"x.058	$22.50

AN665 THREADED CLEVIS TIE ROD TERMINALS

These Zinc plated steel terminals are manufactured to AN specifications, with either right-hand or left-hand threads. Example: P/N AN665-10L has a 6-40 lefthand thread. AN665-34R has a 1/4-28 right-hand thread. Order Terminal Assemblies if locknut, clevis pin, and cotter pin are required along with terminal. Otherwise, only terminals are supplied.
*Note - Cad Plated Terminals are no longer being manufactured due to enviromental reasons. Once the cad plated stock is depleted the zinc plated terminals will be shipped. Please note that we can not guarantee cad plated terminals will be received.

Dash No.		Thrd. Size	Fork Pin Hole Dia.	Inside Width	Sgth. (Lbs.)	AN665 Rt. only Price Ea.	AN665 Lt. only Price Ea.
Right Hand	Left Hand						
-10R	-10L	6-40	.190"	.109"	1200	$10.50	$10.50
-21R	-21L	10-32	.190"	.150"	2400	$11.75	$11.75
-34R	-34L	1/4-28	.250"	.203"	4200	$22.50	$21.85
-46R	-46L	5/16-24	.313"	.203"	4600	$28.90	$28.50
-61R	-61L	5/16-24	.375"	.203"	6900	$32.85	$32.85
-80R	-80L	3/8-24	.375"	.266"	10000	$44.50	$44.50

AN665 TERMINAL ASSEMBLIES

These terminal assemblies include the AN665 terminals plus the appropriate lock nut, clevis pin, and cotter pin.

Description	Part No.	Price	Description	Part No.	Price
AN665-10R	05-02300	$10.95	AN665-10L	05-02400	$11.50
AN665-21R	05-02500	$12.00	AN665-21L	05-02600	$12.25
AN665-34R	05-02700	$22.75	AN665-34L	05-02800	$22.25
AN665-46R	05-02900	$29.75	AN665-46L	05-03000	$29.50
AN665-61R	05-03100	$33.50	AN665-61L	05-03200	$34.00
AN665-80R	05-03300	$45.50	AN665-80L	05-03400	$46.00

AP

CABLE TERMINALS

The finest and best means of attaching fittings to cable. Properly swaged to the cable, these terminals will maintain the minimum rated breaking strength of that cable. These terminals are made of stainless steel alloy having the best swaging and corrosion resistant properties and have a polished finish.

SA110 PLAIN BALL

Meet all requirements for Boeing's BACT14B Plain Ball End Fittings and NAS494 series Plain Ball End Fittings. All balls are manufactured from stainless steel as specified in MIL-DTL 781 and are certified to the appropriate standard(s).

Dash No.	Cable Dia.	Sphere Dia.	Strength Lbs.	Price
2	1/16	.188	80	$0.64
3	3/32	.250	735	$0.90
4	1/8	.312	1200	$1.20
5	5/32	.375	1680	$1.83
6	3/16	.437	2520	$2.27

MS20664C BALL & SINGLE SHANK

Dash No.	Cable Dia.	Sphere Dia. after Swage	Breaking Strength Lbs.	Price
2	1/16	.190	480	$0.55
3	3/32	.253	920	$0.84
4	1/8	.315	2000	$0.95
5	5/32	.379	2800	$1.40
6	3/16	.442	4200	$1.95

MS20663C BALL & DOUBLE SHANK

Dash No.	Cable Dia.	Sphere Dia. after Swage	Breaking Strength Lbs.	Price
2	1/16	.190	480	$0.99
3	3/32	.253	920	$1.50
4	1/8	.315	2000	$1.95
5	5/32	.379	2800	$3.55
6	3/16	.442	4200	$4.35

MS20667 FORK END

PN-MS20667-2

Dash No.	Cable Dia.	Breaking Strength Lbs.	Pin Hole Dia.	Fork Width "G"	Price
2	1/16	480	.190	.093	$8.95
3	3/32	920	.190	.108	$8.90
4	1/8	2000	.190	.195	$11.75
5	5/32	2800	.250	.202	$14.70
6	3/16	4200	.313	.260	$18.85

MS20668 EYE END

Manufactured from stainless steel in accordance with the requirements of MIL-DTL-781 and are certified to those standards.

Dash No.	Cable Dia.	Breaking Strength Lbs.	Pin Hole Dia.	Eye End Width "J"	Price
2	1/16	480	.190	.088	$4.70
3	3/32	920	.190	.103	$4.70
4	1/8	2000	.190	.190	$6.50
5	5/32	2800	.250	.197	$8.50
6	3/16	4200	.313	.255	$11.90

MS21259 STUD END

Manufactured from stainless steel to the strict standards of MS21259. They are certified to the MS21259 standard.

Dash No.	Cable Dia.	Breaking Strength Lbs.	Thread Size NF-3	Price
2	1/16	480	6-40	$4.45
3	3/32	920	10-32	$4.60
4	1/8	2000	1/4-28	$5.95
5	5/32	2800	1/4-28	$6.65
6	3/16	4200	5/16-24	$7.70

Add "RH" or "LH" after dash numbers for right or left hand threads

MS21260 TURNBUCKLE END

S=Short
L=Long

Dash No. Short	Price Each	Dash No. Long	Price Each	Cable Dia.	Thread Size	Min. Breaking Strength (lbs)
-S2RH	$5.35	-L2RH	$6.50	1/16"	6-40	480
-S2LH	$4.80	-L2LH	$6.80			
-S3RH	$5.75	-L3RH	$6.75	3/32"	10-32	920
-S3LH	$5.75	-L3LH	$6.85			
-S4RH	$6.50	-L4RH	$7.50	1/8"	1/4-28	2000
-S4LH	$6.50	-L4LH	$8.50			
-S5RH	$6.95	-L5RH	$7.95	5/32"	1/4-28	2800
-S5LH	$6.95	-L5LH	$8.50			
-S6RH	$7.95	-L6RH	$10.50	3/16"	5/16-24	4200
-S6LH	$10.85	-L6LH	$10.50			

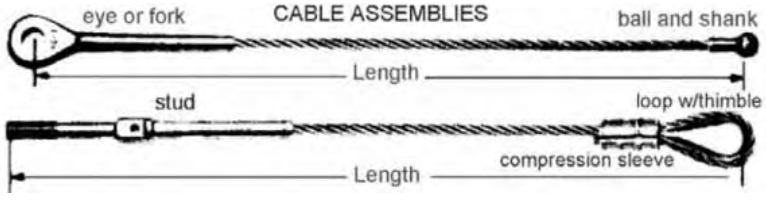
* Universally replaces the canceled AN669 & NAS650 parts identified by the same dash no.
* AN100 thimble not included.
** For short barrels listed above. Use two per assembly.

SA361 EYE END & SA362 FORK END

Part No.	Cable	Hole Dia	Width	Price
SA361-2	1/16	.188	.088	$4.40
SA361-3	3/32	.188	.103	$5.35
SA361-4	1/8	.188	.190	$5.85
SA361-5	5/32	.250	.197	$10.90
SA361-6	3/16	.313	.255	$12.00
SA362-2	1/16	.188	.093	$2.85
SA362-3	3/32	.188	.108	$3.45
SA362-4	1/8	.188	.195	$4.35
SA362-5	5/32	.250	.096	$7.90
SA362-6	3/16	.313	.125	$10.60

Discounts: All Items This Section:
Less 10% For 12 Ea. 15% On 50 Or More (Per Size)

CUSTOM-MADE CABLE ASSEMBLIES



Measure eye and fork terminals from center of pin holes. Measure ball fittings from center of ball. Measure stud terminals from end of terminal. Measure loop with thimble from surface of thimble.

SEE "TOOLS" SECTION FOR KEARNEY PORTABLE SWAGER.
CUSTOM-MADE CABLE ASSEMBLIES ARE SPECIAL ORDER AND NON-RETURNABLE

The terminals featured on this page must be installed with a rotary swaging tool, which is too costly for purchase by a homebuilder or small shop. We offer swaging service and custom-made cable assemblies in cable sizes of 1/16" to 5/32" diameter.

Select the cable fittings of your choice, specify cable size, cable construction, stainless steel or galvanized cable and length. Measure length of cable assembly as shown in the illustration. We will furnish complete cable assembly ready for installation. A simple drawing of the assembly required is appreciated and will expedite shipment.

The cost of custom-made cable assembly is base charge (up to 10 ft - $10.00, 10 to 20 ft. - $15.00, over 20 ft. - $20.00), plus the cost of selected fittings and cable plus swages at $6.95 each. For cable assemblies requiring a third swage, such as an assembly with two end fittings plus a ball swaged at some point on the cable, add $6.95 plus cost of the ball.

Example: The cost of a 10 ft. long cable assembly using 1/8" 7 x 19 galvanized cable, an MS20667-4 fork end and an MS21259-4RH stud end is 10 x $1.07/ft. for cable plus $11.75 and $5.95 for the fittings plus $6.95 per swage + $10.00 setup = $41.15 total cost. For added MS20663C-4 ball add $6.95 for swage plus $1.95 for ball.

Swaging Service - For cable assemblies requiring swaged fitting on one end only. $6.95/swage plus cost of cable, fittings, and the base charges as described above.

Nicopress Swages - Performed for $4.95/Swage plus cost of Nicopress sleeve and the base charges described above.

TOLERANCE - ±1/8"

Custom Cable Assemblies are fabricated in House by Aircraft Spruce for Prompt Shipment.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CONTROL CABLE

Galvanized - MIL-DTL-83420 replaces MIL-2-83420

Stainless - MIL-DTL-83420 replaces both Galvanized & Stainless

Cable Dia. (In.)	Con-struc-tion	Breaking Strength (Lbs.)		Part Number		Price/Ft.	
		Galva-nized	Stainless	Galva-nized	Stainless	Galva-nized	Stain-less
1/16	7x7	480	480	05-03600	05-03500	$0.51	$0.67
1/16	1x19	500	500	05-06835	---	$0.46	---
3/32	7x7	920	920	05-03800	05-03700	$0.46	$0.83
3/32	7x19	1000	920	05-04000	05-03900	$0.87	$0.92
1/8	1x19	2100	2100	05-04200	05-04100	$0.62	$0.97
1/8	7x19	2000	1760	05-04400	05-04300	$1.07	$1.21
5/32	1x19	3300	3300	05-04600	05-04500	$0.85	$1.47
5/32	7x19	2800	2400	05-04800	05-04700	$1.29	$1.58
3/16	7x19	4200	3700	05-05000	05-04900	$1.19	$1.75
1/4	7x19	7000	6400	05-05200	05-05100	$1.89	$3.35

PRESTRETCHED CABLES

Prestretched cables are a product where the cable has been placed under a load in a reel to reel supplemental operation where either a 50% or 60% load, depending on either Stainless(50%) or Galvanized(60%) material, for a 5 second period. This is done in accordance with MIL-DTL-5688.

Cable Dia. (in.)	Con-struc-tion	Strength Galv.	Strength SS	Part No. Galv	Galv Per Ft.	Part No. SS	SS Per Ft
1/16	7X7	480	480	05-11286	$0.62	05-11445	$0.76
3/32	7X7	920	920	05-11287	$0.57	05-11446	$1.04
3/32	7X19	1000	920	05-11288	$1.10	05-11447	$1.33
1/8	7X19	2000	1760	05-11289	$0.98	05-11448	$1.84

CABLE FAIRLEADS

PN-05-05700

Less 15% for 12 or more.

PN 05-05600

Nylon construction for external use. Two halves with retaining clip.

3/4"O.D. x 3/4"L
P/N 05-05500 .....$2.35 Set

3/4"O.D. x 1" L
P/N 05-05600 .....$2.35 Set

Clips Only
P/N 05-05700 ..... $0.46 Ea.

SEE TOOL SECTION FOR CABLE TENSIOMETERS

WING STRUT ADJUSTMENT FORK & BARREL SETS

Conforms to AD. 81-25-05. The heavy-duty, high tensile strength strut fork has rolled threads, an improved alloy with heartier design for added strength, and a permanent indentification mark to provide assurance of conformity for ease in field installation. Forks require a five year inspection per A.D. 93-10-06.

FAA/PMA. J-3 & PA-11. Replacement for 13770-00. Includes bolt, nut, cotter pin & jam nut. Measures 5/16" bolt hole. Measures 7/16" x 20 thread NF3..... P/N 05-06000 ..... $93.95

FAA/PMA. J-5 & PA-12, 14, 18, 20 & 22. Replacement for 4481-02. Includes bolt, nut, cotter pin & jam nut. 3/8" bolt hole. Measures 7/16" x 20 thread..... P/N 05-06100 ..... $86.95

Wing Strut Barrel has 7/16-20 undersize thread to permit retapping after welding. Retapping is required prior to installing wing strut forks. Made in USA.

P/N 05-05900 ..... $15.90

RUDDER CABLE FAIRING SETS FOR RV'S

Pre-formed .025" thick aluminum fairings for rudder cable exit on RV fuselages. (None are supplied with the RV kits). Set contains (2) identical fairings - 1 for use on cables and 1 spare (could be used on elevator trim). Each will require some trimming to fit before riveting. P/N 12-00635 .....$16.80

CONTROL CABLE SPECIFICATIONS

• 7 X 7 FLEXIBLE CONTROL CABLE - Has seven strands of seven wires each. Used for control purposes where extreme flexibility is not required but where abrasion is a factor.

• 7 X 19 FLEXIBLE CONTROL CABLE - Has seven strands of 19 wires each. Its greater metallic area makes it stronger than 7 x 7 cable. Because of its fine wires the best service is obtained where abrasion is not too severe. These same wires, however, make it flexible to meet severe bending.

• 1 X 19 NON-FLEXIBLE CABLE - Is one strand of 19 wires. It has more metallic area than 7 x 7 or 7 x 19 constructions which makes it the strongest but also the least flexible. 1 x 19 is generally used for bracing purposes, drag and anti-drag wires. It is often used with swage type terminals.

• The major difference between aircraft and commercial cable is the lubrication applied to aircraft cable, which provides substantially better fatigue life than non-lubricated commercial cable. Aircraft cable requires extensive extra testing, documentation, certification to meet military specifications. Aircraft Spruce obtains its aircraft cable from domestic sources and the cable is certified to MIL Spec MIL, W-83420 and QPL Certified.

CESSNA FLIGHT CONTROL CABLES

These FAA-PMA approved cable assemblies are available in stainless or galvanized cable and are constructed of highest quality U.S. made materials. All components are fully traceable and each assembly is load tested and length stabilized. Over 2000 cable assemblies in stock. Custom cable assemblies can be fabricated to your specification.

- AS0510105 Series for Cessna 170, 172, 180, 182, and 185
- AS0400107 Series for Cessna 150, and 152
- AS1660300 Series for Cessna 188
- AS62701 Series for Piper PA28, PA32, and PA34
- ACA Series for Schweizer G-164

Call the Cessna/Piper parts specialist at 1-877-4SPRUCE with your Cessna or Piper cable assembly part number for pricing or for assistance in determining the part number you require for your aircraft.

BEECH FLIGHT CONTROL CABLES

McFarlane Beechcraft flight control cables and chains are coated with a corrosion inhibiting compound that meets Military Specification MIL-PRF-16173. This is the same compound used on all factory original Beechcraft flight control cables.FAA/PMA

Model	Part No:	Price
MCNAS30327-0590 Tab Actuating	05-04625	$157.75
MCNAS30434-1520	05-04624	$191.75
MCNAS30434-1520	05-04624	$191.75
MC33-524000-17	05-06981	$173.75
MC35-524385	05-06985	$114.90
MC35-524651-1	05-06986	$156.75
MCNAS31414-1871	05-06987	$112.75
MCNAS31514-1871	05-06988	$123.75
MCNAS30425-0100	05-06989	$107.95

PUSHROD THREADED END FITTING

Fits 5/8" diameter pushrods. 1/4 - 28 threaded hole. Secure to aluminum pushrod with two cross riveted or bolted fasteners. Made from 6061-T6 5/8" diameter x 1-5/8" long rod. Two sizes available.

Fits: 5/8" x .049" tube ..... P/N 05-01140 .....$9.90
Fits: 5/8" x .058" tube ..... P/N 05-01150 .....$9.90

THREADED INSERTS

Inserts into tube connector (1" x .049 wall). 7/16" dia. Cross hole 3/16" Cad2 Type 2 Yellow Chromate. P/N 05-02071.....$2.95

PUSHROD BALL ROLLER GUIDES

Provides almost frictionless push – pull and rotary movement of aileron and elevator push rods. Design is similar to that used in German sailplanes. Unit contains four nylon roller balls and provides 3.5" pushrod travel. Aluminum case size, 1.25" x 3.0" long. Fits 5/8" pushrod diameters.

P/N 05-01110..... $10.85 ea.

PUSHROD FORKED END FITTING

8" diameter pushrods. 3/16" pivot hole with .090" wide slot for nk. Secure to aluminum pushrod with two cross riveted or bolted ers. Made from 6061-T6 5/8" diameter x 2-3/8" long rod. Two vailable. Fits: 5/8" x .049" tube.....P/N 05-01120..... $9.90 ea.
Fits: 5/8" x .058" tube.....P/N 05-01130..... $9.90 ea.

ASSORTED SPRINGS

Spring	Part No.	Application	Spring Type	Length	Price ea.
Century Spring #186-C	01-27200	VariEze	Tension	2"	$3.80
Rudder Return Spring	01-27300	"	Tension	4 1/2"	$4.75
Landing Brake	01-27600	VE/Long-EZ	Tension	10"	$14.75
Tension Spring*	01-37500	"	Tension	30"	$11.75
Landing Brake	01-27900	Cozy	Tension	12 1/2"	$8.90

AP

SUPER-TOUGH STANDOFF SADDLES -TYPE II

P/N	Max Air #	Fits	O.D.	Hole	HT	Price
05-02052	S01-14	1.000	1.000	.266	.188	$1.77
05-02055	S01-24	1.500	1.000	.266	.188	$1.83
05-02056	S01-84	1.625	1.000	.266	.188	$1.83
04-00922	S01-44	1.750	1.000	.266	.188	$1.68
05-02060	S01-74	1.875	1.000	.266	.188	$1.83
05-02062	S01-94	2.000	1.000	.266	.188	$1.83
05-02064	S04-94	2.000	1.000	.266	.440	$1.73

ULTRALIGHT SADDLES

SUPER-TOUGH SADDLES - TYPE I

P/N	Max Air #	Fits	OD	Hole		HT	Price
S4436	---	.875	0.875	.260		.125	$1.83
S4352	---	1.00	1.00	.260		.125	$1.75
S4350	---	1.00	1.00	.340		.125	$1.59
S4353	---	1.00	1.00	.260		.250	$1.73
S4326	---	1.125	1.00	.260		.125	$1.75

SUPER-TOUGH SADDLES -TYPE II

P/N	Max Air #	Fits	OD	Hole	HT	Each
S4451	S-24	1.500	1.375	.266	.188	$1.16
S4453	S-84	1.625	1.375	.266	.188	$1.83
S4456	S-44	1.750	1.375	.266	.188	$1.83
S4459	S-74	1.875	1.375	.266	.188	$1.83
S4460	S-74	1.875	1.375	.320	.188	$1.90
S4462	S-94	2.000	1.375	.266	.188	$1.16
S4482	S-94	1.750	1.000	.320	.188	$0.73

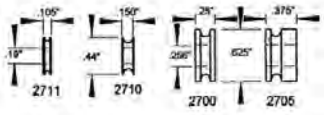
ALUMINUM SADDLES

P/N-Type	Our P/N	Fits	Base OD	Hole	Height	Price
4300/I	04-00923	1.00	1.00	.266	.125	$4.35
4327/I	04-00924	1.13	1.00	.266	.125	$4.20
4328/I	04-00925	1.25	1.00	.266	.125	$4.20
4310/II	04-00926	1.50	1.00	.266	.250	$5.25
4315/I	04-00927	1.63	1.00	.266	.125	$4.20
4325/I	04-00929	1.88	1.00	.266	.125	$4.20
4329/I	04-00930	2.00	1.00	.266	.125	$4.20

TUBE CONNECTORS - NYLON

Fits 1 x .049 Tube.....P/N 05-02096.....$1.30
Fits 1 x .049 (Maxair TC-1).....P/N 05-02097.....$1.64

CABLE FITTINGS



1/16" Cable, Steel, AN111-3
P/N CF2710.....$2.50
3/32" Cable, Aluminum
P/N CF2700.....$2.45
3/32" Cable, Aluminum
P/N CF2705.....$2.25
1/16" Cable, Stainless, AN111C-3 .....P/N CF2710S.....$1.84

REAR SPAR CONTOUR FITTING

Maxair#WT262, Contour
P/N 05-01936 .....$1.59

POLY TIP RIB END FITTING

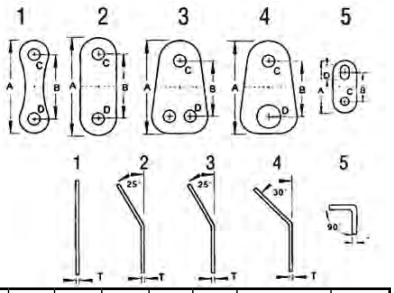
Maxair#PT-1
Poly Tip.....P/N 05-01932 .....$0.79

NYLON WASHERS

Model	P/N	O.D.	I.D.	Tkns	Each
NW2061	05-01971	1.000	.256	.125	$1.10
NW2059	05-01970	.875	.256	.031	$0.52
NW2055	05-01969	.256	.500	.060	$0.52
NW2045	05-01968	.875	.256	.062	$0.32
NW1540	05-01967	.440	.190	.062	$0.22
NWPW-3	05-01972	.625	.190	.062	$0.24
NWPW-4	05-01973	.625	.250	.062	$0.22

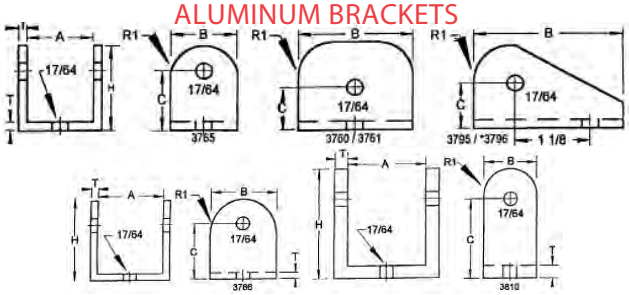
TANGS

Made of 304 stainless steel. All measurements are in inches.



No.	Maxair	Description	T	A	B	C	D	Part No.	Price
1	T12-HT4	Figure 8	14G	2.0	1.38	.26	.26	05-02076	$1.22
2	--	2-Hole Flat	16G	2.0	1.25	.26	.26	05-02072	$1.31
	T0-FT	2-Hole Flat	13G	2.0	1.25	.26	.26	05-02073	$1.32
	T2-FLAT	2-Hole Bent	13G	2.0	1.24	.26	.26	05-02074	$1.56
	--	2-Hole Bent	12G	2.0	1.24	.26	.26	05-02075	$1.55
3	T11-DFT	3-Hole Flat	14G	1.91	1.09	.26	.26	05-02077	$3.80
	T8-DFT	3-Hole Flat	12G	1.91	1.09	.32	.26	05-02078	$3.75
	T9-DAT	3-Hole Bent	14G	1.86	1.04	.26	.26	05-02079	$2.60
	T6-DAT	3-Hole Bent	12G	1.86	1.04	.32	.26	05-02080	$3.80
4	--	Anchor Tang	14G	1.91	1.19	.26	.50	05-02081	$3.75
5	--	SS EYE Bent	13G	1.13	.563	.188	--	05-04371	$2.50

ALUMINUM BRACKETS



Model	Part No.	A	B	C	H	T	R1	ALLOY	Each
B3772	05-01930	.500	.750	.500	.750	.125	---	6061-T6	$4.20
B3765	05-01928	1.000	1.000	.875	1.250	.125	.500	6063-T5	$5.25
B3760	05-01926	1.000	1.750	.625	1.250	.125	.500	6063-T5	$5.90
B3761	05-01927	1.000	1.750	.906	1.250	.125	.750	6063-T5	$7.50
B3795	---	1.000	2.250	.670	1.250	.125	.500	6063-T5	--
B3766	05-01929	1.250	1.250	1.062	1.500	.125	.750	6063-T5	$6.30
B3796	---	1.250	2.375	.875	1.500	.125	.500	6063-T5	--
B3810	05-01931	1.500	1.000	1.500	2.000	.250	.500	6061-T6	$10.15

STAINLESS STEEL BRACKETS

Fits	Model No.	Part No.	Price
1.000" Tub	B3740	05-01922	$5.35
1.125" Tube	B3742	05-01923	$6.75
Fits 1.250" Tube	B3744	05-01924	$8.45
Fits 1.375" Tube	B3746	05-01925	$8.45

PLASTIC ID TUBE CAPS

Model	Part No.	Fits Tube Size	Maxair	Each
TC4116	05-02093	1-1/2 x .083	---	$2.90
TC4115	05-02092	1-1/2 x .049	EC-6	$0.96
TC4100	05-02088	1-1/8 x .058	EC-4	$0.96
TC4080	04-00158	3/4" universal	14-209A	$0.50
TC4095	05-02084	1 x .083	EC-3	$0.58
TC4096	05-02085	1 x .058	EC-1	$0.60
TC4098	05-02087	1 x .049	EC-1	$0.58
TC4092	05-02083	7/8 x .049	EC-78	$0.55
TC4090	05-02082	5/8 x .058	---	$0.44
TC4097	05-02086	1 x .065	EC-2	$0.60
TC4106	05-02089	1-5/8 x .049	EC-7	$1.10
TC4110	05-02090	1-3/4 x .049	EC-8	$2.90
TC4112	05-02091	2 x .049	EC-10	$2.50

CONTROL CABLE FAIRINGS

Injection molded ABS plastic fairings used to cover hole in airframe where control cables emerge such as the rudder cables at the rear of the fuselage. May be installed on any airframe surface but is most normally used on fabric covered aircraft where they are bonded on with fabric cement and covered with a fabric patch. P/N 05-05750 .....$4.35 pair

TURNBUCKLE COMPONENTS

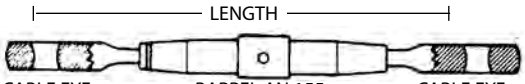
TURNBUCKLES COMPLETE ASSEMBLIES

Complete turnbuckle assemblies consist of a brass barrel and two steel ends, one with right-hand thread and the other with left-hand thread. Order by proper AN number and add dash number and a letter to indicate length and strength required.

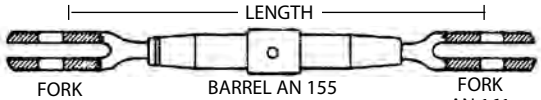
AN130 ASSEMBLY

AN135 ASSEMBLY

AN140 ASSEMBLY



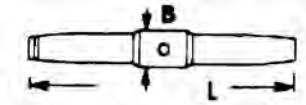
AN150 ASSEMBLY



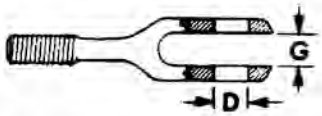
AN 146 Assembly consists of 1 - AN 155 barrel, 1-AN161 Fork and 1 MS21260 Turnbuckle End.

Complete turnbuckle assemblies consist of a brass barrel and two steel ends, one with right-hand thread and the other with left-hand thread. Order by proper AN number and add dash number and a letter to indicate length and strength required.

Part No.	Length	Strength (Pounds)	Price	Part No.	Length	Strength (Pounds)	Price	Part No.	Length	Strength (Pounds)	Price
AN130-8S	4-1/2	800	$35.50	AN135-32S	4-19/32	3200	$32.50	AN140-46L	8	4600	$62.75
AN130-16S	4-1/2	1600	$30.00	AN135-32L	8-7/64	3200	$37.50	AN140-61L	8	6100	$114.95
AN130-16L	8	1600	$37.50	AN135-46S	4-21/32	4600	$55.75	AN150-8S	4-1/2	800	$36.50
AN130-22S	4-17/32	2200	$34.50	AN135-46L	8-5/32	4600	$60.75	AN150-16S	4-1/2	1600	$33.25
AN130-32S	4-19/32	3200	$36.25	AN135-61L	8-9/32	6100	$138.95	AN150-16L	8	1600	$43.50
AN130-32L	8-7/64	3600	$43.50	AN140-8S	4-1/2	800	$34.50	AN150-22S	4-17/32	2200	$37.50
AN130-46S	4-21/32	4600	$55.50	AN140-16S	4-1/2	1600	$26.50	AN150-22L	8-1/32	2200	$45.25
AN130-46L	8-5/32	4600	$59.50	AN140-16L	8	1600	$30.50	AN150-32S	4-19/32	3200	$41.00
AN130-61L	8-9/32	6100	$121.95	AN140-22S	4-1/2	2200	$30.50	AN150-32L	8-7/64	3200	$49.75
AN135-8S	4-1/2	800	$34.50	AN140-22L	8	2200	$37.25	AN150-46S	4-21/32	4600	$53.75
AN135-16S	4-1/2	1600	$26.50	AN140-32S	4-1/2	3200	$32.50	AN150-46L	8-5/32	4600	$57.25
AN135-16L	8	1600	$30.50	AN140-32L	8	3200	$37.25	AN150-61L	8-9/32	6100	$137.95
AN135-22S	4-17/32	2200	$29.85	AN140-46S	4-1/2	4600	$55.25	AN150-80L	8-5/16	8000	$127.95

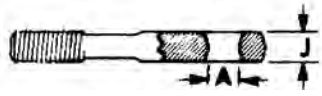


AN155 BARREL



AN161 FORK

AN165 PIN EYE



AN170 CABLE EYE

TURNBUCKLE PARTS DIMENSIONS

The "R" or "L" following the dash number designates "right" or "Left." The "S" or "L" (2nd letter following dash number) indicates "short" or "long." AN 161 Fork and AN 170 Cable Eye are available with either right or left-hand thread.

Dash No.	Thread Size	AN 155 Barrel		AN 161 Fork		AN 165 Pin Eye		AN170 Cable Eye	
		"L"	"B"	"G"	"D"	"J"	"D"	"J"	"A"
-8S	6-40	2-1/4	.250	.109	.188	.125	.188	.125	.188
-16S	10-32	2-1/4	.344	.156	.188	.1625	.188	.188	.219
-16L	10-32	4	.344	.156	.188	.1625	.188	.188	.219
-22S	1/4-28	---	---	.187	.188	.188	.188	.188	.219
-22L	1/4-28	---	---	.187	.188	.188	.188	.188	.219
-32S	1/4-28	2-1/4	.438	.218	.250	.219	.250	.219	.281
-32L	1/4-28	4	.438	.218	.250	.219	.250	.219	.281
-46S	5/16-24	2-1/4	.500	.250	.313	.281	.313	.281	.313
-46L	5/16-24	4	.500	.250	.313	.281	.313	.281	.313
-61L	3/8-24	---	---	.270	.375	.281	.375	.281	.344
-80L	3/8-24	4	.625	.312	.375	.328	.375	.328	.375

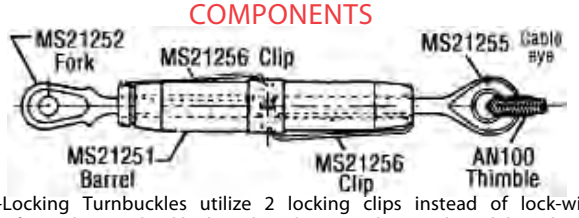
TURNBUCKLE PARTS PRICES

AN155 Dash No.	Barrel Price Each	TURNBUCKLE ENDS Dash No.	Price Each AN 161	AN 165	AN 170
-8S	$9.85	-8RS	$13.50	$12.50	$12.50
-8S	$9.85	-8LS	$13.50	$12.50	$12.50
-16S	$7.90	-16RS	$13.00	$9.50	$9.50
-16S	$7.90	-16LS	$12.65	$8.90	$9.50
-16L	$9.50	-16RL	$17.50	$10.50	$10.50
-16L	$9.50	16LL	$16.85	$10.80	$10.90
		-22RS	$14.50	$10.50	$10.50
		-22LS	$13.50	$10.85	$10.50
		-22RL	$17.60	$12.85	$15.95
		-22LL	$17.60	$13.50	$13.50

AN155 Dash No.	Barrel Price Each	TURNBUCKLE ENDS Dash No.	Price Each AN 161	AN 165	AN 170
-32S	$9.50	-32RS	$15.65	$11.50	$11.50
		-32LS	$15.85	$11.50	$11.50
-32L	$10.50	-32RL	$19.80	$13.65	$13.50
		-32LL	$19.80	$13.65	$13.65
-46S	$12.50	-46RS	$21.70	$21.60	$21.50
		-46LS	$19.85	$20.50	$21.65
-46L	$13.50	-46RL	$21.75	$22.90	---
		-46LL	$22.45	$23.70	$24.70
-61L	Use	-61RL	$51.75	$68.00	$42.50
6.95	-80L	-61LL	$59.75	$45.65	$42.50
-80L	$26.50	-80RL	$49.90	$45.50	---
		-80LL	$51.75	$43.50	---

MEETING OR BEATING ANY COMPETITOR'S PRICES SINCE 1965!

MS CLIP-LOCKING TURNBUCKLE COMPONENTS



Clip-Locking Turnbuckles utilize 2 locking clips instead of lock-wire for safety. The turnbuckle barrel and terminals are slotted lengthwise to accommodate the locking clips. After the proper cable tension is reached the barrel slots are aligned with the terminal slots and the clips are inserted. The curved ends of the locking clips expand and latch in the vertical slot in the center of the barrel. Build up MS turnbuckle assemblies, similar to the AN assemblies listed on the preceding page, by selecting a turnbuckle barrel, 2 end fittings and 2 clips from the components listed in the Table below. The price of the complete assembly is the sum of the prices shown for the components. Example: An MS turnbuckle assembly for 3/32" dia. cable, with fork end and pin eye consists of:

1 MS21251-B3S Barrel $8.50
1 MS21252-3LS Fork End..... $13.55
1 MS21254-3RS Pin Eye End..... $10.50
2 MS21256-1 Clips ..... $0.34/ea.

Less 10% for 6 or more complete assemblies.
Less 15% for 12 or more complete assemblies.

Note: MS21256-1 clips are short (1") and MS21256-2 are long (2").

Turnbuckle Component	Part No.	Cable Dia.	Thread Size	Min. Breaking Strength(lbs)	Price Each
Barrel (Supercedes AN155)	MS21251-B2S	1/16"	6-40	800	$8.95
	-B3S	3/32"	10-32	1600	$8.50
	-B5S	5/32"	1/4-28	3200	$9.90
	-B5L	5/32"	1/4-28	3200	$10.50
Fork End (Supercedes AN161)	MS21252-2RS	1/16"	6-40	800	$13.50
	-2LS				$13.55
	-3RS	3/32"	10-32	1600	$12.70
	-3LS				$13.55
	-5RS	1/8", 5/32"	1/4-28	3200	$15.75
	-5LS				$16.50
Pin Eye End (Supercedes AN165)	MS21254-2RS	1/16"	6-40	800	$10.75
	-2LS				$12.50
	-3RS	3/32"	10-32	1600	$10.50
	-3LS				$10.50
	-5RS	1/8", 5/32"	1/4-28	3200	$12.65
	-5LS				$12.65
Cable Eye (Supercedes AN170)	MS21255-2RS Stainless	1/16"	6-40	800	$12.65
	-2LS				$12.50
	-3RS	3/32"	10-32	1600	$10.50
	-C3RS	3/32"	10-32	1600	$9.50
	-3LS				$10.65
	-5RS	1/8", 5/32"	1/4-28	3200	$11.95
	-5LS				$11.95
Cable Swage End (Supercedes AN669)	MS21260-S2RH	1/16"	6-40	480	$5.35
	-S2LH				$4.80
	-S3RH	3/32"	10-32	920	$5.75
	-S3LH				$5.75
	-S4RH	1/8"	1/4-28	2000	$6.50
	-S4LH				$6.50
	-S5RH	5/32"	1/4-28	2800	$6.95
	-S5LH				$6.95
Clip*-	MS21256-1	- -	- -	- -	$0.34
	MS21256-2	- -	- -	- -	$0.42

SAFETY WIRE

Available in Type 302/304 stainless steel (soft temper) per MS20995. Also, in soft annealed brass per specification QQ-W-321, Type A.Stainless steel safety wire furnished in convenient 1 lb. dispensing container. Annealed brass safety wire is furnished in a convenient 1 lb. dispensing container.

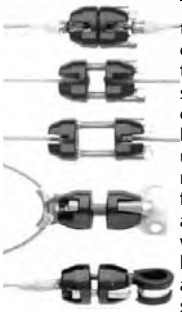
Wire Dia. In.	Wire Type	Part No.	Price Per lb.
.020	Stainless Steel	05-02684	$9.95
.025	Stainless Steel	05-06831	$8.90
.032	Stainless Steel	05-02685	$7.80
.032	Brass	05-02686	$18.75
.041	Stainless Steel	05-02687	$7.80
.041	Brass	05-06600	$18.65

Less 10% on orders for 10 spools, 15% on 25 spools, 20% on 50 spools or more. May be assorted.

25 FT. COIL OF STAINLESS STEEL SAFETY WIRE:

.032" Dia. ..... P/N 01-15725 ..... $1.25
.041" Dia. ..... P/N 01-15825 ..... $1.25

ADJUSTABLE CABLE CONNECTOR

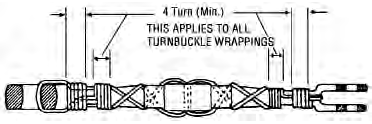


The ACC provides a strong positive connection with tensioning and maximum liner travel in a confined cable installation. Accommodates 3 standard cable terminals, (SA-110 plain ball, MS20664C ball & single shank, and AN111 cable bushing) including combinations of cable-to-cable & cable-to-bracket. It is light & compact without compromising safety. It utilizes an original design of overlapping walls and ridges to enhance the strength of each working surface. The ACC is precisioned CNC machined 7075 anodized aluminum. Stainless Steel Allen screws work in tandem to provide cable tensioning. 2 stainless tube-nuts provide additional structural security and prevent loosening with interlocking threads. 2 stainless steel pins are locked in place between the adjustment screws and provide an anchor for cable bushings or customized brackets. If necessary, longer adjustment screws can be used to accommodate insufficient cable lengths.

Avail. Sizes	Pin Dia.	Part No.	Price
ACC-3 – 1/6", 3/32"	.188	05-01341	$37.55
.032	.188	05-01342	$44.55
.032	1/4"	05-01343	$52.75

SAFETY METHODS FOR TURNBUCKLES

Safety all turnbuckles with .040 dia. annealed safety wire using either the double or single wrap as described and illustrated. Do not reuse safety wire. Adjust the turnbuckle to the correct cable tension so that no more than 3 threads are exposed on either side of the turnbuckle barrel. Do not lubricate turnbuckles.



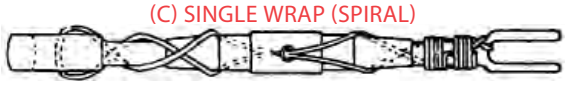
(A) DOUBLE WRAP (SPIRAL)

Of the methods using safety wire for safety turnbuckles, the method described here is preferred, although either of the other methods described are satisfactory. The method of double wrap safety is shown in figure (A). Use 2 separate lengths of the proper wire. Run one end of the wire through the hole in the barrel of the turnbuckle and bend the end of the wire towards opposite end of the turnbuckle. Then pass the second length of the wire into the hole in the barrel and bend the ends along the barrel on the opposite side first. Spiral the 2 wires in opposite directions around the barrel to cross each other twice between the center hole and the ends. Then pass the wires at the end of the turnbuckle in opposite directions through the holes in the turnbuckle eyes or between the jaws of the turnbuckle fork as applicable, laying one wire along the barrel and wrapping the other at least four times around shank of the turnbuckle and binding the laid wires in place before cutting the wrapped wire off. Wrap the remaining length of safety wire at least 4 turns around the shank and cut it off. Repeat the procedure at the opposite end of the turnbuckle.

(B) DOUBLE WRAP

Another satisfactory double wrap method is similar to Method A. except that the spiraling of the wires is omitted as shown in figure (B).

(C) SINGLE WRAP (SPIRAL)



The single wrap methods described and illustrated are acceptable but are not the equal of the double wrap methods.
Pass a single length of wire through the cable eye or fork at either end of the turnbuckle assembly. Spiral each of the wire ends in opposite directions around the first half of the turnbuckle so as to cross each other twice. Thread both wire ends through the hole in the middle of the barrel so that the third crossing of the wire ends is in the hole. Again, spiral the two wire ends in opposite directions around the remaining half of the turnbuckle, crossing them twice. Then, pass one wire end through the cable eye or fork in the manner described above, wrap both wire ends around the shank for at least four turns each, cutting off excess wire.

(D) SINGLE WRAP

Pass one length of wire through the center hole of the turnbuckle and bend the wire ends toward opposite ends of the turnbuckle. Then pass each wire end through cable eye or fork and wrap each wire end around the shank for at least four times, cutting off excess wire. After safety, no more than 3 threads of the turnbuckle terminal should be exposed.

PULLEYS

AN210A & AN210B (MS24566)
Anti-Friction Bearing Control Pulley with phenolic body and ball bearing with seal. The AN210A pulleys are dimensionally the same as the "B" pulleys but have metal-shielded bearings rather than removable composition-seal type bearings. The low allowable design load of the -3A and -3B pulleys-is based on cable fatigue. AN210-1A, AN210-3A, AN210-1B and AN210-3B shall not be installed on frequently used aircraft controls to bend the cable more than 15° from a straight line.
MS20220 (AN220) Flight Control Pulley with phenolic body and ball bearing with seal. Also available with aluminum body (MS20220A). The low allowable load limit of the -1 pulley is based on cable fatigue. When used on frequently used aircraft controls the cable wrap angle should not be more than 15° from a straight line.
MS20219 (AN219) Aircraft Secondary Control Pulley with phenolic body and ball bearing with seal. MS20219A (AN219A) Pulley with anodized aluminum body and ball bearing with seal. The aluminum body is recommended for -1 and -3 pulleys. The -1 pulley shall not be installed in flight control systems.
Examples of Part No.: Phenolic Body - MS20219-1
Aluminum Body - MS20219A1
NAS383 Series Pulley with phenolic body and graphite impregnated bronze sleeve. This is a low cost pulley widely used in aircraft, winches, cranes and remote mechanical actuation devices.
A-223 and A-224 Pulleys with plain phenolic bore are used as guide and secondary control pulleys in production aircraft.
BB-128-1 and BB-120-1 Pulleys have high pressure phenolic bodies and ball bearings with Teflon seals. Used in Christavia and many other aircraft.

SPECIAL PULLEYS

1-1/2 Inch Pulley
For smooth control operation. Manufactured for aircraft float rudder operation, the pulleys can be used in virtually any application. Solid UHMW plastic for use in tough, caustic environments. Bushing insert is stainless steel with minimum lubrication required. Used with 1/16" thru 1/8" - 7x7 or 7x19 control cable. Bushing is clamped in pulley bracket. Pulley rotates on bushing. Pulley: 1-1/2" dia. x .283" wide. Bushing: 1/4" O.D. x 3/16" I.D. x .328" long. Weight: .26 oz. (including stainless bushing). P/N 05-29725.....$5.25 ea.
2 Inch Pulley
Larger cables, bigger job? Wherever you need a tough, durable pulley, look no further.Replace your old worn out, sticky pulleys with NAP UHMW plastic for smooth control operation. Used with 3/32" thru 3/16" - 7x7 or 7x19 control cable. Bushing insert is stainless steel with minimum lubrication required. Bushing is clamped in pulley bracket. Pulley rotates on bushing. Fits DeHavilland Beaver floats Pulley: 2" dia. x .470" wide. Bushing: 5/16" O.D. x 1/4" I.D. x .487" long. Weight: .58 oz. (including stainless bushing). P/N 05-29730.....$11.65 ea.

PIPER PULLEYS

Fig.	Ref. #	Description	O.D.	I.D.	Part No.	Price
1	41171-000	Pulley, trimcrank with bushing (fiber)	2 3/4"	3/8"	05-02636	$54.95
1a	40991-000	Pulley (no slot)	2 3/4"	3/8"	05-02637	$14.80
2	41001-008	Pulley w/ bearing (fiber)(41001-010)	2 3/4"	5/16"	05-02638	$45.65
3	80421-000	Pulley (fiber)	1 3/4"	1/4"	05-02639	$9.50
4	481-609	Pulley (fiber)	1 1/2"	1/4"	05-02640	$9.50
5	11200-000	Pulley (fiber)	1 1/8"	1/4"	05-02641	$12.50
6	43001-000	Pulley (fiber)	1"	1/4"	05-02642	$14.80
7	43061-000	Pulley, Stablizer screw (aluminum)	2 3/4"	3/8"	05-02643	$91.75
8	12983-000	Pulley, double groove (aluminum)	2 3/4"	3/8"	05-02644	$47.80
9	10080-000	Pulley, trimcrank (aluminum)	2 3/4"	3/8"	05-02645	$116.75
10	11008-000	Pulley, adj. screw(alum.) single groove	4"	3/8"	05-02646	$130.75
11	12982-000	Pulley, adj. screw (alum.) dbl. groove	4"	3/8"	05-02647	$95.75

AIRCRAFT PULLEY OIL

Save the labor of re-oiling the control system every year! Aircraft pulley oil prevents pulley drag and stickiness.
Pully Oil Pint.....P/N 05-04178..... $24.50
Pully Oil Kit - Includes: 1 Pint of Pulley Oil, 1 Needle, 1 Each 4.5" Extension, and 1 Each 8" Extension
P/N 05-04179..... $33.75
Pully Oiler Kit - Includes: 1 Needle oiler with oil, 1 each 4.5" extension & 1 each 8" extension
P/N 05-04180..... $10.95

ALUMINUM PULLEYS

Dimensions of these aluminum pulleys are same as equivalent size of MS20219 and MS20220 Phenolic Pulleys in table.

Part No	Cable Size (in).	OD	Groove Dia	Hub Dia.	Bore Dia.	Width	Price ea
MS20219A1	1/16, 3/32	1.312	1.00	.423	.2500	.438	$23.50
MS20219A3	1/16, 3/32	1.750	1.438	.769	.6250	.438	$47.50
MS20220A1	1/8, 5/32, 3/16	1.755	1.255	.475	.3125	.625	$34.90
MS20220A2	1/8, 5/32, 3/16	3.005	2.505	.115	.3125	.625	$63.80
MS20220A3	1/8, 5/32, 3/16	4.255	3.755	.115	.3125	.625	$59.75
MS20220A4	1/8, 5/32, 3/16	5.505	5.005	.115	.3125	.625	$86.75

PHENOLIC PULLEYS

Part Number	Cable Size (In.)	OD	Groove Dia	Hub Dia.	Bore Dia.	Width	Load Limit (Lbs.)	Price Each
MS24566-1B	1/16,5/64,3/32	1.250	.972	.625	.1900	.297	300	$19.75
MS24566-2B	1/16,5/64,3/32	2.500	2.222	.777	.1900	.297	500	$24.70
MS24566-3B	1/8,5/32,3/16	2.000	1.510	.901	.2500	.484	600	$18.90
MS24566-4B	1/8,5/32,3/16	3.500	3.010	.901	.2500	.484	1200	$23.50
MS20219-1	1/16, 3/32	1.312	1.000	.423	.2500	.438	480	$23.90
MS20219-2	1/16,3/32	1.750	1.438	.423	.2500	.438	480	$21.75
MS20219-3	1/16, 3/32	1.750	1.438	.769	.6250	.438	480	$54.75
MS20219-4	1/16, 3/32	2.625	2.312	.423	.2500	.438	920	$20.75
MS20220-1	1/8,5/32,3/16	1.755	1.255	.475	.3125	.625	500	$23.50
MS20220-2	1/8,5/32,3/16	3.005	2.505	.475	.3125	.625	1680	$27.60
MS20220-3	1/8,5/32,3/16	4.255	3.755	.475	.3125	.625	2500	$33.50
MS20220-4	1/8,5/32,3/16	5.505	5.005	.475	.3125	.625	2500	$53.65
A-223	1/16,3/32,1/8	1.000	.688	---	.2500	.281	---	$6.50
A-224	1/16,3/32,1/8	1.750	1.375	---	.2500	.250	---	$7.50
A-138 (NAS)	1/16,3/32,1/8	1.250	.875	---	.2500	.265	---	$10.50
A-123 (NAS)	1/16,3/32,	2.000	1.500	---	.2500	.265	---	$11.60
A-124 (NAS)	1/16, 3/32	2.500	2.000	---	.2500	.265	---	$12.55
A-130 (NAS)	1/8, 5/32	2.000	1.375	---	.3750	.438	---	$9.85
A-120 (NAS)	5/32, 3/16	3.000	2.375	---	.3750	.438	---	$16.50
BB-128	3/16	2.500	1.875	---	.2500	.440	---	$31.50
BB-120	3/16	3.000	2.375	---	.2500	.440	---	$32.50

MCS378 SERIES PULLEYS FOR CESSNAS

MCS378-1

MCS378-2

MCS378-3

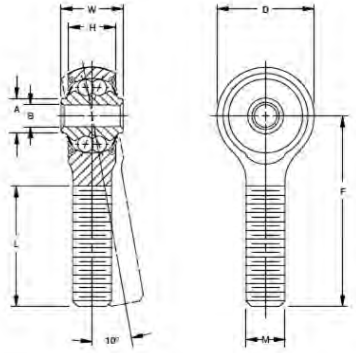
MCS378-4

MCS378-5

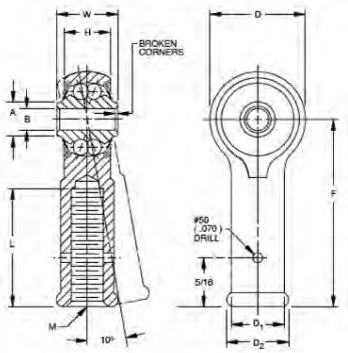
Aircraft Spruce stocks all pulleys required for Cessna single engine aircraft. Our MCS378 series pulleys replace the AN, NAS and S378 series pulleys commonly used on the Cessna aircraft. Pulley kits are available that contain all of the pulleys and cotter pins required for one aircraft.
Approved Replacements for Cessna Pulleys -Cessna Model/Series
120,140,140A,150,A150,A-A150,F150,FA150,FRA150,152,A152,F152,FA152,170,172,F172,FR172,172RG,FP172,P172,R172,175,177,177RG,F177RG,180,182,A182,F182,FR182,R182, TR182,T182,185,A185,188,A188, A A188,T188,205,206,P206,TU206,T206, TP206,U206,207,T207,208,210, P210, T210, T303, 310, T310, 320, 335, 336, 337, F337, P337, FP-337, T337, O-2, 340,401,402,404,411,414,421,425,441,500,501
*Replaces the listed Cessna part numbers in the specific aircraft illustrated parts catalogs. Installer must verify applicability prior to installation.

Model No.*	Replaces Cessna Part No.*	Part No.	Price
MCS378-1	S378-1 and S378-1L	05-03422	$23.50
MCS378-2	S378-2, A124, AN210-2B and NAS383-2	05-03423	$35.50
MCS378-3	S378-3, S378-3L, A130, AN210-3B, BB-208 and NAS383-3	05-03424	$26.95
MCS378-4	S378-4, A114, AN210-4B and NAS383-4	05-03425	$35.75
S378-5	S378-5	05-03426	$84.75

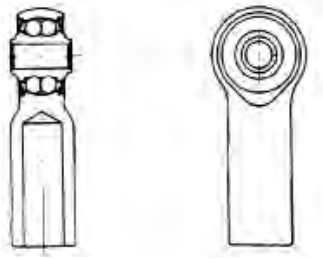
AN 946 MS 21151
MALE THREADED SHANK



AN 951 MS 21153
FEMALE THREADED SHANK



AN948 HOLLOW SHANK MS21152
SOLID SHANK MS21150



AP

Bearing No.	MS Dash No.	B Bore +.0000 -.0005 In.	D Outside Diam. +.010 -.010 In.	W Width Inner Ring +.000 -.010 In.	H Width Outter Ring +.010 -.010 In.	A Shoulder Diam. Inner Ring (Approx.) In.	F Bore Center to end of Shank +.010 -.010 In.	G Overall Dimen-sion +.010 -.010 In.	L Thread Length of Shank Hole Depth In.	J Bead or Hex Diam. Across Flats In.	K Shank Diam. +.010 -.010 In.	M Thread Or Drill Size Inches Size	M Thread Or Drill Size Inches Pitch Diam.	Balls No.	Balls Size	Lbs. Approx.	Weight Type Seal	Price Each
MALE THREAD - MS 21151																		
Precision series. Double row, ball, self-aligning. 10° permissible misalignment in either direction. These bearings are manufactured with an internal play of .0004 in. (.010mm) max. Inner and outer raceway surface finish = 8 micro in. AA max. Equipped with PTFE seals. Exposed surfaces except bore, cap, and seals arecadmium plated. Outer shank – 90,000 psi min. tensile strength. Prelubricated (refer to nomenclature page)																		
												10-32	.1697	20	1/8"	.04	Solid Seal	$63.75
REP3ML3	-1	.1900	.781	.437	.328	.281	1.375	1.766	.750			LH	.1667					
												10-32	.1697					
REP3MR3	-2	.1900	.781	.437	.328	.281	1.375	1.766	.750			RH	.1667	20	1/8"	.04	Solid Seal	$67.85
												3/8"-24	.3479					
REP3M6A	-3	.1900	.969	.500	.407	.304	2.031	2.516	1.313			RH	.3449	24	1/8"	.05	Solid Seal	$88.65
												3/8"-24	.3479					
REP3M6-2N	-4	.1900	.781	.437	.328	.281	1.375	1.766	.750			RH	.3449	20	1/8"	.05	Solid Seal	$54.75
												3/8"-24	.3479					
REP4M6	-8	.2500	.938	.593	.438	.345	1.875	2.344	1.125			RH	.3449	22	5/32"	.07	Plyo-Seal	$49.65
												3/8"-24	.3479					
REP4ML6	-9	.2500	.938	.593	.438	.345	1.875	2.344	1.125			LH	.3449	22	5/32"	.07	Plyo-Seal	$62.75
REP5M6	-10	.3125	1.25	.870	.686	.506	2.438	1.563	3/8-24			3/8"-24	.4050			.24		$65.80
FEMALE THREAD - MS 21153																		
Precision series. Double row, ball, self-aligning. 10° permissible misalignment in either direction. These bearings are manufactured with an internal play of .0004 in. (.010mm) max. Inner and outer raceway surface finish = 8 micro in. AA max. Equipped with PTFE seals. Exposed surfaces except bore, cap, and seals arecadmium plated. Outer shank – 90,000 psi min. tensile strength. Prelubricated (refer to nomenclature page)																		
												1/4"-28	.2298					
REPB3N*	-1	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.375	RH	.2268	20	1/8"	.05	Plyo-Seal	$64.75
												5/16"-24	.2884					
REPB3N2***	-2	.1900	.781	.437	.328	.281	1.375	1.766	.750	.438	.438	RH	.2854	20	1/8"	.06	Plyo-Seal	$72.75
												1/4"-28						
REP3F4	-3	.1900	.781	.500	.328	.281	1.375	1.766	.750	.438	.375	RH	.2268	20	1/8"	.06	Solid Seal	$65.75
												5/16"-24	.2884					
REP4F5	-6	.2500	.938	.593	.438	.345	1.469	1.938	.750	.438	.438	RH	.2854	22	5/32"	.07	Plyo-Seal	$62.75
HOLLOW SHANK - MS 21152																		
REP3H5**	-1	.1900	.781	.437	.328	.281	1.375	1.766	.875		.435		.272	20	1/8"	.06	Plyo-Seal	$69.75
RE4H6																	Solid Seal	$66.50
REP4H6	-2	.2500	.938	.593	.438	.345	1.875	2.344	1.219		.625		.386	22	5/32"	.12	Plyo-Seal	$66.50
REP4H8	-3	.2500	.938	.593	.438	.345	1.625	2.093	.875		.625	33/64	.515	22	5/32"	.08	Plyo-Seal	---
SOLID SHANK MS21150																		
REP3S7	-1	.19	.791	.437	.328	.281	1375				.430		SOLID	22	5/32"	.07	Plyo-Seal	$62.80
REP4S10	-2	.2500	.938	.593	.438	.345	1.875	2.344			.625		SOLID	22	5/32"	.16	Plyo-Seal	$66.75

*Dimensionally Same as Heim F34-14
**Dimensionally Same as Heim F31-14
***Dimensionally Same as Heim F35-14

Bearings with the letter "P" in part number are new manufacture, with Plyoseals.
Bearings without the letter "P" in part number are new surplus, with solid metal seals.

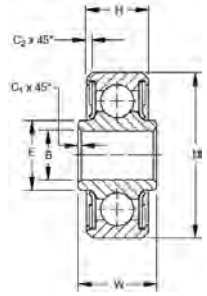
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

KP SERIES—AN200 / MS27640

Single row, ball, heavy duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps, and seals are cadmium plated. Prelubricated for life. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications

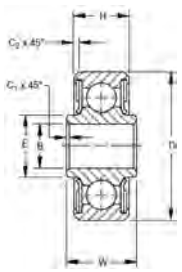


FAFNIR ANDMS AFBMA Bearing No.	Bore 27640	B Dia + .0000 - .0005 (in.)	D Outside Inner Ring +.0000 -.0005 (in.)	W Width Outer Ring +.000 -.005 (in.)	H Width Inner +.000 - .005 (in.)	A Shoulder Width Bore Ring (Approx.) (in.)	E Corner Chamfer x 45° Inner Ring O. D. + .015 - .000 (in.)	C Corner Chamfer x 45° Outer Ring +.015 - .000 (in.)	Balls No.	Balls Size	Pure Moment Rating Inch	Moment Constant 1 Lbs.	Weight Pounds Inch (Approx.)	Price Each
KP3L*	-3A	.1900	.6250	.245	.203	.280	.005	.010	10	5/32"	51.8	12.08	.01	$14.70
KP3	-3	.1900	.7774	.297	.270	.331	.005	.022	12	5/32"	93.7	10.13	.03	$20.80
KP4	-4	.2500	.9014	.484	.335	.390	.005	.032	11	1/4"	130	8.84	.04	$16.80
KP5	-5	.3125	1.2500	.558	.375	.469	.015	.032	9	5/16"	335	6.77	.09	$17.95
KP6	-6	.3750	1.4375	.620	.469	.591	.015	.032	10	11/32"	580	5.44	.15	$24.25
KP8	-8	.5000	1.6875	.620	.500	.768	.015	.044	10	11/32"	1060	4.46	.21	$49.75

* Stainless steel shield (for "Plya-Seals" use KP3A which has same bore and O.D.) Equiv. Thrust Load = Thrust + .8 Radial Load + Moment Constant x Moment in Inch Lbs.

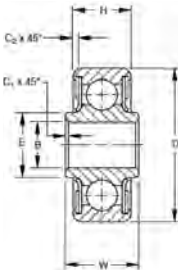
KP-A SERIES—AN201 / MS27641

Single row, ball, deep groove, medium duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps, and seals are cadmium plated. Prelubricated for life. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications



FAFNIR AND MS AFBMA Bearing No.	Bore 27641	B Dia + .0000 - .0005 (in.)	D Outside Inner Ring +.0000 -.0005 (in.)	W Width Outer Ring +.000 -.005 (in.)	H Width Inner +.000 - .005 (in.)	A Shoulder Dia. Bore Ring (Approx.) (in.)	E Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 (in.)	C Corner Chamfer x 45° Outer Ring +.015 -.000 (in.)	Balls No.	Balls Size	Max Static Non-Brinell Rating Radial Lbs.	Max Static Non-Brinell Rating Thrust Lbs.	Pure Moment Rating Inch-Lbs.	Moment Constant 1 Inch	Weight Pounds (Approx.)	Price Each
KP3A	3	.1900	.6250	.297	.234	.297	.005	.016	10	1/8"	800	600	51.8	12.08	.01	$12.60
KP4A	4	.2500	.7500	.281	.219	.380	.005	.016	12	1/8"	1100	900	73.8	10.17	.02	$12.85
KP5A	5	.3125	.8125	.297	.234	.415	.015	.016	14	1/8"	1300	1000	100	8.76	.02	$15.50
KP6A	6	.3750	.8750	.313	.250	.495	.015	.016	16	1/8"	1400	1100	130	7.68	.03	$13.50
KP8A	8	.5000	1.1250	.375	.313	.616	.015	.016	16	5/32"	2200	1700	250	6.14	.05	$16.70
EW1/2	NORMA	.5040	.9690	.250	.250										.03	----

KS SERIES— MS27645

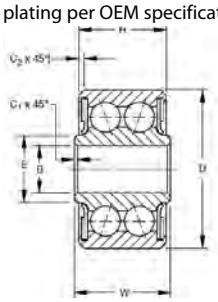


FAFNIR AND MS AFBMA Bearing No.	Bore 27645	B Diameter + .0000 - .0005 (in.)	D Outside Inner Ring +.0000 -.0005 (in.)	W Width Outer Ring +.000 -.005 (in.)	H Width Inner +.000 - .005 (in.)	A Shoulder Width Bore Ring (Approx.) (in.)	E Corner Chamfer x 45° Inner Ring O.D. +.015 -.000 (in.)	C Corner Chamfer x 45° Outer Ring +.015 -.000 (in.)	F (Approx.)	Balls No.	Balls Size	Maximum Static Rating Radial Lbs.	Maximum Static Rating Thrust Lbs.	Weight Pounds (Approx.)	Price Each
KSP3L	3A	.1900	.6250	.245	.203	.257	.005	.016		13	3/32"	400	100	.01	$15.70
KSP3	3	.1900	.7774	.297	.270	.342	.005	.022	.275	12	1/8"	800	200	.03	$18.65
KSP4	4	.2500	.9014	.484	.335	.400	.005	.032	.408	12	5/32"	1100	300	.04	$21.70
KSP5	5	.3125	1.2500	.558	.375	.562	.015	.032	.408	13	3/16"	1400	300	.10	$22.95
*KS6A	6A	.3750	.8750	.313	.250	.475	.016	.016	.277	15	1/8"	1000	200	.03	$21.50

* NOTE: These bearings are self-aligning for 10° in either direction except for KS6A (not AN200) which is self-aligning for 8° in either direction.

DP SERIES—AN207 / MS27644

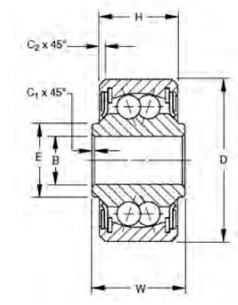
Double row, ball, light and heavy duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps and seals are cadmium plated. Prelubricated for life. For use where high moment rigidity is required, DPP-W series only. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications



FAFNIR Bearing No.	MS 27644	B Bore +.0000 -.0005 (in.)	D Dia. +.0000 -.005 (in.)	W Outside Inner Ring +.000 -.005 (in.)	H Width Outer Ring +.000 (Approx) (in.)	A Shoulder Width Inner Ring (Approx.) (in.)	E Corner Chamfer x 45° Diameter Bore +.015 -.000 (in.)	C Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 (in.)	Balls No.	Balls Size	Maximum Static Non-Brinell Radial Lbs.	Maximum Static Non-Brinell Thrust Lbs.	Weight Pounds (Approx.)	Price Each
DPP3	-3	.1900	.7774	.495	.473	.302	.005	.02	20	5/32"	2500	1700	.04	$37.50
DPP4	-4	.2500	.9014	.620	.491	.410	.005	.032	22	5/32"	3000	1800	.06	$27.80
DPP5	-5	.3125	1.2500	.745	.687	.469	.015	.032	20	1/4"	6900	4200	.17	$41.75
DPP6	-6	.3750	1.4375	.870	.794	.551	.015	.032	18	5/16"	9700	5800	.26	---
DPP8	-8	.5000	1.6875	.932	.856	.735	.015	.044	20	11/32"	13000	7800	.38	$71.25

DSP SERIES—AN206 / MS27643

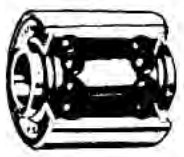
Double row, ball, self-aligning, heavy duty. PTFE seals and CRES sealcaps. Exposed surfaces except bore, caps, and seals are cadmium plated. Prelubricated for life. Also offered with CRES 440C material and/or zinc nickel plating per OEM specifications



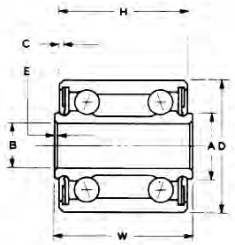
FAFNIR Bearing No.	MS 27643	B Bore +.0000 -.0005 (in.)	D Dia. +.0000 -.005 (in.)	W Outside Inner Ring +.000 -.005 (in.)	H Width Outer Ring +.000 (Approx.) (in.)	A Shoulder Width Inner Ring (Approx.) (in.)	E Corner Chamfer x 45° Dia. Bore +.015 -.000 In.	C Corner Chamfer x 45° Inner Ring O. D. +.015 -.000 In.	Balls No.	Balls Size	Maximum Static Non-Brinell Radial Lbs.	Maximum Static Non-Brinell Thrust Lbs.	Weight Pounds (Approx.)	Price Each
DSP3	-3	.1900	.7774	.500	.392	.304	.005	.022	24	1/8"	1000	200	.04	$29.95
DSP4	-4	.2500	.9014	.687	.464	.430	.005	.032	30	1/8"	13000	300	.06	$32.60
DSP5	-5	.3125	1.2500	.812	.656	.515	.015	.032	28	3/16"	2600	600	.16	$41.65
DSP6	-6	.3750	1.4375	.937	.750	.564	.015	.032	28	7/32"	3600	800	.24	$79.60
DSP8	-8	.5000	1.6875	1.000	.812	.775	.015	.044	30	1/4"	5000	1000	.36	$178.65

BEARINGS REGREASERS – GREASE FITTINGS

DW SERIES BEARINGS (MS 27647)



- Extra Wide, Double Row, Ball
- Equipped with removable Plya-Seals
- Dimensionally interchangeable with the DW series, the GDW series is lubricatable through holes and a groove in the outer ring.



FAFNIR AND MS AFB MA Bearing No.	Bore 27647	B Diameter +.0000 - .0005 Inches	D Outside Inner Ring +.0000 -.0005 Inches	W Width Outer Ring +.000 -.005 Inches	H Width Inner +.000 - .005 Inches	A Shoulder Width Bore Ring (Approx.) Inches	E Corner Chamfer x 45° Inner Ring O.D. +.015 -.000 Inches	C Corner Chamfer x 45° Outer Ring +.015 - .000 Inches	Balls No.	Balls Size	Pure Moment Rating Inch-Lbs.	Moment Constant 1 Inch	Weight Pounds (Approx.)	Price Each
† DW4K2*	-4A	.2500	.6250	.562	.500	.344	.016	.016	16	3/32″	121	3.49	.025	$30.85
DW4K*	-4	.2500	.7500	.875	.750	.435	.005	.016	14	9/64″	365	2.27	.04	$31.85
DW5	-5	.3125	.8750	.9375	.8125	.472	.005	.016	26	9/64″	830	1.85	.07	$33.75
DW6	-6	.3750	1.0625	1.1875	1.0625	.576	.005	.016	24	3/16″	1830	1.38	.12	$66.75
DW8	-8	.5000	1.4375	1.5000	1.3750	.715	.005	.032	22	17/64″	4330	1.07	.29	$71.25

EQUIVALENT THRUST LOAD = THRUST + .6 RADIAL LOAD + MOMENT CONSTANT x MOMENT IN INCH-LBS.
*Bearing stamped DW4K. †Bearing stamped DW4K2.
These bearings are not to be used as track rollers, cam follower rolls and the like.
* RETAINER TYPE

AP

SINGLE ROW, BALL, DOUBLE SEATS

KP3AR11-2

K3L3

K3L2

FAFNIR AND AFBMA Bearing Number	B Bore +.0000 -.0005 Inches	D Outside Diameter +.000 -.002 Inches	W Width InnerRing +.000 -.005 Inches	H Width OuterRing +.000 -.005 Inches	A Shoulder Diameter Inner Ring (Approx.) Inches	E Corner Chamfer x 45° Inner Ring Bore +.015 -.000 Inches	C Corner Outer Ring O.D. Inches	R Radius Outside Diameter Contour	Balls No.	Balls Size	Maximum Safe Working Load Radial Lbs.	Weight Pounds (Approx)	Price Each
K3L3	.1900	.635	.245	.203	.280	.005	.020 Rad.	.550	10	1/8″	200	.01	$38.75
								.500					
K3LR48	.1900	.687	.245	.203	.280	.005	.020 Rad.	3.015	11	5/32″	200	.20	---
							.015 Rad.	2.985					
KP4R16	.2500	.901	.484	.335	.390	.005	.005 x 45°	1.000	11	5/32″	400	.04	$139.75
							.015 x 45°	1.000					
KP4R16-2	.2500	1.000	.390	.335	.390	.005	.015 x 45°	.990	11	5/32″	500	.06	$49.90

The maximum safe working load is that radial load to obtain 100,000 feet peripheral travel life.

GREASE FITTINGS

Surface Check fittings of the MS15000 series have spring-loaded ball check in the tip. Conform to MIL-F-3541.

MS15001-1 MS15001-4 MS15003-5 MS15003-6 AS15002-1P AS15003-5P

MS No.	AS No.	Price	Surplus No.	Price	Thread	Shank L	Eff. Thread L	Overall L	Tip Angle
MS15001-1	AS15001-1P	$3.80	04-02325	$0.20	1/4-28 Tapered	3/16″	.109	1/2″	0°
MS15001-2	AS15001-2P	$4.85	04-02326	$0.70	1/4-28 Tapered	5/8″	.20	31/32″	0°
MS15001-3	AS15001-3P	$5.35	04-02327	$0.72	1/4-28 Tapered	13/64″	.11	13/16″	45°
MS15001-4	AS15001-4P	$4.75	04-02313	$0.59	1/4-28 Tapered	3/16″	.109	1/2″	90°
MS15002-1	AS15002-1P	$3.85	04-02328	$0.36	1/4-28 Tapered	5/32″	.07	33/64″	0°
MS15002-3	AS15002-3P	$5.40	04-02329	$1.00	1/4-28 Tapered	1/8″	.07	39/64″	45°
MS15003-1	AS15003-1P	$4.80	04-02330	$0.36	1/8 NPT	19/64″	.19	11/16″	0°
MS15003-2	AS15003-2P	$6.00	04-02331	$1.28	1/8 NPT	25/32″	.19	1-1/4″	0°
MS15003-3	AS15003-3P	$5.70	04-02332	$1.40	1/8 NPT	19/64″	.19	29/32″	30°
MS15003-4	AS15003-4P	$5.35	04-02333	$0.86	1/8 NPT	19/64″	.19	57/642″	45°
MS15003-5	AS15003-5P	$4.55	04-02315	$0.86	1/8 NPT	9/32″	.188	31/32″	65°
MS15003-6	AS15003-6P	$4.70	04-02314	$0.83	1/8 NPT	9/32″	.188	15/16″	90°

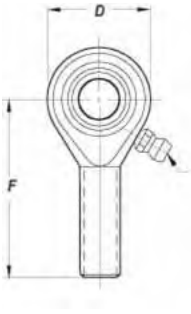
ACS BEARING REGREASERS

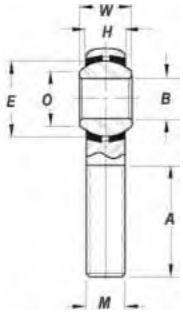
The ACS bearing regreasers restore bearings, rod ends and pulleys to like-new condition. O-ring in base of regreaser provides positive seal when bearing is secured by the threaded center post. Grease, entering under pressure at the grease fitting, is forced to flow through the bearing, flushing out the old grease and dirt, and recharging the bearing with fresh grease. Available in five sizes. Non-Anodized.

Bearing Regreaser No.	Part No.	Bearing Size O.D.	Bearing Size Bore	Price Each
3	10650-3	3/4″	3/16″	$14.50
4	10650-4	1″	1/4″	$17.65
5	10650-5	1-1/4″	5/16″	$18.65
6	10650-6	1-1/2″	3/8″	$18.75
8	10650-8	1-1/2″	1/2″	$25.90
Complete Set of Five - P/N 12-11500				$89.50

LUBRICAPS

These bright red Lubricaps are made of molded rubber and are used as grease fitting covers. The internal lip holds the cap in place and keeps out dirt, sand, and fluids. M-24529 (20% discount for 100/each) P/N 04-01940 .....$0.48





HEIM ROD ENDS MALE THREADED
M AND HM SERIES

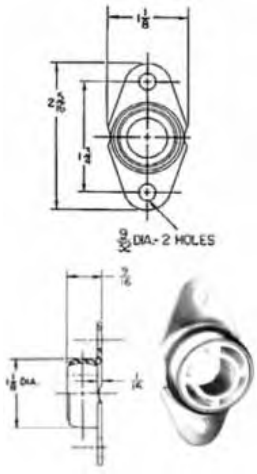
Rod Ends male threaded (HM M Series)

- Outer Member: Aircraft Quality Carbon Steel, Magnetic particle inspected, with protective coating for corrosion resistnce.
- Ball: 52100 Alloy Steel, heat treated, chrome plated.
- Inserts: Brass, 16 size has one piece carbon steel race.

Heim "M" and "MD" series bearings are now manufactured in magnafluxed version only. As old stock is depleted, magnafluxed equivalents will be furnished as substitutes at current (higher) prices unless otherwise requested on the order.

"L" in rod end number designates left hand thread. In this series, the "D" in rod end number (MD35 14) denotes drilled hole in the shank. Add suffix "G" to indicate lubricator is required. Example: HM-SG. Add suffix "FG" lo indicate flush type lubricator is required. Example: M34-14FG. Lubricator (G) (FG) available with minimum qty. required. Please Call for Pricing.

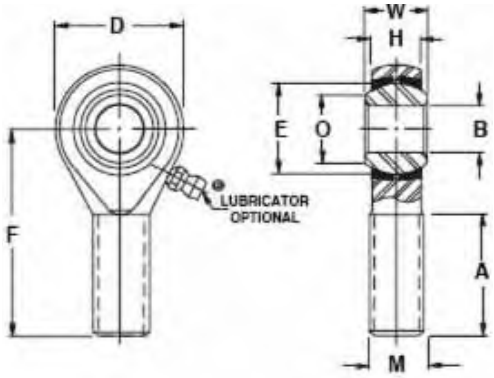
Rod End No.	Equiv. Spherco No.	DIMENSIONS											Max Static Radial Load in Pounds Aprox.	Approx. Weight in Pounds	Price Each
		Bore	ball Width	Housing Width	Ball Flat Diam.	Head Diam.	Length to center of ball	Overall Length	Other Dimensions						
		B	W	H	O	D	F	G	A	N	Ball Diam.	M			
		+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min	Drill Diam.		Class 3A			
M34-14M	NONE	.1900	.437	.328	.273	.750	1.560	1.935	1.000		33/64	1/4"-28	1,695	.05	$29.80
MD35-14	NONE	.1900	.437	.328	.273	.875	1.375	1.812	.750	#33	33/64	5/16"-24	2,184	.07	$51.75
MDL35-14										.113		UNF			$24.20
MD36-14	NONE	.1900	.437	.328	.273	.750	1.375	1.750	.750	#33	33/64	3/8"-24	2,848	.07	$102.95
MDL36-14										.113		UNF			$41.25
MD36-16M	NONE	.1900	.500	.375	.321	.812	1.812	2.219	1.062	#29	19/32	3/8"-24	2,769	.08	$74.90
MDL36-16										.136		UNF			---
M44-14	NONE	.2500	.437	.304	.354	.812	1.562	1.968	1.000		9/16	1/4"-28	1,695	.06	$87.65
ML44-14												UNF			---
MD46-15	NONE	.2500	.484	.335	.395	.875	2.312	2.750	1.500	#29	5/8	3/8"-24	3,151	.10	$37.70
MDL46-16										.159		UNF			---
HM-2M	NONE	.1250	.250	.187	.187	.469	.937	1.172	.500		5/16	6-32	452	.02	$54.95
HML-2M												UNC			$19.40
HM-2AM	NONE	.1562	.281	.219	.249	.562	1.125	1.406	.625		3/8	8-32	666	.02	---
HML-2AM												UNC			$205.95
HM-3M	TRE-3	.1900	.312	.250	.306	.625	1.250	1.563	.750		7/16	10-32	910	.03	$27.50
HML-3M	TREL-3											UNF			$210.95
HM-4M	TRE-4	.2500	.375	.281	.355	.750	1.562	1.937	1.000		33/64	1/4"-28	1,695	.05	$23.80
HML-4M	TREL-4											UNF			$29.50
HM-5M	TRE-5	.3125	.437	.344	.447	.875	1.875	2.312	1.250	#33	5/8	5/16"-24	2,205	.08	$35.85
HM-6M	TRE-6	.3750	.500	.406	.517	1.000	1.938	2.438	1.250	#21	23/32	3/8"-24	3,172	.11	$41.50
HML-6M	TREL-6									.159		UNF			$99.85
HM-7M	TRE-7	.4375	.562	.437	.586	1.125	2.125	2.688	1.375	#21	13/16	7/16"-20	4,633	.16	$33.40
HML-7M	TREL-7									.159		UNF			---
HM-8M	TRE-8	.5000	.625	.500	.698	1.312	2.438	3.094	1.500	#3	15/16	1/2"-20	5,876	.24	$99.65
HML-8M	TREL-8									.213		UNF			$209.95
HML-8M New Surplus.....P/N 04-02269.....$34.50															
UNF= Universal Fine, UN=Universal Coarse															



TRIANGLE MFG. BEARINGS

Manufactured by Triangle Mfg. Co., these bearings are spherical on the outside and are contained in a flanged, stamped metal cage, so they provide sliding, rotating, and pivoting motion. The bearings are available in nylon, bronze, or iron as shown in the table below. The FMN10 is used in the wing roots and on the torque tubes inside the fuselage of the Cozy Mark IV.

Part No.	I.D.	Bearing Material	Price Each	Part No.	I.D.	Bearing Material	Price Each
FMN4	1/4"	Nylon	$1.46	FM1508P	1/2"	Iron	$1.44
FMN5	5/16"	Nylon	$1.50	FM1408P	1/2"	Bronze	$3.30
FMN6	3/8"	Nylon	$0.86	FMN10	5/8"	Nylon	$0.80
FM1406P	3/8"	Bronze	$4.50	FM1510P	5/8"	Iron	$1.47
FMN7	7/16"	Nylon	$1.61	FM1410P	5/8"	Bronze	$3.50
FMN8	1/2"	Nylon	$0.96	FMN12	3/4"	Nylon	$0.81
				FM1512P	3/4"	Iron	$1.30



ROD END MALE THREADED
HMX EXTRA CAPACITY SERIES

SPECIFICATIONS:

Outer Member: SAE 4130 steel heat treated to 175,000 PSI Cadium Plated.

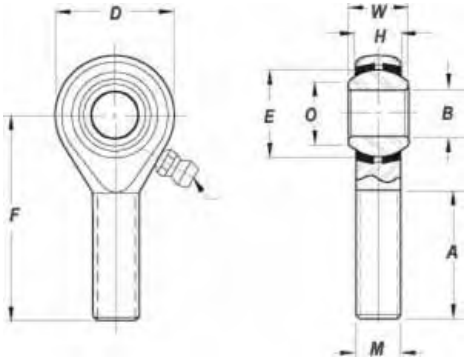
Ball: SAE 52100 Steel, Heat Treated, Chrome Plated.

Inserts: Aluminum Bronze

"L" in rod end number designates left hand thread.
Add letter 'M' to dash number for magnafluxed rod ends.
This series is equipped with lubricators as shown.
Add suffix "FG" to indicate flush type lubricator is required.
Example: HMX-4FG. Additional costs will apply.
Note: See Pg 150 for Aurora Equivalents to Heim HM & HF Series.

Rod End Number	Equiv Spherco Number	DIMENSIONS											Maximum Static Load in Lbs. approx		Approx. Weight in Lbs.	Price Ea.
		Bore	Ball Width	Housing Width	Ball Flat Dia.	Head Dia.	Length to Cnte of Ball	Over-All Length	Other Dimensions							
		B	W	H	O	D	F	G	A	N		M				
		+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min.	Drill Dia.	Ball Dia.	Class 3A	Radial	Axial		
HMX-4G	ARE 4-20	.2500	.375	.281	.355	.750	1.560	1.937	1.000	#33	33/64	5/16"-24	3,260	1,710	.06	---
HMXL-4G	AREL-20									.113		UNF				---
HMX-5G	ARE- 5-20	.3125	.437	.344	.447	.875	1.375	2.312	1.250	#21	5/8	3/8"-24	4,920	2,376	.09	$51.60
												UNF				
HMX-6G	ARE 6-20	.3750	.500	.406	.517	1.000	1.375	2.438	1.250	#21	23/32	7/16"-20	7,240	2,946	.13	$43.50
HMX-7G	ARE 7-20	.4375	.562	.437	.586	1.125	1.812	2.688	1.375	#21	13/16	1/2"-20	7,620	3,367	.18	$218.95
HMXL-7G	AREL 7-20									.159		UNF				$891.00
HMX-8G	ARE 8-20	.5000	.625	.500	.698	1.312	1.562	3.094	1.500	#3	15/16	5/8"-18	11,920	4,074	.30	$58.75
HMXL-8G	AREL 8-20									.213		UNF				$35.70

New Surplus HMX-8G ..... P/N 06-01661 ..... $67.85



HME SERIES

SPECIFICATIONS:

Outer Member: Carbon steel-protective coated for corrosion resistance.

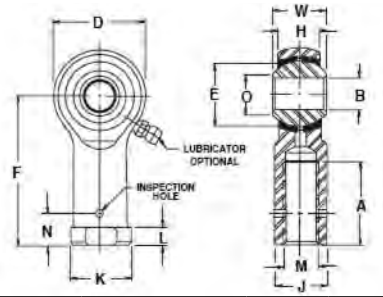
Ball: Carbon steel-heat treated, chrome plated.
Inserts: Aluminum.

Liner: Self lubricating UNIFLON.

"L" in rod end number designates left hand thread.
"R" in part number indicates woven uniflon. Example: HMR-3.
*Uniflon® — The Heim Universal Corporation's trademark for teflon® lined rod ends and spherical bearings.

Part No.	Thread Type	SEE DIAGRAM ABOVE									Price
		B	W	H	D	F	A	Thread Size	E	O	
HME-3M	Right Hand	.1900	.312	.250	.625	1.250	.750	.1900-32	.437	.306	-
HMLE-3M	Left Hand	.1900	.312	.250	.625	1.25	.750	.1900-32	.437	.306	-
HME-4M	Right Hand	.2500	.375	.281	.750	1.562	1.000	.2500-28	.515	.353	$31.50
HMLE-4M	Left Hand	.2500	.375	.281	.750	1.562	1.000	.2500-28	.515	.353	-
HME-5M	Right Hand	.3125	.437	.344	.875	1.875	1.250	.3125-24	.625	.447	-
HMLE-5M	Left Hand	.3125	.437	.344	.875	1.875	1.250	.3125-24	.625	.447	$136.95
HME-6M	Right Hand	.3750	.500	406	1.000	1.938	1.250	.3750-24	.718	.516	-
HMLE-6M	Left Hand	.3750	.500	406	1.000	1.938	1.250	.3750-24	.718	.516	-
HME-7M	Right Hand	.4375	.562	.437	1.125	2.125	1.375	.4375-20	.812	.586	-
HMLE-7M	Left Hand	.4375	.562	.437	1.125	2.125	1.375	.4375-20	.812	.586	-
HME-8M	Right Hand	.5000	.625	.500	1.312	2.438	1.500	.5000-20	.937	.698	-
HMLE-8M	Left Hand	.5000	.625	.500	1.312	2.438	1.500	.5000-20	.937	.698	-

ROD ENDS FEMALE THREADED (F & HF SERIES)



SPECIFICATIONS:

Outer Member: Aircraft Quality Steel, Cadmium Plated.

Ball: SAE 52100 Steel.

Inserts: Naval Bronze

"L" in rod end number designates left hand thread. Add suffix "G" to indicate lubricator is required. Example: F35-14G. Add suffix "FG" lo indicate flush type lubricator is required. Example: HF-4FG. Add $3.00 to price for lubricator (G) (FG).

Note: Standard Bearings Furnished Without Inspection Hole. If Hole Needed, Add "M" to P/N & At Higher Cost.

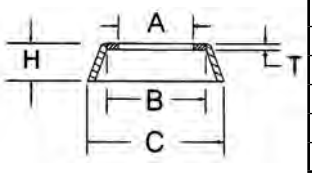
PN	Bore	Ball Width	Housing Width	Head Dia.	Length to ctr. of ball	Thread Length	Thread Size	Ball Di-ameter	Ball Flat Diam-eter	Other Dimensions			Max Rad. Load	Wgt.	Price
	B	W	H	D	F	A	M	E	O	K	N	L			
	+.0015 -.0005	+.000 -.005	+.005 -.005	+.010 -.010	+.010 -.010	+.062 -.031	UNF-3B	REF	REF	+.010 -.010	+.020 -.020	+.010 -.010			
FL34-14M	.1900	.437	.328	.750	1.375	.750	.2500-28	.515	.273	.468	.312	.187	2850	.06	$99.85
F34-14M	.1900	.437	.328	.750	1.375	.750	.2500-28	.515	.273	.468	.312	.187	2850	.06	$18.50
F347-14M	.1900	.437	.328	.750	1.062	.437	.2500-28	.515	.273	.375	-	-	2850	.05	$38.90
F34-16M	.1900	.500	.375	.812	1.375	.750	.2500-28	.593	.321	.468	.312	.187	2750	.08	$76.50
F35-14M	.1900	.437	.328	.750	1.375	.750	.3125-24	.515	.0273	.500	.406	.187	2850	.07	---
FL35-14M	.1900	.437	.328	.750	1.375	.750	.3125-24	.515	.273	.500	.406	.187	2850	.07	$211.95
F44-14M	.2500	.437	.304	.812	1.375	.750	.2500-28	.562	.354	.468	.312	.187	2850	.07	$89.75
FL44-14M	.2500	.437	.304	.812	1.375	.750	.2500-28	.562	.354	.468	.312	.187	2850	.07	$58.90
F45-19M	.250	.593	.438	.938	1.469	.750	.3125-24	.687	.347	.500	.406	.187	3700	.11	$74.85
HF-3M	.1900	.312	.250	.625	1.062	.562	.1900-32	.437	.306	.406	-	.187	1850	.03	$24.80
HFL-3M	.1900	.312	.250	.625	1.062	.562	.1900-32	.437	.306	.406	-	.187	1850	.03	$99.75
HF-4M	.2500	.375	.281	.750	1.312	.750	.2500-28	.515	.353	.468.	-	.187	2700	.05	$35.85
HFL-4M	.2500	.375	.281	.750	1.312	.750	.2500-28	.515	.353	.468.	-	.187	2700	.05	$49.25
HF-5M	.3125	.437	.344	.875	1.375	.750	.3125-24	.625	.447	.500	-	.187	3350	.08	$28.60
HFL-5M	.3125	.437	.344	.875	1.375	.750	.3125-24	.625	.447	.500	-	.187	3350	.08	$99.85
HFL-2A	.1562	.281	.219	.562	.875	.375	.1640-32	-	.249	-	-	-	1700	.02	$19.60

*F34-14 Dimensionally the same as Fafnir REPB3N. **F35-14 Dimensionally the same as Fafnir REPB3N2

SEALS-IT ROD END SEALS

Protect the spherical bearing of rod ends. This patented design features a neoprene rubber seal bonded directly to an aircraft quality washer. The seal encapsulates the bearing and flexes accordingly with any change in angularity. This provides unprecedented protection from dirt and other types of contamination which may severely shorten the life of these important components.

The rubber is engineered for wide range of temperature variation and is impervious to gasoline, oils, and most other common fluids. The steel washer is plated for protection from corrosion.



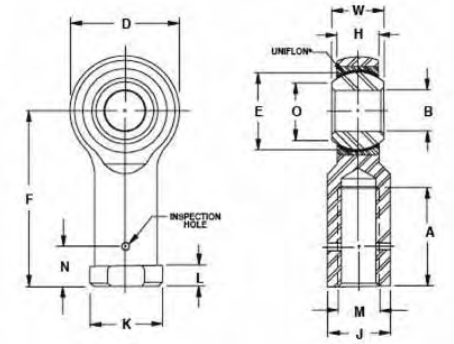
Size	A	B	C	H	T	Part No.	Price
3/16	.200	.326	.442	.096	.020	05-01434	---
1/4	.257	.375	.565	.125	.025	05-2500	$2.45
5/16	.325	.450	.710	.200	.047	05-3125	$2.45
3/8	.386	.525	.775	.220	.047	05-3750	$2.45
7/16	.445	.610	.910	.250	.047	05-4375	$2.45
1/2	.515	.710	1.125	.250	.047	05-5001	$2.45
5/8	.638	.900	1.250	.250	.047	05-6250	$3.05
3/4	.763	1.00	1.375	.375	.047	05-7500	$3.15

UNIFLON LINED

HFE M SERIES

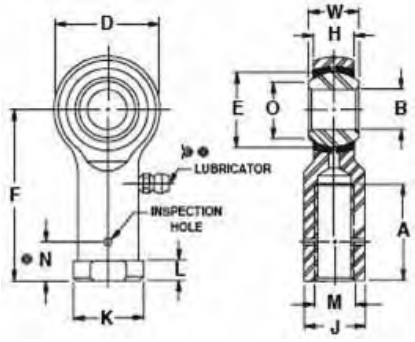
SPECIFICATIONS:
Outer Member: Carbon steel, magnetic particle inspected, with protective coating for corrosion resistance.
Ball: 52100 Alloy steel, heat treated, chrome plated.
Race: Aluminum.
Liner: Self lubricating UNIFLON.

The letter "L" indicates Left Hand thread.



Rod End No.	Dimensions														Max. Static Radial Load (lbs.)	Approx. Wt. (lbs.)	Price Each
	Bore	Ball Width	Housing Width	Ball Flat Dia.	Head Dia.	Length to ctr. of ball	Overall Length	Other Dimensions									
	B	W	H	O	D	F	G	A	K	J	N	L		M			
	+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min	+.010 -.010	+.010 -.010	+.005 -.005	+.010 -.010	Ball Diam.	Class 3B			
HFE-3M														10-32 UNF			$62.75
HFLE-3M	.1900	.312	.250	.306	.625	1.062	1.375	.562	.406	.312	.312	.187	.437		865	.03	---
HFE-4M			.											1/4"-28 UNF			$48.85
HFLE-4M	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	.515		1,550	.05	$99.50
HFE-5M														5/16"-24 UNF			$72.85
HFLE-5M	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	.625		2,080	.08	---
HFE-6M														3/8"-24 UNF			---
HFLE-6M	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	.718		2,950	.12	---
HFE-7M														7/16"-20 UNF			---
HFLE-7M	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	.812		3,160	.17	---
HFE-8M														1/2"-20 UNF			$87.75
HFLE-8M	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	.937		4,925	.26	---

ROD ENDS FEMALE THREADED



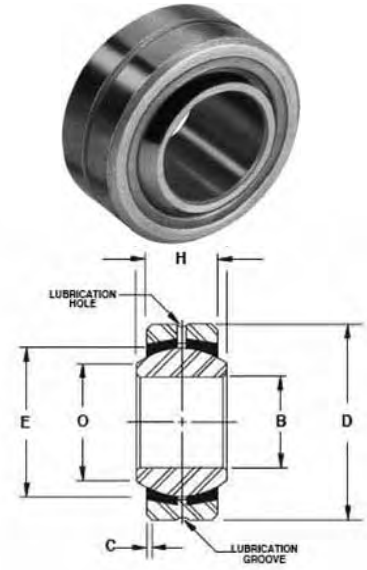
HFX EXTRA CAPACITY SERIES

SPECIFICATIONS:
Outer Member: SAE 4130 steel heat treated to 175,000 PSI Cadium Plated.

Ball: SAE 52100 Steel, Heat Treated, Chrome Plated.
Inserts: Aluminum Bronze.
"L" in rod end number indicates left hand thread.
"G" in the rod end number indicates lubricator.
All rod ends in this series are magnafluxed, and are stamped with the letter "M".
This series is equipped with lubricators as shown.
Add suffix "FG" to indicate flush type lubricator is required. Example: HFX-4FG.

Lubricator (G) (FG) available with minimum qty. required. Please call for pricing.

Rod End No.	Dimensions															Max. Static Radial Load (lbs.)		Approx. Weight (Lbs.)	Price Each
	Bore	Ball Width	Housing Width	Ball Flat Dia.	Head Dia.	Length to ctr. of ball	Overall Length	Other Dimensions											
	B	W	H	O	D	F	G	A	K	J	N	L		M					
	+.0015 -.0005	+.000 -.005	+.005 -.005		+.010 -.010	+.010 -.010	+.010 -.010	Min	+.010 -.010	+.010 -.010	+.005 -.005	+.010 -.010	Ball Diam.	Class 3B		w/ lubi-cator	w/o lubri-cator		
HFX-4G	.2500	.375	.281	.355	.750	1.312	1.687	.750	.468	.375	.312	.187	.515	1/4"-28		3,260	6,680	.06	$34.25
HFX-5G	.3125	.437	.344	.447	.875	1.375	1.812	.750	.500	.437	.406	.187	5/8	5/16"-24 UNF		4,920	8,410	.08	$46.50
HFXL-5G																			---
HFXL-6G	.3750	.500	.406	.517	1.000	1.625	2.125	.937	.687	.562	.469	.250	23/32	3/8"-24		7,240	11,160	.14	---
													UNF						
HFX-7G	.4375	.562	.437	.586	1.125	1.812	2.375	1.062	.750	.625	.531	.250	13/16	7/16"-20		7,620	13,660	.18	---
HFXL-7G														UNF					$78.95
HFX-8G	.5000	.625	.500	.698	1.312	2.125	2.781	1.187	.875	.750	.594	.250	15/16	1/2"-20		11,920	19,340	.29	$49.85
HFXL-8G														UNC					---



SPHERICAL BEARINGS
SERIES LS, LSS, LHA

SPECIFICATIONS:

LS SERIES
Outer Member: Carbon Steel, with protective coating for corrosion resistance on all surfaces exposed after installation.
Ball: SAE 52100 Steel, Heat Treated.
Inserts: Brass.

LSS SERIES
Outer Member: 4130 or 4340 Alloy steel, heat treated, with protective coating for corrosion resistance on all surfaces exposed after installation.
Ball: 52100 Alloy steel, heat treated, chrome plated.
Inserts: Copper alloy

LHA SERIES
Outer Member: 4130 or 4340 Alloy steel, heat treated, with protective coating for corrosion resistance on all surfaces exposed after installation.
Ball: 52100 Alloy steel, heat treated, chrome plated.

Spherical Bearing No.	Dimensions							Max Static Radial load In Pounds Approx.	Approx. Weight in Pounds	Price Each
	Bore B +.0000 -.0005	Outside Diam. D +.0000 -.0005	Ball Width W +.000 -.005	Housing Width H +.000 -.005	Chamfer C +.000 -.005	Bsll Diameter E REF	Ball Flat Diameter O REF			
LS-3	.1900	.6250	.281	.187	.016	.406	.293	2960	.02	$21.50
LS-4	.2500	.7500	.375	.281	.016	.515	.354	5245	.04	$24.90
LS-5	.3125	.8750	.437	.313	.016	.625	.447	6550	.05	$29.80
LS-6	.3750	1.0000	.500	.375	.016	.718	.517	8605	.08	$27.75
LS-8	.5000	1.3125	.687	.531	.044	.937	.637	15600	.18	---
LSS-2	.1650	.4687	.250	.187	.235	.020	11/32	2,000	.01	---
LSS-3	.1900	.5625	.281	.218	.020	.406	.293	2750	.02	$48.50
LSS-4	.2500	.6562	.343	.250	.022	.500	.364	4200	.02	$42.75
LSS-5	.3125	.7500	.375	.281	.022	.562	.419	5800	.03	$38.50
LSS-6	.3750	.8125	.406	.312	.032	.625	.475	7150	.04	$43.50
LSS-8	.5000	1.000	.500	.390	.032	.781	.600	11200	.07	$36.30
LHA-2	.1650	.4687	.250	.187	.020	.343	.235	4400	.01	$25.90
LHA-3	.1900	.5625	.281	.218	.020	.406	.293	6480	.02	$48.65
LHA-4	.2500	.6562	.343	.250	.022	.500	.364	10000	.02	$48.65
LHA-6	.3750	.8125	.406	.312	.032	.625	.475	18750	.04	$134.60
LHA-8	.5000	1.000	.500	.390	.600	.032	25/32	26,900	.07	---

The allowable static axial loads are one-fourth of radial loads given above.

AP

TIMKEN WHEEL BEARINGS

Part No.	Description	Price
04-02054	Bearing Cup 13830	$41.80
04-02055	Bearing Cup LM29710	$12.50
04-02164	Bearing Cone 07100	$23.80
04-02165	Bearing Cup 07196	$11.50
04-02166	Bearing Cup LL217810	$349.00
04-02167	Bearing LL217849	$243.95
04-02168	Bearing Cup LM67010	$7.90
04-02169	Bearing Cone LM67048	$15.50
04-02224	Bearing A-4059S .59 ID New Surplus	$9.75
04-02229	Bearing 07204	$28.80
04-02230	Bearing 08118	$87.85
04-02231	Bearing 19150	$68.75
05-29749	Bearing LM29749	$59.85
06-00607	Bearing A2126	$21.75
06-00642	Cup / Race LM11910	$5.90
06-03300	Azusa 6" Alum. Timken Bearing	$59.50
04-03400	Azusa 6" Alum. 3/4 Timken Bearing	$149.95
08125	Bearing 08125	$48.60
8231	Bearing Cup 08231	$19.99
13286	Bearing Cone A-4050	$34.50
13889	Bearing 13889	$39.85

SYMMCO BEARINGS

Sintered Bronze Oil-Impregnated Special Flanged Bearings.

Description	Length	Symmco No.	Part No.	Price
SF610-3 Bushing	3/16	SF-610-3	04-00098	$0.19
SF-610-8 Bearing	1/2	SF-610-8	04-01570	$0.79
SF-610-8 Bearing	3/8	SF-1014-6	05-1014-6	$0.38
SF-2024-8 Bearing	1/2	SF-2024-8	04-00004	$0.95
SF-4084-20 Bearing	1-1/4	SF-4048-20	04-00159	$4.35
SF-4084-8 Bearing	1/2	SF-4048-8	04-02171	$3.60

AURORA BEARINGS

In 1971 Aurora Bearing Company entered the rod end and spherical bearing market and soon became a major force in the rod end industry. Over the years, Aurora Bearing has retained its original business philosophy of furnishing a quality product at competitive prices and with service much faster than the competition. Aurora offers a complete line of standard and spherical bearings. In addition, special bearings can be designed and manufactured on request. Listed below are many of the most popular Heim bearing part numbers and the equivalent Aurora Bearing part number. On many of these items, the Aurora bearing offers substantial savings and faster delivery time. Unlisted Aurora bearings, quantity discounts and complete Aurora Bearing Company brochure available on request.

The below specifications apply to most but not all Aurora bearings. Note: Bearings not furnished standard with are available with grease fittings. Add suffix "Z".

AURORA EQUIVALENTS TO HEIM HM, HF, HMX, HFX, HMR, AND HFR SERIES

SPECIFICATIONS:

Body - Low carbon steel, cadmium or zinc plated at manufacturer's option, dichromate treated.
No. 16 series standard body is 4130 steel, not heat treated.
Race - Low carbon steel, cadmium or zinc plated (manufacturer's option), chromate treated.
Ball - Allow steel, heat treated, hard chrome plated.

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AURORA EQUIVALENTS TO HEIM HM & HF SERIES

MALE		
Aurora P/N	Heim P/N	Price Each
MM-2	HM-2	$7.50
MB-2	HML-2	$6.40
MM-3	HM-3	$6.50
MB-3	HML-3	$6.55
MM-4	HM-4	$6.85
MB-4	HML-4	$6.85
MM-5	HM-5	$7.90
MB-5	HML-5	$7.90
MM-6	HM-6	$8.55
MB-6	HML-6	$8.70
MM-7	HM-7	$10.70
MB-7	HML-7	$9.95
MM-8	HM-8	$13.65
MB-8	HML-8	$13.70

FEMALE		
Aurora P/N	Heim P/N	Price Each
MW-2	HF-2	$6.50
MG-2	HFL-2	$6.50
MW-3	HF-3	$6.35
MG-3	-----	$6.45
MW-4	HF-4	$6.60
MG-4	HFL-4	$5.95
MW-5	HF-5	$6.95
MG-5	HFL-5	$7.50
MW-6	HF-6	$8.50
MG-6	HFL-6	$7.85
MW-7	HF-7	$10.50
MG-7	HFL-7	$9.85
MW-8	HF-8	$12.75
MG-8	HFL-8	$12.75

AURORA EQUIVALENTS TO HEIM HMX & HFX SERIES

MALE		
Aurora P/N	Heim P/N	Price Each
XAM-4Z	HMX-4G	$16.50
XAB-4Z	HMXL-4G	$16.50
XAM-5Z	HMX-5G	$18.75
XAB-5Z	-----	$18.75
XAM-6Z	HMX-6G	$22.95
XAB-6Z	HMXL-6G	$22.90
XAM-7Z	HMX-7G	$27.95
XM-7G	HMX-7G	$218.95
XAB-7Z	HMXL-7G	$23.10
XAM-8Z	HMX-8G	$35.50
XAB-8Z	HMXL-8G	$27.54

FEMALE		
Aurora P/N	Heim P/N	Price Each
AW-4Z	HFX-4G	$15.50
AG-4Z	HFXL-4G	$14.60
AW-5Z	HFX-5G	$16.80
AG-5Z	HFXL-5G	$15.00
AW-6Z	-----	$19.50
AG-6Z	HFXL-6G	$18.95
AW-7Z	HFX-7G	$23.50
AG-7Z	HFXL-7G	$23.50
AW-8Z	HFX-8G	$27.90
AG-8Z	HFXL-8G	$26.50

AURORA EQUIVALENTS TO HEIM HMR & HFR SERIES

MALE		
Aurora P/N	Heim P/N	Price Each
MM-3T	HMR-3	$10.50
MB-3T	HMRL-3	$9.90
MM-4T	HMR-4	$10.50
MB-4T	HMRL-4	$10.55
MM-5T	HMR-5	$11.50
MB-5T	HMRL-5	$10.95
MM-6T	HMR-6	$12.50
MB-6T	HMRL-6	$12.50
MM-7T	HMR-7	$14.65
MB-7T	HMRL-7	$11.60
MM-8T	HMR-8	$17.50
MB-8T	HMRL-8	$16.75

FEMALE		
Aurora P/N	Heim P/N	Price Each
MW-3T	HFR-3	$9.80
MG-3T	HFRL-3	$8.00
MW-4T	HFR-4	$9.75
MG-4T	HFRL-4	$8.90
MW-5T	HFR-5	$10.50
MW-6T	HFR-6	$11.50
MG-6T	HFRL-6	$12.85
MW-7T	HFR-7	$11.23
MG-7T	HFRL-7	$9.38
MW-8T	HFR-8	$17.50
MG-8T	HFRL-8	$14.70

Refer to HEIM Bearing Chart On Previous Pages for Dimensions on Aurora Bearings.

AURORA EQUIVALENTS TO HEIM M, ML, MD, F, & FL SERIES

MALE			FEMALE		
Aurora P/N	Aurora Price	Heim P/N	Aurora P/N	Aurora Price	Heim P/N
GMM-3M-470	$11.50	M34-14M	GMW-3M-470	$14.85	F34-14M
GMB-3M-470	$12.80	ML34-14M	GMG-3M-470	$27.50	FL34-14M
GMM-3M-570	$13.50	MD35-14M	GMW-3M-471	$22.50	F347-14M
GMB-3M-570	$32.70	MDL35-14M	GMG-3M-471	$32.10	FL347-14M
GMM-3M-670	$14.50	MD36-14M	GMW-3M-480	$19.65	F34-16M
GMB-3M-670	$22.65	MDL36-14M	GMG-3M-480	---	FL35-14M
GMM-3M-680	$14.50	MD36-16M	GMW-4M-470	$24.75	F44-14M
GMB-3M-680	$28.30	MDL36-16M	GMG-4M-470	---	FL44-14M
GMM-4M-470	$16.85	M44-14M	GMW-4M-595	$16.70	F45-19M
GMB-4M-470	$34.90	ML44-14M			
GMM-4M-675	$19.95	MD46-15M			
GMM-4M-680	$44.50	MD46-16M			
GMB-4M-680	$66.75	MDL46-16M			

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AURORA EQUIVALENTS TO HEIM HFE & HME SERIES

MALE			FEMALE		
Aurora P/N	Heim P/N	Aurora Price	Aurora P/N	Heim P/N	Aurora Price
MW-3TM-125	HFE-3	$54.75	MM-3TM-125	HME-3	$55.00
MG-3TM-125	HFLE-3	$55.00	MB-3TM-125	HMLE-3	$55.25
MW-4TM-125	HFE-4	$56.00	MM-4TM-125	HME-4	$56.25
MG-4TM-125	HFEL-4	$78.90	MB-4TM-125	HMLE-4	$95.75
MW-5TM-125	HFE-5	$58.50	MM-5TM-125	HME-5	$64.75
MG-5TM-125	HFLE-5	$155.95	MB-5TM-125	HMLE-5	$59.50

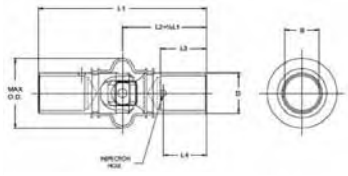
AURORA EQUIVALENTS TO HEIM LS, LHA, & LSS SERIES

LCOM Series Large Size Spherical Bearings			COM Series Spherical Bearings			COM-KH Series Spherical Bearings		
Aurora P/N	Heim P/N	Price	Aurora P/N	Heim P/N	Price	Aurora P/N	Heim P/N	Price
LCOM-3	LS-3	$22.50	COM-3	LSS-3	$8.70	COM-3KH	LHA-3	---
LCOM-4	LS-4	$15.65	COM-5	LSS-5	$9.50	COM-4KH	LHA-4	$11.95
LCOM-5	LS-5	$33.50	COM-6	LSS-6	$9.50	COM-5KH	LHA-5	$13.90
LCOM-6	LS-6	$22.50	COM-7	LSS-7	---	COM-6KH	LHA-6	$12.50
LCOM-7	LS-7	$41.80	COM-9	LSS-9	$9.90	COM-7KH	LHA-7	$22.75
LCOM-8	LS-8	$27.50	COM-14	LSS-14	$19.65	COM-8KH	LHA-8	$14.50
			COM-16	LSS-16	$23.25	COM-9KH	LHA-9	$14.70
						COM-10KH	LHA-10	$19.95
						COM-12KH	LHA-12	$28.50
						COM-14KH	LHA-14	$46.20
						COM-16KH	LHA-16	$52.75

AURORA CM-S & CB-S MALE ROD ENDS WITH STUDS

Rod End no.		Dimension in inches									
Right Hand	Left Hand	H Ref.	A ± .015	D Ref.	C +.062 −.031	L ± .015	N ± .010	M Ref.	Thread UNF-3A	a° Misalign Angle	Price Each
CM-3S*	CB-3S*	.234	1.250	.625	.750	1.000	.500	.437	10-32	50	$5.90
CM-4S*	CB-4S*	.250	1.562	.750	1.000	1.031	.562	.500	1/4-28	50	$6.50
CM-5S*	CB-5S*	.312	1.875	.875	1.250	1.219	.687	.593	5/16-24	50	$6.85
CM-6S	CB-6S	.359	1.938	1.000	1.250	1.562	.906	.812	3/8-24	50	$7.50
CM-7S	CB-7S	.406	2.125	1.125	1.375	1.750	1.062	.937	7/16-20	50	$8.30
CM-8S	CB-8S	.453	2.438	1.312	1.500	2.000	1.125	1.000	1/2-20	50	$11.50
CM-10S	CB-10S	.484	2.625	1.500	1.625	2.500	1.500	1.375	5/8-18	50	$16.55
CM-12S	CB-12S	.593	2.875	1.750	1.750	3.000	1.812	1.625	3/4-16	50	$23.70

* Grease fittings not available on these sizes. Units are supplied without grease fittings.



MS20271 UNIVERSAL JOINTS

MS20271 series Apex® mil spec universal joints, heavy duty. MS20271 mil spec universal joints have undergone qualification testing and meet or exceed the requirements of Military Specification MIL-J-6193 and Standard Drawing MS20271.

Apex® mil spec universal joints are not adversely affected by fretting corrosion or Brinelling from vibration, shock loads or overloads. Used throughout aerospace, the military, indutrial, construction and performance racing industries. Apex® military standard universal joints can be ordered with or without protective lubrication covers. Apex® mil spec universal joints require minimal maintenance; in most cases, the original may last the service life of the vehicle or machine.

Part No.	ID (in.)	Price Ea
MS20271-B6	1/4	$169.75
MS20271-B8	3/8	$109.85
MS20271-B10	1/2	$83.75
MS20271-B12	5/8	$86.75
MS20271-B14	3/4	$124.75

Dash #	+.000, -.002 (+.000, -.051) Outside Dia.		+/-.015 (+/-.381) Overall Length		+.031,-.000 (-.787,-.000) Bore Depth		+.004,-.025 (+.102, -.025) Bore Dia.		+/-.015 (+/-.381) Insp. Hole Loc.		Max Dia. (+.102,-.025) Cover Dia.		Weight Max	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg.
B6	.372	9.45	2.0	50.80	.500	12.70	.250	6.35	.437	11.10	.781	19.84	.07	.032
B8	.495	12.57	2.625	66.67	.625	15.88	.375	9.52	.562	14.27	1.031	26.19	.09	.041
B10	.620	15.75	2.750	69.85	.750	19.05	.500	12.70	.687	17.45	1.156	29.36	.18	.082
B12	.745	18.92	3.187	80.95	.875	22.22	.625	15.88	.812	20.62	1.437	36.50	.24	.109
B14	.870	22.10	3.625	92.07	1.00	25.40	.750	19.05	.937	23.80	1.562	39.67	.35	.159

*Five hour test at 15° angle.

TORSIONAL OVERLOADS

AXIAL OVERLOADS

Temporary torsional overloads as great as 80% of rated ultimate have been handled by these universal joints without harmful binding.

Temporary axial overloads ranging up to 150% in excess of rated ultimates have been imposed without binding. These characteristics insure high safety factors under the most difficult operating conditions.

H-9426 BALL JOINT

* Hex: 1/2 Inch *Thread: 5/16-18 *Ball: 10 mm .....
P/N 06-00675.....$0.68

P/N 05-07400

BALL JOINT ASSEMBLIES

COMMERCIAL

Ball Joint Style	Female End	Male End	Part No.	Price
Is similar to AN276-6 but no longer tapered	1/4-28	1/4-28	05-07300	$11.90
Commercial	10-32	1/4-28	05-07400	$2.95
Commercial	10-32	10-32	05-07500	$2.75
Commercial	1/4-28	1/4-28	05-07600	$14.50

GEARS, CHAINS, SPROCKETS AND BEARINGS

BOSTON GEAR PRODUCTS

STEEL SPROCKETS - These sprockets have many applications in a control system. Hub type.

Sprocket Part No.	Chain Size	No. of Teeth	Price
05-03441	1/4"	12	$6.75
25B15	1/4"	15	$7.50
05-03442	1/4"	20	$15.90
35B14	3/8"	14	$8.50

BUSHINGS - As used on the Solitaire Sailplane.

Bushing Part No.	Price
FF520-10	$0.55
FF620	$2.95

ROLLER CHAIN - These chains fit above sprockets.

1/4" Chain - 10 Ft.	P/N 05-29325	$62.85
3/8" Chain - 10 Ft.	P/N 05-29335	$62.50
Extra Links - S25	P/N 05-29300	$0.60
Extra Links - S35	P/N 05-29350	$0.57

FB-35-1	Flange Bearing	$1.10	G-481-G Gear $35.95
FB-35-2	Flange Bearing	$0.84	G-481Y-P Pinion $20.50
FB-1012-4	Flange Bearing	$0.80	NF-14-6-8 Bearing $1.20
FB-1013-8	Flange Bearing	$2.50	NF-16-8-9 Bearing $1.20
FB-1620-10	Flange Bearing	$6.00	
FB-46-2	Flange Bearing	$0.24	

COMPLETE LINE OF BOSTON GEAR PRODUCTS AVAILABLE

BRONZE BUSHINGS SS-610-8

Cast Bronze bearings fit a wide range of applications.
Key Benefits:
High Strength, Excellent Machinability
P/N 04-01937..... $1.98

ASSORTED SPRINGS

Spring	Part No.	Application	Spring Type	Length	Price Each
Century Spring #186-C	01-27200	VariEze	Tension	2"	$3.80
Rudder Return Spring	01-27300	"	Tension	4 1/2"	$4.75
Landing Brake	01-27600	VE/Long-EZ	Tension	10"	$14.75
Tension Spring*	01-37500	"	Tension	30"	$11.75
Landing Brake	01-27900	Cozy	Tension	12 1/2"	$8.90

SINTERED BRONZE OIL IMPREGNATED BEARINGS

PLAIN BEARINGS

Part Number	Hole ID	Hole OD	Length	Price
05-01977	3/16	5/16	3/4"	$1.28
05-01976	1/4	3/8	1"	$0.59
05-01974	1/2	3/4	3/4"	$0.97
05-01975	1/2	3/4	1"	$1.87
05-01979	9/16	3/4	1"	$1.20
05-01978	5/8	3/4	1"	$0.98
05-01891	3/4	7/8	1"	$1.45

FLANGE BEARINGS

Part Number	Hole ID	Hole OD	Length	Flange OD	Flange Thickness	Price
05-01949	1/4	3/8	1/4"	15/32	1/16	$0.44
05-01947	1/2	5/8	1/2"	7/8	1/16	$0.72
05-01946	1/2	5/8	1"	7/8	1/16	$1.50
05-01948	1/2	3/4	1"	15/16	1/8	$3.25
05-01951	5/8	3/4	1/2"	1	3/32	$0.97
04-01638	5/8	3/4	1"	1	3/32	$1.59
05-01950	3/4	7/8	3/4	1-1/8	1/8	$1.28
05-01945	1	1-1/4	3/4	1-5/8	1/8	$2.90

SINGLE-ROW TAPPERED ROLLER BEARINGS

The most basic and widely used tapered bearing, the single-row type consists of the cone assembly and the cup. It is usually fitted as one of an opposing pair. During equipment assembly, single-row bearings can be set to the required clearance (endplay) or preload condition to optimize performance. Single-row tapered roller bearings have positive roller alignment that ensures true rolling motion and generates a "seating force" that pushes the roller against the cone large rib. This seating force prevents the rollers from skewing off apex, thereby keeping them positively aligned and located against the cone large rib. P/N 05-29749 ..... $59.85

BELLCRANK BEARINGS

Part No.	Bore	Flange Dia.	Race Width	Price Each
BC4W10(AN218-4) Experimental Only	1/4"	1-5/8"	5/8"	$20.75
BC5W11	5/16"	1-11/16"	5/8"	$25.80
BCP4W10*	1/4"	1-5/8"	5/8"	

*Military P/N AN218P4 / MS20218-1. Certs Available.
All bearings inspected per MIL-I45208A. 100% traceable. Currently installed on new and rebuilt certified aircraft.Prepacked with lubricant conforming to MIL-G-23827

Quantity discount quoted on request

ACS CONTROLS

The ACS line of controls was manufactured by Aircraft Spruce and Specialty Company from 1980 to 1985. As of June, 1985 the controls have been manufactured by ACS Products Company in Lake Havasu City, Arizona. The manufacturing and inspection procedures have been approved by the FAA and original equipment manufacturers. The following engineering data will aid in properly identifying the control most suited to each individual requirement. Also shown are some available options for the controls such as plastic protective covering and steel sleeves for clamping the control to the aircraft structure. Made in the U.S.A.

The A-790-12 vernier mixture control and the A-800-12 friction-lock throttle control are approved for Cessna 172, 172A thru Q; Cessna 150, 150A thru M, A150K, A150L, A150M; Cessna 152, A152.

Other approvals pending. Order by Part Number and state Cessna model and serial number. A790-12 is 53" long. A800-12 length is based on serial number provided.

ENGINEERING DATA

Control Model No.	Control Type	Stroke at 0 Routing	Decrease in Stroke per 360° of Bend	Control Model No.	Control Type	Stroke at 0° Routing	Decrease fStroke per 360° of Bend
A-700	Button Lock (Wire End)	4.00"*	0.50"	A810	Friction Lock (1/4-28)	3.50"	0.35"
A-730	Glide Free (Wire End)	4.00"*	0.50"	A920	Push-Pull (10-32)	3.37"	0.35"
A-740	Ratchet (Wire End)	4.00"*	0.50"	A930	Push-Pull (1/4-28)	3.50"	0.35"
A-750	Vernier (10-32)	3.37"*	0.35"	A970	Vernier (1/4-28)	3.50"	0.35"
A-790	Vernier (Wire End)	4.00"*	0.35"	A1550	Push-Pull (10-32) with	3.37"	0.35"
A-800	Friction Lock (10-32)	3.37"*	0.35"		Bulkhead Fittings		

*Length of exposed wire. **Recommended minimum bending radius for all controls is 5" (never less than 3")

AP

PLASTIC COVERING ON CONTROL CASING

All ACS controls can be supplied with a black Polyolefin (PO) protective cover. Price of the PO cover carries a base price of $3.00 plus the length of control in ft. multiplied by 1.50 for lengths to 10 ft. For lengths over 10 ft., use $3.00 base price plus $1.90/ft. for PO cover plus a 425 set-up fee. Example: Cost of PO cover on 5 ft. control is $3.00 plus 5 x 1.40 = $10.00. Cost of PO cover on 15 ft. control is $3.00 plus 15 x 1.90 - $31.50.

STEEL SLEEVES ON CONTROL CASING

Cadmium plated 2" long steel sleeves can be added to the casing to provide clamping points for securing the control to the aircraft structure. Specify sleeve location (measurement taken from under the panel nut to mid-point of sleeve). Sleeves are normally swaged to the casing but will be left unswaged when specified. Add $7.50 for installation of sleeves on A730 & A740 controls. Price/Sleeve $4.00

THREADED STEEL SLEEVES ON CONTROL CASING

Threaded steel sleeves ("bulkhead" fittings) can be added to the casing to provide secure clamping of the control where it passes through a bulkhead. The cadmium plated sleeves are 2" long, with 1-1/2" length of 7/16-20 threads. Specify sleeve location (measurement taken from under the panel nut to mid-point of sleeve). Sleeves are normally swaged to the casing but will be left unswaged when specified. Add $7.50 for installation of sleeves on A730 & A740 controls. Price/Sleeve $6.00

HOW TO ORDER CONTROLS

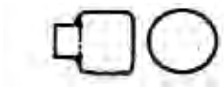
STOCK CONTROLS - All stock controls are identified by a part number as shown in the descriptions of the controls. To order a stock control, specify control type, knob color, length to nearest 1/8" (measured as described in text), and any added features such as PO cover on flexible casing or steel sleeves centered at specified distances from panel nut (lengths of stock controls are in whole-foot increments and only lengths listed are stocked). Include 7-digit part number as shown in text.

SPECIAL-LENGTH CONTROLS - If you require a special-length control, specify control type, knob color, length to nearest 1/8" and any added features such as PO cover, etc. Special-length controls carry a set-up charge in addition to the cost of the control (calculated as described in the texts).

CUSTOM CONTROLS - If you do not find the type of control you require in this catalog, send a detailed sketch with dimensions, or the old control as a sample, to Aircraft Spruce & Specialty Co., 225 Airport Circle, Corona, CA 92880-2527 (1-800-824-1930). Custom controls are priced like similar stock controls but with a $35 set-up and engineering charge added, plus costs for any special parts which must be fabricated for the control.

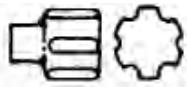
VERNIER CONTROLS

Vernier controls assure smooth operation - cannot creep. For coarse adjustment, depress center button and push or pull. For fine adjustment, turn knob. Smooth acting at all temperatures. Casing is made of tightly wound galvanized steel wire Inner shaft is stainless steel cable (Models A-750 and A-970) or stainless steel wire (Model A-790). Low-friction operation is provided by an internal extruded Teflon liner. Controls have 1-1/4" dia. plastic knob with 3/4" dia. aluminum release button. A protective black PVC cover is available as an option on controls. Choice of knob color - black, red or blue (FAA Color Code: Black - Throttle, Red - Mixture, Blue - Prop), and knob design (see below).



Throttle Control
(Black) (FAA Color) Or White

Mixture Control
(Red)



Prop Control
(Blue)

The FAA has recently adopted a standard configuration for cockpit control knobs in production aircraft type-certificated after August 11, 1986. The red mixture knob is to have six raised ridges whereas the blue prop control is to have the opposite profile with six grooves. The black throttle control knob is to have a smooth profile. The different knob contours assure positive identification by touch.

Aircraft Spruce is proud to offer the ACS line of vernier controls with the new style FAA knobs at no extra charge. The throttles will be furnished with the smooth black knob, the mixture controls with the contoured red knob and the prop controls with the contoured blue knob. Look to Aircraft Spruce & Specialty Company for a complete selection of original installation or replacement controls at tremendous savings.

REPLACEMENT PARTS FOR ACS CONTROLS

ACS large Control Cable Grommet made of black synthetic rubber. P/N 05-02633.....$2.95

ACS Rubber Grommets N-549-A (Small)
P/N 05-02634.....$2.95

ACS Large Black Knob A-663-A for the A-800 controls.....
05-03416 .....$4.85

Replacement ball bearings for A790 Controls
P/N 05-07700.....$2.00

Replacement ball bearings for A700/A-1840 Controls
P/N 05-02618.....$2.00

NOTE: The Grommets (rubber boots) fit all ACS 10-32 threaded end controls, such as: A-750, A-800, A-770, A-1860, A-920, A-1550, A-1750, A-950, and A-1760.

A-750 VERNIER CONTROL
(10-32 THREADED END)

The A-750 vernier control has 10-32 threaded shaft for use with ball point or threaded terminal. Unique ball-socket construction permits the threaded end to swivel 8° in any direction. Casing has Teflon inner liner for low friction and heat resistance in high-temperature areas such as engine compartments. Features stainless steel end fittings, swivel, and end rod. Furnished with FAA-style knobs (Black, Red & Blue). Travel: 3-3/8". Wt. 1 lb. (4'). Stocked in the following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-07736	05-07748	05-07760	05-07772	05-07784	05-07796
Red	05-07836	05-07848	05-07860	05-07872	05-07884	05-07896
Blue	05-07936	05-07948	05-07960	05-07972	05-07984	05-07996
Price	$84.85	$86.75	$87.75	$77.50	$91.75	$92.90

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

Glasair Prop Control A-750 Blue 80" long ..... P/N 05-07980 ..... $133.75

3/4 - 16 UNF-2A THD.

A-790 VERNIER CONTROL
(SOLID-WIRE END)

The A-790 vernier control has a .078" dia. stainless steel wire core. Both the wire and Teflon lined flexible casing may be shortened as required. The Teflon liner provides low friction with heat resistance in high temperature areas such as engine compartments. Furnished with FAA-style knobs (Black, Red & Blue). Max. travel: 3-3/8". Stocked in the following lengths (measurement taken from under the panel nut to end of wire with knob pushed in). Order by Part Number.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-08036	05-08048	05-08060	05-08072	05-08084	05-08096
Red	05-08136	05-08148	05-08160	05-08172	05-08184	05-08196
Blue	05-08236	05-08248	05-08260	05-08272	05-08284	05-08296
Price	$86.75	$75.75	$76.75	$78.80	$80.75	$81.75

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

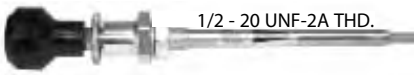
Replacement Ball Bearing for A-790 Controls..... P/N 05-07700..... $2.00

A-970 VERNIER CONTROL
(1/4-28 THREADED END)

The A-970 vernier control is similar to the Model A-750 described above but with 1/4-28 threaded end (non-swiveling). Casing has Teflon inner liner for low friction and heat resistance in high-temperature areas such as engine compartments. Features stainless steel end fittings, swivel, and end rod. Furnished with FAA-style knobs (Black, Red & Blue). Travel: 3-3/8". Stocked in following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part Number.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-08336	05-08348	05-08360	05-08372	05-08384	05-08396
Red	05-08436	05-08448	05-08460	05-08472	05-08484	05-08496
Blue	05-08536	05-08548	05-08560	05-08572	05-08584	05-08596
Price	$86.75	$86.95	$89.75	$89.50	$91.80	$81.50

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.



1/2 - 20 UNF-2A THD.

A-800 FRICTION LOCK CONTROL
(10-32 THREADED END)

The A-800 friction lock control provides positive locking at any power setting by turning the chrome collet locking nut. Unique ball-socket construction permits 10-32 threaded end to swivel 8° in any direction. Casing has Teflon liner for low friction and heat resistance in high-temperature areas such as engine compartments. Travel: 3-3/8". The 1-1/4" dia. solid knob is available in black or blue (blue knob has smooth profile, not FAA style). Stocked in following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-08636	05-08648	05-08660	05-08672	05-08684	05-08696
Blue	05-08836	05-08848	05-08860	05-08872	05-08884	05-08896
Price	$77.75	$79.75	$79.95	$83.75	$83.80	$86.75

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

A-800 VANS CONTROL CABLE FOR RV AIRCRAFT

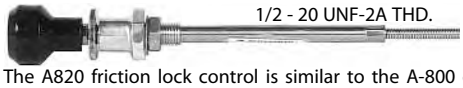
Specify knob color (black, blue, red), overall length of control (from under panel nut to end of control) and stroke (2-1/4", 2-1/2"). For controls over 72" long, add $1.50 per foot. For custom stroke (2-3/8", 2-3/4", 3-1/2") add $45 to cost of control. P/N 05-01436 ..... $183.75

A-810 FRICTION LOCK CONTROL
(1/4-28 THREADED END)

The A-810 friction lock control is similar to the A-800 control but with 1/4-28 threaded end (non-swiveling). With Teflon liner. Travel: 3-3/8". Knob styles and length measurement same as for A-800. Stocked in the following lengths. Order by Part Number.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-09236	05-09248	05-09260	05-09272	05-09284	05-09296
Blue	05-09336	05-09348	05-09360	05-09372	05-09384	05-09396
Price	$78.75	$79.80	$82.75	$83.75	$73.75	$75.50

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.



1/2 - 20 UNF-2A THD.

A-820 FRICTION LOCK CONTROL
(SOLID-WIRE END)

The A820 friction lock control is similar to the A-800 control but with a solid wire end like the A-790 control above. With Teflon liner. Travel: 3-3/8". Knob styles and measurements same as for A-800.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.
Black	05-09436	05-09448	05-09460	05-09472	05-09484	05-09496
Blue	05-09536	05-09548	05-09560	05-09572	05-09584	05-09596
Price	$66.95	$67.95	$69.90	$71.75	$73.90	$75.75

SPECIAL LENGTH CONTROLS - Use price of next longest control in chart (by foot) plus $20.00 set-up charge for controls under 10 feet, $40.00 for controls 10 feet and over. For controls longer than shown in chart, also add $1.45 per foot for each foot over the longest length. Measure length from under panel nut to end of control with knob pushed in. Allow 2-3 weeks for special length controls.

FAA APPROVED A-790 & A-800 CONTROLS

The A-790-12 vernier mixture control amd the A-800-12 friction lock throttle control are approved for Cessna 172, 172A thru Q; Cessna 150, 150A thru M, A150K, A150L, A150M; Cessna 152, A152. Other approvals pending. Order by part number and state Cessna model and serial number. A790-12 is 53" long. A800-12 length is based on serial number provided. Note: For special length contros over 25ft. long, add extra $15.00 to the set-up fee.

P/N A-790-12 ..... $159.95 P/N A-800-12 ..... $163.85

All ACS Products Controls are made in the U.S.A

A-700 BUTTON LOCK DASH CONTROL
(7/16-20 UNF-2A THREADS / SOLID WIRE END)

Provides a 10-lb. locking force for light and medium service applications. Black or Red anodized aluminum knob with aluminum release button. Has .062" dia. stainless steel wire core in flexible metal casing. May be shortened as req. Max. travel 3-1/2". Order by Part No.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13172	05-13184	05-13196	05-13120
Red	05-13272	05-13284	05-13296	05-13220
Price	$61.80	$64.75	$63.85	$72.75

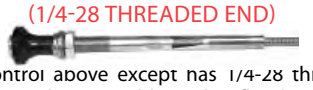
Replacement Ball Bearing for A-700/A-1840 Controls
P/N 05-02618.....$2.00

A-770 BUTTON LOCK DASH CONTROL
(10-32 THREADED END)

Same as A-700 control above except has 10-32 threaded end, with .078' dia. stainless steel inner cable and Teflon-lined flexible casing. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16172	05-16184	05-16196	05-16120
Red	05-16272	05-16284	05-16296	05-16220
Price	$73.75	$65.75	$67.75	$87.85

A-780 BUTTON LOCK DASH CONTROL
(1/4-28 THREADED END)



Same as A-700 control above except has 1/4-28 threaded end, with .078' dia. stainless steel inner cable and Teflon-lined flexible casing. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16372	05-16384	05-16396	05-16320
Red	05-16472	05-16484	05-16496	05-16420
Price	$77.75	$78.75	$80.75	$91.50

A-1860 T-HANDLE BUTTON LOCK DASH CONTROL
(10-32 THREADED END)

Same as A-770 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16672	05-16684	05-16696	05-16620
Price	$66.75	$77.75	$79.75	$91.75

A-1840 T-HANDLE BUTTON LOCK DASH CONTROL
(SOLID WIRE END)

Same as A-700 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

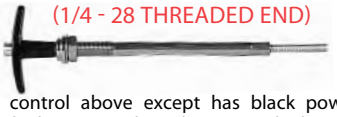
Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13572	05-13584	05-13596	05-13520
Price	$62.75	$56.25	$56.75	$73.75

EXTENSIONS FOR THREADED CONTROLS

Use these stainless steel extensions for moderate length adjustments to stock length controls. Stocked with 1 male & 1 female threaded end. The extensions provide the required increase in control length when threaded approximately half way onto the control. Furnished in 2", 3", 4", 5" and 6" lengths. All extensions have 10-32 threads. To order, add -2, -3, -4, or -5 to Dash number for length. P/N 10376 ..... $12.65/ea

All ACS Products Controls are made in the U.S.A

A-1870 T-HANDLE BUTTON LOCK DASH CONTROL
(1/4 - 28 THREADED END)



Same as A-780 control above except has black powder-coated aluminum T-handle with aluminum release button. Order by part number.

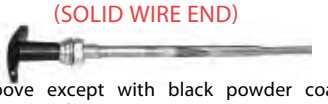
Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-16872	05-16884	05-16896	05-16820
Price	$67.75	$68.25	$69.90	$92.75

A-730 GLIDE FREE CONTROL
(SOLID WIRE END)

Simple design for push-pull operation with low friction characteristics. Has .050" dia. stainless steel wire core in flexible metal casing with polyethylene liner. May be shortened as required. Max. travel 3-1/2". Available with black or red plastic knob. Order by Part No.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13672	05-13684	05-13696	05-13620
Red	05-13772	05-13784	05-13796	05-13720
Price	$33.95	$35.50	$36.55	$43.75

A-1770 T-HANDLE GLIDE FREE CONTROL
(SOLID WIRE END)



Same as A-730 above except with black powder coated aluminum T-handle. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-13872	05-13884	05-13896	05-13820
Price	$43.50	$43.50	$44.60	$49.75

A-740 RATCHET CONTROL
(SOLID WIRE END)

Ratchet design provides detented positions under vibration conditions. Simple push-pull operation. Has .050" dia. stainless steel wire Core in flexible metal casing with polyethylene liner. May be shortened as required. Max. travel 3-1/2". Available with black or red plastic knob. Order by Part No.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-14072	05-14084	05-14096	05-14020
Red	05-14172	05-14184	05-14196	05-14120
Price	$36.50	$36.95	$38.75	$44.70

A-1780 T-HANDLE RATCHET CONTROL
(SOLID WIRE END)

Same as A-740 above except with black powder coated aluminum T-handle. Order by part number.

Knob Color	Length			
	6 Ft.	7 Ft.	8 Ft.	10 Ft.
Black	05-14272	05-14284	05-14296	05-14220
Price	$43.50	$45.50	$40.75	$52.75

CONTROL END EXAMPLES

SOLID WIRE

SOLID WIRE SPEC END STYLE C

10-32 THREADED END

1/4"-28 THREADED END

AP

A-920 PUSH-PULL CONTROL
(10-32 THREADED END)

This control has 10-32 threaded ends with 8° swivel & 3-3/8" stroke. It has Teflon casing liner for use in high-temperature areas such as engine compartments, & .078" dia. stainless steel inner cable to minimize backlash. Stocked in the following lengths. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-12736	$48.90	96"	05-12796	$57.75
48"	05-12748	$49.95	108"	05-127108	$59.75
60"	05-12760	$51.95	120"	05-127120	$65.75
72"	05-12772	$53.75	132"	05-127132	$67.75
84"	05-12784	$56.75	144"	05-127144	$68.75

A-930 PUSH-PULL CONTROL
(1/4-28 THREADED END)

This control has 1/4-28 threaded ends (nonswiveling) and 3-1/2" stroke. It has Teflon casing liner for use in high-temperature areas such as engine compartments, and .078" dia. stainless steel inner cable to minimize backlash. Stocked in the following lengths. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-30036	$49.85	96"	05-30096	$59.75
48"	05-30048	$52.75	108"	05-30108	$52.50
60"	05-30060	$53.75	120"	05-30120	$58.75
72"	05-30072	$55.75	132"	05-30132	$68.75
84"	05-30084	$49.95	144"	05-30144	$61.75

SPECIAL LENGTH CONTROLS – Refer to chart for price of next longest control (by foot), and add a $20.00 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet. For lengths over 144" add $1.45 for each extra foot or fraction of a foot. Allow 2 - 3 weeks.

A-1550 PUSH-PULL CONTROL
(10-32 THREADED END)

This control has same design as A-920 control but with 7/16-20 threaded bulkhead fittings added at each end. Not stocked. Available at base price of $31.25 + $1.45 per ft. or fraction of a foot + $20 set-up charge

A-1750 VERNIER CONTROL
(10-32 THREADED END)

A-1750 Vernier Control: features - removable button and facenut and 2" of control panel threads for those difficult mounting applications. (10-32 threaded control rod like the A-750 control.)

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
Black	05-10236	05-10248	05-10260	05-10272	05-10284	05-10296
Red	05-10336	05-10348	05-10360	05-10372	05-10384	05-10396
Blue	05-10436	05-10448	05-10460	05-10472	05-10484	05-10496
Price	$89.75	$91.85	$93.75	$71.50	$72.95	$73.85

A-1970 VERNIER CONTROL
(1/4-28 THREADED END)

A-1970 Vernier Control same features as the A-1750 except it has the A-970 style (1/4 x 28 threaded rod)

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
Black	05-09636	05-09648	05-09660	05-09672	05-09684	05-09696
Red	05-09736	05-09748	05-09760	05-09772	05-09784	05-09796
Blue	05-09836	05-09848	05-09860	05-09872	05-09884	05-09896
Price	$78.50	$79.90	$70.65	$66.00	$84.50	$68.50

SPECIAL LENGTH CONTROLS – Use price of 10 ft. control plus $1.45 per ft. or fraction of a foot, plus $20.00 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet. Allow 2 - 3 weeks.

CONTROLS WITH COILED WIRE END – Add $7.50 to cost. To order, add "C" to part number. Controls with coiled end have only 3" stroke rather than 3-1/2" on standard end controls.

All ACS Products Controls are made in the U.S.A

A-950 PUSH-PULL CONTROL
(10-32 THREADS / SOLID WIRE END)

Same as A-920 control except one end is .078" dia. stainless steel wire. Special-length controls not required as the wire end can be cut off to desired length. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-16936	$36.50	96"	05-16996	$44.70
48"	05-16948	$37.95	108"	05-169108	$45.50
60"	05-16960	$39.50	120"	05-169120	$51.75
72"	05-16972	$39.85	132"	05-169132	$45.90
84"	05-16984	$36.99	144"	05-169144	$55.80

A-960 PUSH-PULL CONTROL
(1/4-28 THREADS / SOLID WIRE END)

Same as A-930 control except one end is .078" dia. stainless steel wire. Special-length controls not required as the wire end can be cut off to desired length. Order by Part No.

Control Length	Part No.	Price	Control Length	Part No.	Price
36"	05-17036	$51.75	96"	05-17096	$45.50
48"	05-17048	$39.50	108"	05-170108	$46.85
60"	05-17060	$46.50	120"	05-170120	$52.80
72"	05-17072	$41.90	132"	05-170132	$75.75
84"	05-17084	$43.95	144"	05-170144	$49.75

A1600 SERIES
POSITIVE LOCK CONTROLS – SINGLE END

These positive-locking controls are available with white, black, or blue knob or T-handle style in black or aluminum. Complete part number with -W for white, -B for black knob, -BU for blue knob, -TB for t-handle black or -TA for T-handle aluminum. Special length controls are available at price for next longer control + $1.45 per foot + $20 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet.

Control	End	6 Ft.		7 Ft.		8 Ft.		10 Ft.	
		Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
A-1610	.078 Wire	05-17172	$136.85	05-17184	$147.75	05-17196	$97.00	05-17120	$166.75
A-1620	10-32 Thread	05-17272	$118.80	05-17284	$102.95	05-17296	$103.95	05-172120	$105.95
A-1630	1-1/4-28 Thread	05-17372	$102.95	05-17384	$103.95	05-17396	$151.75	05-17320	$106.95

POSITIVE LOCK CONTROLS – DUAL END

These positive-locking dual controls are available with white, black, or blue knob or T-handle style in black or aluminum. Complete part number with -W for white, -B for black knob, -BU for blue knob, -TB for t-handle black or -TA for T-handle aluminum. Special length controls are available for price of next longer control (for longest of the two cables) + $1.45 per foot + $20.00 set-up charge for controls up to 10 feet, $40.00 for controls over 10 feet. Specify exact length of both cables when ordering.

Control	End	6 Ft.		7 Ft.		8 Ft.		10 Ft.	
		Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
A-1640	.078 Wire	05-17472	$159.00	05-17484	$121.95	05-17496	$135.95	05-17420	$127.95
A-1650	10-32 Thread	05-17572	$155.95	05-17584	$125.95	05-17596	$127.95	05-17520	$132.95
A-1660	1-1/4-28 Thread	05-17672	$125.95	05-17684	$127.95	05-17696	$129.95	05-17620	$134.95

A-1760 VERNIER CONTROL
(10-32 THREADED END)

A-1760 Vernier Control like a A-750 control except it has a threaded bulkhead fitting in place of the grooved or notched fitting.

Knob Color	Length					
	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8Ft.
Black	05-09936	05-09948	05-09960	05-09972	05-09984	05-09996
Red	05-10036	05-10048	05-10060	05-10072	05-10084	05-10096
Blue	05-10136	05-10148	05-10160	05-10172	05-10184	05-10196
Price	$73.25	$98.75	$99.80	$95.95	$89.85	$90.85

A-1760 VANS RV CUSTOM CONTROL CABLE

Specify knob color (black, blue, red), overall length of control (from under panel nut to end of control) and stroke (2-1/4", 2-1/2"). For controls over 72" long, add $1.50 per foot. For custom stroke (2-3/8", 2-3/4", 3-1/2") add $45 to cost of control. P/N 05-01435.....$190.75

ATTACHING HARDWARE FOR CONTROLS

WIRE GRIP

Is a unique fitting which securely attaches to solid wire end push-pull cables. Uses a "pin vice" gripping action to attach a cable. The 5/8" long 10-32 threaded end will attach a clevis, ball joint, or other hardware for use with mixture controls, carb heat box, cabin air, or other applications, resulting in a clean, professional installation.

For .40-.50 dia cables.....P/N 05-08101 ..... $23.75
For .055-.062 dia cables.....P/N 05-16000 ..... $12.65
For .078 dia cables.....P/N 05-16001 ..... $11.85
(Use P/N 05-16001 on A790, A820, A960, and A950 ACS controls)
(Use P/N 05-08101 on ACS A730, A740, A1770, and A1780 controls

AN486 TERMINALS

With 1/4-28 female threads. Fork hole dia. 3/16". AN486-3P has 17/64" fork opening. AN486-4P has 9/64" fork opening.

P/N AN486-3P..... $16.90
P/N AN486-4P $16.90

AN665-21R TERMINAL

Has 10-32 threads and 3/16" dia. fork hole. Furnished with clevis pin, cotter pin and locknut.

P/N 05-02500.....$12.00

BOLT TYPE TERMINAL

Special 3/16" dia. bolt with drilled shank. With hex nuts and washers. Use instead of "bug" nut.

P/N 05-16100.....$0.55

CONTROL HOUSING CLAMPS

AN742 plain loop type clamps to secure housing of throttles, dash controls, Bowden cable, etc. to airframe.

AN742-D3 for 3/16" O.D $0.25
AN742-D4 for 1/4" O.D.....$0.19

SLOTTED BRACKET CONTROL MOUNT

Notch of end fitting locks into slot of bracket to secure control. Steel Construction. P/N 10465..... $19.50

CLAMP STYLE CONTROL MOUNT

Protruding "finger" in clamp holds control in position. Two-piece steel clamp and base. P/N 10464..... $11.65

WIRE STOP

Wire Stop is ideal for securing cable ends. Removable and completely reusable.
OD 1/4" ID 8-32 Length 3/8" for cable up to 3/32"
P/N 15-06291 .....$0.65

FLAP HANDLE COVER

This flap handle is durable, flame-retardant, and fairly easy to install. The end result is a 1 foot section of tubing that will fit on any flap handle (Or any other round handles) that is 3/4" to 7/8" in diameter. The exposed length on the handle should not exceed 12 inches subtracting the length of the grip. It is simple to install with a high heat blow dryer or heat gun. When installed it will have a dark gray texture and be highly resistant to minor dings. This tubing will confirm to small radius bends and cover most scratches and minor surface imperfections. P/N 05-06920 ..... $13.75

STANDARD FLAP HANDLE GRIP

This is a standard Black plastic grip that can be installed on any round 7/8" shaft. It has a cutout in the end for a release button. It is ribbed all the way around.

P/N 05-06923 ..... $10.65

RED FLAP HANDLE GRIP

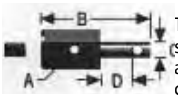
This is a standard Red plastic grip that can be installed on any round 7/8" shaft. It has a cutout in the end for a release button. It is ribbed on the top and has finger grips on the bottom.

P/N 05-06922 ..... $10.65

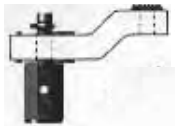
RUBBER HEX CUT FLAP HANDLE GRIP

This is a special Rubber grip that can be installed on any round 7/8" shaft. It has a cutout in the end for a release button. It has a raised Hex cut pattern all around the grip.

P/N 05-06921 ..... $12.50



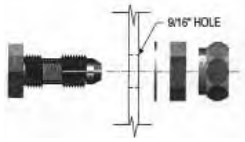
CABLE END "B" NUT



This universal NAP assembly will eliminate bent or smashed push-pull cable ends and get a strong hold at the same time. The cable end lays in a machined channel at the bottom of the screw hole. Tightening the compression screw snugs down on the cable end thus eliminating any potential crimping or smashing of the cable. Eliminates wear, possible cable breakage and enhances smooth push-pull operation. Complete with washers and cotter pin. All stainless steel, computer machined and easy to install.

Part No.	A	B	C	D
05-16210	.070	.825	.186	.241
05-16230	.086	.825	.249	.255
05-16240	.070	.645	.249	.093
05-16245	.070	.645	.186	.093

Throttle, Wt.,.26 oz .....P/N 05-16210.....$7.95/ea.
Mixture, Wt,.29 oz.....P/N 05-16230.....$7.95/ea.
Cabin Heat, Wt,.26 oz.....P/N 05-16240.....$7.95/ea.
Carb Heat.....P/N 05-16245.....$7.95/ea.
DISCOUNT: LESS 20% ON 25 OR MORE.



CABLE SAFE

A Safe "No-Slip-Grip" for your thru bulkhead cables. This unit prevents your throttle, mixture, choke or any push-pull cable from slipping at the firewall/ bulkhead location. Machined from lightweight aluminum, and final blue anodizing. Installation is simple with a drill and wrench. Once installed, the cable is threaded and the end nut is snugged down on the cable casing for positive encapsulation. Designed specifically for the aircraft industry, these fittings can be installed on virtually any application that requires a solid hold on any cable assembly with a rigid outer case. Thousands of applications: auto, boat, race car, motorhome. Used with 1/4" thru 7/32" diameter cable.
Cable Safe, Wt.: .84 oz.....P/N 05-16250.....$9.85/ea.
DISCOUNT: LESS 20% ON 25 OR MORE.

CABLE SAFE II - This Fitting is designed for use on coaxial type control cables. It has a two piece design to allow it to be placed over the cable inserted thru the firewall & tightened down, providing a positive lock.
For 1/4" cable housing P/N 05-16252 ..... $17.95/ea.
For 3/8" cable housings ..... P/N 05-16253 ..... $18.95/ea.
ADAPTOR - For the cable safe to adapt down to 3/16" diameter cable housings. ..... P/N 05-16251 ..... $3.65/ea.

WIRE SWIVELS

OD	ID	Length	Cable Dia.	Part No.
1/4"	8-32	.240"	3/32 Max	2361

P/N 06-01282 ..... $0.75

CONDUIT RETAINER - STRAIGHT

OD	ID	Length	Conduit	Part No.
5/16-24	.260	2	7/32	2386

P/N 06-01281 ..... $1.55

BOWDEN CABLE (SOLID WIRE ENDS)

Spiral-wound galvanized wire casing. Use for push-pull controls of any length. Inside cable dia. .078. Outside casing diameter 7/32".

P/N 05-15500.....$2.35/ Ft.

BOWDEN CABLE INNER WIRE

Stainless stainless steel wire .078" diameter. Sold by the foot. P/N 05-15510..... $0.65

BOWDEN CABLE CLAMP

Designed to provide a simple method of anchoring a typical wire wound cable. Used in anchor hole of 7/16" diameter.
For 3/16" Bowden Cable.....P/N 05-15705.....$12.95/ea.
For 7/32" Bowden Cable.....P/N 05-03287.....$12.95/ea.

BROWNLINE STYLE SEAT/CARGO TRACKS

Aircraft Spruce now carries Brownline style seat track and extrusion for modifications and homebuilder, or experimental aircraft customers. The new seat track can be ordered as slotted extrusion with or without 0.785" diameter machined openings every one inch, and can be purchased in anodized standard lengths or by the inch. They can also be purchased in non-anodized bulk lengths from 75" to 180". Compatible with common MS33601 .73" diameter style fittings, the new tracks are precision machined, from aerospace grade 7075-T6511 aluminum with full traceability and material certification.

MFR PN	Description	Part No.	Price
6656-6	6" 6656-6	05-07163	$19.85
6656-12	12" 6656-12	05-07164	$25.55
6656-18	18" 6656-18	05-07166	$28.80
6656-24	24" 6656-24	05-07167	$32.95
6656-36	36" 6656-36	05-07168	$42.50
6656-48	48" 6656-48	05-07169	$52.75
6656	Seat Track Medium Duty 6656 (Sold per inch)	05-07171	$1.42
STE105	Extrusion STE105 (Sold per inch)	05-07172	$0.88

FRICTION THROTTLE

Adjustable friction throttles with same construction as the ACS A-800 friction throttle but with a large (2" dia.) black solid plastic knob. Has 3/16" dia. 10-32 threaded end with 8° swivel. Stocked in the following lengths (measurement taken from under panel nut to end of threaded shaft with knob pushed in). Order by Part No. Made in the U.S.A.

Length	Part No.	Price	Length	Part No.	Price
3 Ft.	05-13700	$84.75	5 Ft.	05-13900	$88.75
4 Ft.	05-13800	$86.75	6Ft.	05-14000	$89.75

SPECIAL LENGTH CONTROLS - Use price of next longest stock length above plus $20 set-up charge. For lengths over 6 ft. also add $1.45 per foot. Allow 2-3 weeks. THROTTLE KNOB - Black solid plastic knob, 2" dia., with 1/4-28 internal threads. P/N05-29100 ..... $4.50

BUTTON TYPE DASH CONTROL

Button Type Dash Control designed for use with many control system applications. Easily installed. Operates smoothly. All adjustable parts are metal. 7/8" Dural button on 3/16" diameter shaft. Maximum travel is 2". Furnished in 5 ft. and 8 ft. length. May be shortened. Order Inserts separately. 5 Ft. Dash Control..... P/N 05-14200..... $17.70
8 Ft. Dash Control..... P/N 05-14300..... $22.50

INSERTS ONLY - Round pressure-sensitive labels, 3/4" dia. White lettering on black background. Order by part number. Basic P/N is 05-144. Last two digits of P/N are as shown in above illustration. Example: 05-14460 is "Starter" ..... $0.55 Ea

10 20 30 40 50 60

MCFARLANE MC6160 UNIVERSAL PUSH TO UNLOCK CONTROL

Perfect for Alt Air and Carb Heat controls for the experimental/homebuilt market. Knobs can be engraved for $25.00 per knob. Custom laser marking of the knobs is available for $25.00 per knob. Receive a $15.00 discount for each additional knob with the same design.

Size	Color	Part No.	Price	Size	Color	Part No.	Price
6Ft	Black/Black	05-04607	$73.80	6Ft	Clear/Black	05-04610	$73.80
8Ft	Black/Black	05-04608	$76.50	8Ft	Clear/Black	05-04611	$75.90
12Ft	Black/Black	05-04609	$79.95	12Ft	Clear/Black	05-04612	$79.95

T-HANDLE DASH CONTROL

Manufactured of duralumin and brass. Locks positively, will not vibrate loose. One-fourth turn locks it in any position and will hold up to 100 lbs. Standard travel 2-1/2". T-handle is 1-3/4" wide. Can be mounted from front or rear of instrument panel. Complete with wire and casing which may be shortened.

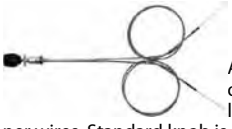
SINGLE WIRE
5 Ft. Control..... P/N 05-15000 ..... $39.50
8 Ft. Control..... P/N 05-15100 ..... $23.85
12 Ft. Control ..... P/N 05-15200 ..... $33.50

TWO WIRES -
8 Ft. Control..... P/N 05-15300 ..... $68.75

THROTTLE CONTROL

The phenolic knobs are hard and stable. Unlike the soft injection molded knobs, they resist scratching and the effects of sunlight and age. Meet the latest F.A.R. require ments for shape. and color. When ordering please provide: Make, Model, and Serial. P/N 05-02486 ..... $409.00

ROTAX DUAL CARBURETOR THROTTLE CONTROLS



Allows a neat, clean throttle installation without a clunky splitter box. Supersmooth friction lock, heavy duty 0.062 inch stainless steel inner wires. Standard knob is egg shape and ball knob is sphere shape.

Description	Part No.	Price	Description	Part No.	Price
4' Std Knob	05-04385	$152.75	6' Std Knob	05-04386	$149.85
6' Std Knob	05-04387	$161.75	4' Ball Knob	05-04388	$144.75
6' Ball Knob	05-04389	$152.75	8' Ball Knob	05-04390	$161.75

EYEBALL FIREWALL ASSEMBLIES

Allows easy installation of cables with oblique entry/exit angles. Includes the eyeball swivel, cable pass through, and line clasper. The Eyeball swivels up to 50 degrees and is clamped in place to complete installation. The hole is easily enlarged for other sizes.

Ball Matl.						
	Aluminum		Steel		Aluminum	
Appx. Wt.	0.08 lb.		0.07 lb.		0.10 lb.	
Model No.	SE961-B		SE961-S		TTp	
Hole Size	Part No.	Price	Part No.	Price	Part No.	Price
.125"	05-03440	$31.75	05-00764	$37.85	05-00722	$37.85
.188"	05-00957	$31.75	05-00766	$38.75	05-00723	$37.85
.218"	05-01378	$31.75	05-01381	$37.85	05-01383	$37.85
.240"	05-01379	$31.75	05-01382	$37.85	05-01384	$37.85
.250"	05-00958	$31.75	05-00767	$37.85	05-00724	$37.85
.260"	05-00959	$31.75	05-00768	$37.85	05-00726	$37.85
.375"	05-01380	$31.75	----	----	----	----

SERIES 4000 SPHERICAL METAL GROMMETS

The 4000 Series Spherical Metal Grommets have been developed to offer superior and robust aircraft cockpit fire protection and to give flexibility in routing pass-through controls at angles up to 50° from perpendicular.

The 4000 Series require only a single hole for minimum installation time. All-steel construction allows the product to meet temperature requirements of FAA Aircraft Circular 20-135 for certificated aircraft.

Model 4100 has an extended body and enlarged body flange for use on composite firewalls.

Model 4200 accommodates steel firewalls up to 0.040" thickness.

4100 Series			4200 Series		
Size	Part No.	Price	Size	Part No.	Price
.125"	05-06893	$59.75	.125"	05-06905	$53.75
.188"	05-06894	$59.75	.188"	05-06906	$53.75
.218"	05-06895	$59.75	.218"	05-06907	$53.75
.240"	05-06896	$59.75	.240"	05-06908	$53.75
.250"	05-06897	$59.75	.250"	05-06909	$53.75
.260"	05-06898	$59.75	.260"	05-06910	$53.75
.312"	05-06899	$50.00	.312"	05-06911	$53.75
.375"	05-06901	$59.75	.375"	05-06912	$53.75
.438"	05-06902	$59.75	.438"	05-06913	$53.75

MODEL 4100 SERIES SHOWN HAVE A BODY LENGTH OF 1/2". SEE WEBSITE FOR LONGER BODY LENGTHS.

SERIES 6000/7000 SPHERICAL METAL GROMMETS

The 6000 Series Spherical Metal grommets have been developed to address these issues: Space restrictions on some firewalls, Ease and time required for installation, FAA requirements for fire protection, and Minimum parts count.

This series requires only space for a 3/4" wrench on the firewall, and can accommodate ball hole sizes from .125" to .260".

The 7000 Series Spherical Metal Grommets have been developed to require minimal preparation and installation time in a robust, all-steel product with a minimal parts count and parts less likely to be dropped or lost during installation. As an all-steel product, it meets the heat resistance requirements of FCC AC 135. This is a requirement for firewall use in certificated aircraft. Installation still requires FAA field approval for those aircraft.

The Model 7000 can accommodate a pass-through up to .925" in diameter, making it ideal for pass-throughs.

6000 Series			7000 Series		
Size	Part No.	Price	Size	Part No.	Price
.125"	05-06929	$37.85	.125"	05-06935	$37.85
.188"	05-06930	$37.85	.188"	05-06936	$37.85
.218"	05-06931	$37.85	.218"	05-06937	$37.85
.240"	05-06932	$37.85	.240"	05-06938	$37.85
.250"	05-06933	$37.85	.250"	05-06939	$37.85
.260"	05-06934	$37.85	.260"	05-06940	$37.85
			.312"	05-06941	$37.85
			.375"	05-06942	$37.85
			.438"	05-06943	$37.85
			.500"	05-06944	$37.85
			.562"	05-06945	$37.85

SEEWWW.AIRCRAFTSPRUCE.COMFORCOMPLETESELECTIONOF SPHERICAL METAL GROMMETS

THROTTLE QUADRANTS

THROTTLE QUADRANTS FOR RV'S

These quadrants are made from aircraft quality anodized aluminum for long life and corrosion resistance brass friction plates are adjustable to fit individual preferences. Black anodized top plates are machined and engraved on a CNC mill to exacting tolerances for an excellent finish. side plates are laser cut insuring a perfect fit and feel. All hardware used meets AN standards. Note: All throttle qaudrants require a AN665-21R clevis with an AN393-11 clevis pin.
The side mount style quadrants are intended for use in tandem airplanes such as the RV4, RV8, Sterdusters, Baby Great Lakes, One Design, Acro Sport & Sonerai. Center mount style is intended for use in side-by-side aircraft such as RV's, Sonex, Thorp T18 & Pulsars.

3 CONTROL LEVER
Side Mount Curved Top
Model: SMCT3L
Wt: 10 Oz.
7-3/4" H
x 4-3/4" W x 2" D
P/N 05-00698
$199.95

3 CONTROL LEVER
Center Mount
Curved Top
Model: CMCT3L
Wt: 12 Oz.
7-3/4" H x 7" W
x 2" D
P/N 05-00701
$218.95

3 CONTROL LEVER
Side Mount Flat Top
Model: CT83F
Wt: 10 Oz.
7-3/4" H
x 4-3/4" W x 2" D
P/N 05-00703
$198.50

RV8 REAR QUADRANT
A single lever rear quadrant with an engraved top plate and a short handle for better clearance. 8" x 5-1/4" x 2"
P/N 05-04531 ..... $108.75

2 CONTROL LEVER
Side Mount Flat Top
Model: CT82F
Wt: 8 Oz.
7-3/4" H x 4-3/4" W
x 1-1/2" D
P/N 05-00702
$174.50

2 CONTROL LEVER
Center Mount
Curved Top Model:
CMCT2L
Wt: 10 Oz.
7-3/4" H x 7" W
x 2" D
P/N 05-00699
$199.50

2 CONTROL LEVER
Side Mount
Curved Top
Model: SMCT2L
Wt: 8 Oz.
7-3/4" H x 4-3/4" W
x 1-1/2" D
P/N 05-00697
$178.95

ACS THROTTLE QUADRANTS

Available in two lever designs. The 2-lever control has black plastic "Throttle" knob and red "Mixture" knob. The 3-lever control has blue "Prop" knob in addition to the throttle and mixture knobs. Built-in friction lock. Levers have 2-1/2" travel. Quadrants fit on left or right side of cockpit and can be used in tandem. Complete with aluminized Mylar knob inserts. Ends of throttle and prop levers have 3/16" dia. holes for attachment of push-pull controls with clevis terminals. End of mixture lever has .076" dia. hole to accept solid wire control such as Bowden cable. Made in the U.S.A.
Two-Lever Quadrant ..... P/N 05-00960 ..... $39.95
Three-Lever Quadrant (pictured) ..... P/N 05-00961 ..... $62.50

CIRRUS CONTROL QUADRANT UPGRADES

These Control Quadrant Upgrades result in greater fuel efficiency with reduced engine wear by means of a propeller RPM control lever. The Prop control lever for CIRRUS SR20 reduces noise significantly while providing a much more relaxing and enjoyable flight for both pilot and passengers. Simple non-structural installation. Traditional propeller RPM control, enabling "oversquare" operations as in other high performance aircraft (Columbia/ Corvalis, Mooney, Piper, Cessna, Beech, etc.). Reduced fuel consumption, 1+ gallon per hour in cruise and 5+ gallons per hour in a cruise-climb. Pays for itself in approximately 200 hours of operation. Dramatically reduced cabin noise and vibration. Airport/environmentally friendly noise abatement. Reduced engine wear and operational costs. Boost pump LED to remind pilots. Easy installation and easy return to OEM status. Compatible with the CIRRUS SR20.
SR20 ..... P/N 05-07192 ..... $3,500.00
SR22 ..... P/N 05-07193 ..... $3,500.00

AP

ANDAIR THROTTLE QUADRANTS

The Andair Throttle Quadrant has primarily been designed for the RV range of aircraft. Over several years of flying the RV6, Andair has designed some unique features that give this quadrant it's great looks and a solid feel. The handle of the throttle lever is angled to give the best ergonomic position and grip for the right hand, which will fall naturally to take up this position. On top of the handle is the optional flap control switch. This is a key safety feature which allows the pilot to deploy the flaps without taking his or her hand off of the throttle. This give much greater control on approaches and go arounds. The flap control switch consists of two color coded push to make buttons, one for flaps down and one for flaps up.
Each lever has a small ball race at the lower end and is guided by Teflon® pads at the top to give a feel that is both smooth and accurate. Along the base is a friction nut that can be used to lock all three levers, although this can be overridden with a gentle pressure.
The mixture lever has a detent arrangement to positively hold it in the 'cutoff' position.

Model	Quadrant Includes	Part No.	Price
TQX1	Flap Switches, Propeller Lever, Mixture Lever	05-04481	$525.00
TQX2	Propeller Lever, Mixture Lever	05-04482	$482.00
TQX3	Flap Switches, Mixture Lever	05-04483	$342.00
TQX4	Mixture Lever	05-04484	$311.00
TQX5	Flap Switches	05-04485	$299.95
TQX6	Quadrant Only	05-04486	$278.95
TQX7	Flap Switches, Propeller Lever	05-04487	$344.00
TQX8	Propeller Lever	05-04488	$318.00

THROTTLE QUADRANTS – CONTROL WHEELS

HOMEBUILDERS THROTTLE QUADRANTS

These quality quadrants have been in use in a wide variety of experimental and ultralight aircraft for over 25 years. Designed and manufactured to provide years of dependable, precise performance.

Model #1 – This external reversing hook-up quadrant can be used in tandem for dual control. Available with 1, 2, or 3 lever. Weight: 10 oz. Body size: 3.5" x 4".

Single lever quadrant..... P/N 05-15905..... $51.75
Two Lever Quadrant..... P/N 05-15910..... $54.75
Three Lever Quadrant..... P/N 05-15915..... $63.25

Add -F to P/N and $10 to price for adjustable friction.

Model #2 – This internal non-reversing hook up quadrant is often used on RV-4 and similar homebuilt aircraft. Available in 1, 2, or 3 lever models. Weight: 12 oz. Body Size: 3.5" x 4".

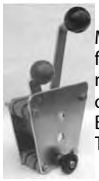
Single lever Quadrant..... P/N 05-15920..... $51.85
Two Lever Quadrant..... P/N 05-15925..... $59.75
Three Lever Quadrant..... P/N 05-15930..... $68.75

Add -F to P/N and $10 to price for adjustable friction.

Model #3 – This internal reversing hook up quadrant is ideal for a variety of different aircraft models. Available with 1, 2, or 3 lever. Weight: 10 oz. Body size: 3.5" x 4".

Single lever Quadrant..... P/N 05-15935..... $54.95
Two Lever Quadrant..... P/N 05-15940..... $59.25
Three Lever Quadrant..... P/N 05-15945..... $68.75

Add -F to P/N and $10 to price for adjustable friction.



Model #4 – This popular quadrant was specifically designed for use on RV-3 and RV-4 aircraft and is also applicable to many other homebuilt aircraft. Furnished in two lever model only and furnished with adjustable friction. Weight: 12 oz. Body size: 3.5" x 4".

Two lever Quadrant..... P/N 05-15950 .....$67.75

Model #5 – Panel mount quadrant can be an internal reversing or internal non-reversing. Available in S-series only. One, two or three levers. Friction or non-friction. Panel Mount Reversing listed below

Single lever Quadrant..... P/N 05-02436 ..... $53.99
Two Lever Quadrant..... P/N 05-02437 ..... $59.75
Three Lever Quadrant..... P/N 05-02438 ..... $68.50

Model #6 – Twin-engine model: Non-reversing internal or reversing internal unit with a four-arm configuration. L-series only. Friction or non-friction. Twin Engine Reversing Internal listed below.

Four lever Quadrant .....P/N 05-02364 ..... $81.75
Four lever Quadrant w/ Friction .....P/N 05-02365 ..... $92.50

T-BAR HANDLE FOR QUADRANTS

This handle is 3-1/2" long and 1-1/4" round and fits all of the Homebuilders Quadrants above. The arm slot is offset to one side. It is molded urethane and is very durable. Add -1 or -1F (as applicable) to the Part No. and $25.00 to the price (example: 05-15925-1)

ACS CONTROL WHEEL A-1310

Designed to be more user friendly than standard control wheels. Mounting position can be raised or lowered one inch by rotating the mounting flange. All parts machined from 6061-T6 billet. The A-1310 Control has cavities for wiring, but does not come prewired or with a mic switch. They can be ordered with a hole drilled for the mic or can be drilled later. Wt: 26 oz. Mounting flange hole sizes: 3/4" or 7/8". Made in USA.

3/4" Black Anodized..... P/N 05-02248..... $96.50
3/4" Bare Aluminum..... P/N 05-02279..... $96.50
7/8" Black Anodized..... P/N 05-02282..... $96.50
7/8" Bare Aluminum..... P/N 05-02284..... $97.00

BEECH BONANZA/BARON CONTROL WHEELS

These control wheels are identical in design to the new Beechcraft large ram's horn style wheels. They can be powder coated black with a highly durable material. Peeling or yellowing that occurs on older Beech wheels has been eliminated by the powder coating process. This control wheel is a direct replacement for the Beech/Raytheon 60-524080-13, 14 (for F33A, F33C, V35B, A36, and B36TC) and , -17 (for F33A, F33C, A36, B36TC, and 58) control wheels. Can be installed on many other aircraft using FAA form 337 for field approval. FAA Form 8130-3.

Hand crafted black leather wrapping is available for these control wheels. Each wheel is individually hand laced and custom fitted to the wheel. We can also hand wrap your existing Beech control wheel in leather. Send your control wheel to Aircraft Spruce in Corona, CA and allow 3 weeks for delivery. A Davtron MB800 digital chronometer installed in the faceplate of the control wheel is also available.

These Control Wheels now include an installation kit (Thumbplate, Faceplate, Screws).

Description	Part No.	Price
Basic Control Wheel Factory White	05-00545	$638.00
Basic control Wheel Black Powder Coat	05-06928	$698.00
Accessories		
Chronometer with custom faceplate	05-00549	$328.95

CESSNA GOLDEN EAGLE YOKE EMBLEM

Replace Your Original, Damaged, Or Missing Yoke Inserts With Our New Faux Carbon Fiber Insert! Includes Beautiful Domed Golden Eagle Emblem (Does NOT Include Yoke or Padded Surround) Faux Carbon Fiber Insert Is Same Size As Your Original Piece - Installation Instructions Included.

P/N 09-03786 ..... $77.75

BEECH BONANZA YOKE EMBLEM

This Is A Beautiful Domed Black and Gold Emblem, Approximately 1.1" High, 7.3" Wide, 1/32" Thick, For Peel 'n Stick Application. The Classic Beech "B" Is A Real Eye-Catcher! Designed Especially For Bonanza Yokes, This Piece Can Be Applied Almost Anywhere!

P/N 09-03868 ..... $24.95

CONTROL YOKE UPGRADES

Center Cushion

Now flaking & peeling finish on worn control yokes can be remedied cost effectively by these pilot-installable, semi-flexible, molded grips which are available with push-to-talk button built-into the top of the yoke (not the side). The Model SX-100 grips (pilot & copilot set) and optional, built-in, Model SX-101 plug-in push-to-talk button simply slip-over the thin, "ram's horn" control yokes of Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5 and early Mooney aircraft. Their thick, padded feel and built-in push-to-talk button add comfort, convenience & value to vintage airplanes. The top-mounted, low profile, miniature push-to-talk button supplied completely wired with plug, jack and coiled cord, is less likely to be pressed by accident, get in the way or slip out of position than bulky, side-strapped, units. Complete your updated yoke configuration with a pair of new model SX-110 center cushions, richly finished in black. Cushions fit neatly over centers of any control yokes.

Description	Application	Part No.	Price
SX-100 Grips without Push-to-Talk switch (4ea)	Small Cessna Ram Horn - C150, C172, C177, prior to 1973	05-16600	$69.50
SX-101 Grips (set of 4) with Push-to-Talk switch (left side)	Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5, Pre 1964 Mooney Aircraft	05-16630	$109.75
SX-101 Grips (set of 4) with 2 Push-to-Talk switch (left & right)	Cessna 150, 152, 172, 177, Grumman-American AA-1, AA-5, Pre 1964 Mooney Aircraft	05-16635	$158.75
SX-110 center cushion Set (Black)	Small Cessna Ram Horn - C150, C172, C177, prior to 1973	05-16610	$61.95

BEECHCRAFT ACCESSORIES

Designed & built by real-world pilots, manufactured to the highest standards. These products are built for those incomparable Beechcraft. Years of experience and the highest quality materials and construction result in the best products available for Bonanzas & Barons. All have FAA STC/PMA as applicable.

BONANZA/BARON CONTROL YOKE LOCK

Protect your investment with this heat treated lock. It installs quickly and simply (no modification is needed) but cannot be removed without being unlocked. It is a permanent, direct replacement for the original equipment. Complete with the highest quality lock, instructions, and all hardware. P/N 05-00649 ..... $346.95

Optional clipboard for clearances or notes makes a stable flight center. Spring-loaded, it snaps out of the way in seconds.

Deluxe (with Quick Release) ..... P/N 05-01335 ..... $202.95

BEECH THROTTLE, MIXTURE, PROP KNOB SET

These high-strength knobs for Bonanzas are a big improvement over old, cracked original equipment and likely the best replacement knobs on the market. Bright color-coded space-age material will not crack or fade and will not get hot like aluminum knobs. P/N 05-00652 ..... $214.95

Push buttons only, with new screws P/N 05-00653 ..... $89.75

WINDOW VENT HINGE & LATCH KIT

For new windows only on Mooney, Piper, Socata, Commander.

P/N 05-01336 ..... $157.75

BEECH STORM WINDOW HINGE/LATCH KIT

Every Bonanza or Baron pilot will appreciate the quality workmanship in every one of these storm window hinge/latch kits. Professional construction means they work smoothly, and they fit standard factory window holes with no modifications.

Complete hinge/latch kit ..... P/N 05-00654 ..... $219.00
Latch & Stiker only ..... P/N 05-00655 ..... $119.75
Hinges Only ..... P/N 05-00656 ..... $109.85

BONANZA NOSE GEAR BRACE

These PMA approved replacements for the Nose Gear Brace are used in early Bonanzas. Most of these aircraft have severely corroded nose gear braces as a result of lightening holes that allow moisture to enter and collect in the bottom of the housing. Even dry country aircraft are found to have corrosion. This is because many of these aircraft have been repainted and paint remover has entered the housing and is reactiviated when water enters the housing during aircraft washing. Applicability: Model 35 D-1 thru D6561 Model 33 CD-1 thru CD-370 Old unit (core) must be returned. FEATURES: FAA/PMA Approved direct replacement part. • One piece aluminum stronter than OEM part. • Durable corrosion resistant white powder coated finish. • Weight increase of 4.56 lbs. beneficial for aft CG aircraft. • Completely improved design eliminates potential for any corrosion. • Upper and lower bronze bushings included. • Grease fittings included.

P/N 05-02463 ..... $3,895.00

ALTERNATOR BLAST AIR DUCTS

This 24V Alternator Blast Air Duct is for use with Beech Bonanza. Comes with 8.

P/N 05-10907 ..... $12.50

BEECHCRAFT BONANZA INTAKE DUCT

Beechcraft (Raytheon) Bonanza Intake Duct fits most 1964 on up: I0520 & I0550 Beech. Models: S35-V35-V35A-V35B-V35TC C33A, F33A, A36

3 ply with Nomex reinforcement & includes Clamps.

Gloss Red ..... P/N 05-06564 ..... $74.50
Gloss Blue ..... P/N 05-06565 ..... $62.75

TOW PIN FOR BEECHCRAFT FAA/PMA APPROVED

Installation Eligibility:
Debonair: 35-A33, 35-B33, 35-33, E33, F33
Bonanza: G33, 35-C33A, E33A, F33A, F33C, N35, P35, S35, V35, V35A, V35B, 36, A36, A36TC, B36TC
Baron: 20-21-3 95-55, 95-55, 95-B55, 59-C55, D55, E55, 58, 56TC, A56TC, 58TC, 58P

RAPCO Tow Pin ..... P/N 05-01625 ..... $24.50

BEECHCRAFT PATCH

4" x 2", ready to be ironed or sewn on.

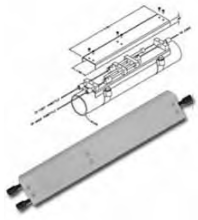
P/N 14-00131 ..... $2.75

TRIKESLIDE DUAL THROTTLE/CHOKE CONTROL

The DCT-01 has adjustable holding friction, that will keep the pull rod at the last set position. The DCT-01 has dual cable adjusters to syncronize the choke/throttle levers. The DCT-01 can be held to the airframe with the supplied clamp, or it can be bolted to the instrument panel.

P/N 05-02492 ..... $69.95

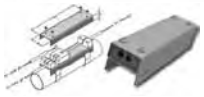
TRIKSLIDE DUAL THROTTLE MIXER



Trikslide is a dual throttle input-mixer/slider designed especially for trikes and ultralight aircraft. Trikslide eliminates the interaction between two throttle cables. It will mount on any round or square structural member and provides smooth slide action with a full 2" stroke. Features aluminum and delrin construction with universal mounting clamps and a universal control cable connector which will fit all cable terminations.

P/N 05-00782 ..... $59.95

DUAL CARBURETOR SPLITTER



Splits a single throttle input into two outputs for dual carburetor installations. Clamp mounting.

P/N 05-01823 ..... $29.95

DUAL CARBURETOR SPLITTER WITH OIL INJECTION

Splits a single throttle input into three outputs for dual carburetor installations with oil injection. Clamp mounting.

P/N 05-01824 ..... $31.95

HAND THROTTLE

High torque, 2.5.1 internal gear reduction.For dual carburetors. 825 degree rotation for fine throttle adjustment. Adjustable friction drag. Clamp mounting - no holes required. Made from weatherproof materials.

P/N 05-01826 ..... $69.95

FOOTPEDAL CABLE CONNECTOR

Convenient foot pedal throttle control. Aluminum/delrin construction with mounting hardware. Universal cable connector--fits all cable terminations. Designed especially for trikes and ultralight aircraft.

P/N 05-01827 ..... $12.95

MCFARLANE ROTAX THROTTLE SPRING

Alternate carburetor arm return spring #6696 for dual carburetor 912/914 series Rotax engines. •Less than half the strength of the original stock Rotax springs •Prevents throttle "creep" due to excessive return spring force •Requires 1 per carburetor (2 per engine)

Note: Installer is responsible for determining whether this spring is an appropriate substitution for their application. Not for use on certified aircraft. Sold per pair.

P/N 05-06992 ..... $14.85

BEECHCRAFT KING AIR FIRE DETECTOR SHIELDS

Vendor Part Number	Replacement Part Number	Model Eligibility	PN	Price
TL-101-910079-3	101-910079-3	B200, B200C, B200C (C-12F), B200C (UC-12F), B200C (UC-12M), B200C (C-12R), B200CT, B200T	05-11052	$252.00
TL-101-910079-1	101-910078-3	200, 200C, 200CT	05-11053	$100.00
TL-100-570029-1	100-570029-1	C90, C90A, C90GT, E90	05-11054	$160.25

BEECHCRAFT MAIN GEAR BOLT

This is a replacement for discontinued Main Gear Bolt part number CA101-810089-1. The new part number is CA101-810089-1A. This part has been tested and is superior in tensile strength and fatigue and crack resistance. Eligible for Beechcraft 1900 series aircraft, this is a life limited part that meets all requirements for the full 5 year/10,000 cycle life. The part number and serial number are engraved on the bolt head.

P/N 05-04163 ..... $320.00

FUEL TANKS

AP

FUEL WARNING SYSTEM

Float-action sensor in tank activates panel warning light when fuel supply is low. All-PBT unit, impervious to aviation fuel. Use AN 867-4 flange for mounting.

Sensor ..... P/N 6905-400 ..... $29.95
Warning Light ..... P/N 05-17660 ..... $18.85
Bulb(GE-330)..... P/N 11-04016 ..... $1.25

DISCOUNTS: 10% ON 6, 15% ON 12, 20% ON 50

INVERTED PICKUP TUBES

"Flop" tubes for inverted flight are made from Aeroquip 701-6 flexible hose. End fitting swaged onto hose has a 1/4" male pipe thread attached to tank outlet. Available for any of the tanks listed, or others. Specify tank model and tube length. Minimum length available is 9"

9" .....P/N 05-20509.....$64.85
10".....P/N 05-20510..... $64.50
11".....P/N 05-20511.....$64.50
12".....P/N 05-20512..... $64.50
13".....P/N 05-20513.....$65.75

Add $1.80 to 13" price for each additional inch.

PICKUP TUBE ADAPTER

Specially machined AN912 fitting for connecting pickup tube to fuel tank.

For 12" tubes & longer ..... P/N 10380 ..... $12.50

Specially machined AN912-12D for shorter than 12"
P/N 10380-1 ..... $43.85

FLOP TUBE ADAPTER WITH SIDE OUTLET

This fitting eliminates the need to put an angle fitting on standard adapter. 1/4" female pipe thread on side and bottom & 1" male pipe or 3/4" male pipe on bottom. Use with AN867-6 or 8.

1" Male Pipe ..... P/N 05-20525 ..... $47.65
3/4" Male Pipe ..... P/N 05-20526 ..... $47.65

ALUMINUM WELDING FLANGES

Part No.	Female Pipe Thread	Dia. "D" In	Height "H" In	Price Each
AN867-1	1/8"	1-1/2	7/16	$7.60
AN867-2	1/4"	1-3/4	5/8	$8.80
AN867-3	3/8"	1-7/8	5/8	$9.50
AN867-4	1/2"	2	3/4	$9.85
AN867-6	3/4"	2-1/4	13/16	$13.50
AN867-8	1"	2-11/16"	1"	$18.50

FINGER STRAINERS

Finger strainers are strainers for fuel tank outlets. Standard size features a brass fitting with 3/8" male pipe thread which fits AN867-3 welding flange, and 1/4" female pipe thread for valve or fuel line fitting. Screen is 16 mesh brass.

Large finger strainer has a 3/8"-NPT x 1/2"-M-NPT brass bushing with a T304 stainless steel screen.

Standard .....P/N 05-17700..... $6.85 Large.....P/N 05-04445..... $18.90

RAVEN HEADER TANKS

Header tank used for any aerobatic aircraft such as Pitts Specials etc. Comes with mounts to attach to existing tank straps, clamps and weld-in fitting for main tank. 16" x 7" in diameter. Holds approximately 2-1/2 gallons. Weighs 3 lbs.

P/N 05-00913 ..... $355.00

RAVEN WING TANKS

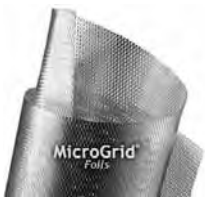
Wing tank used to hold extra fuel or smoke oil in top wing of aerobatic biplanes.

S1-S Wing Tank ..... P/N 05-00914 ..... $361.95
S1-C Wing Tank ..... P/N 05-00915 ..... $256.95
Experimental S2, Eagle Wing Tank ..... P/N 05-00916 ..... $335.95

FUEL TANK DRAIN FITTING

This specially designed fuel tank drain fitting minimizes drain flow vortexing that allows water and contaminants to remain in tank no matter how many times the drain cycle is repeated. Threads are 1/8" NPT - brass throughout P/N 05-28900 ..... $38.30

MICROGRID LIGHTING STRIKE PROTECTION



MicroGrid precision expanded strike protection in composite aircraft structures. In fact, MicroGrid is used by Boeing, Embraer, and many other aircraft manufacturers. MicroGrid's single unit structure is superior because it can't unravel like woven wire. Nor is costly material removed as in etching or stamping.

The appropriate gauge and pattern of material is easily adhered to the composite for 200,000 amps of conductivity. Aircraft are easily repaired after a lightning strike by simply sanding away the surface to apply a patch of new MicroGrid. And fantastically flexible MicroGrid easily conforms to a variety of shapes and contours in both manufacture and repair. It can be bent, shaped and laminated with a variety of materials, including those which expand, contract and flex.

ALUMINUM OR COPPER MICROGRID

Aluminum MicroGrid is ideal for most composite aircraft structure applications and is nearly half the weight of the copper MicroGrid. Copper MicroGrid is recommended for use with carbon fiber structures. Two layers of MicroGrid are recommended over fuel tank applications.

Aluminum MicroGrid (37" wide).....P/N 05-02631 ..... $17.25 ft.
Copper MicroGrid (18" wide) .....P/N 05-02632 ..... $12.50 ft.

	Aluminum	Copper
Weight - Lbs./SF	0.016	0.029
Base Metal Thickness	0.004 inch	0.003 inch
LWD	0.080 inch	0.125 inch
Overall Thickness	0.006 inch	0.005 inch
Open Area	68%	77%

ALUMINUM FUEL TANKS

PITTS SPECIAL FUEL TANK

Design	Capacity (Gallons)	Main Tank	Part No.	Tank for Inverted Flight	Part No.	Each Wing Tank	Part No.
Acro-Sport II	24			$591.00	05-18510		
Baby Greatlakes	10	$943.00	05-03058				
Cougar	23	$582.00	05-18600				
Cuby	12.5	$498.00	05-18700				
EAA Bi-Plane	16	$526.00	05-18800				
Fly Baby	14	$516.00	05-18900				
Hatz Bi-Plane	18					$876.00	05-19020
Mustang I	16	$532.00	05-19100				
Mustang II	27	$808.00	05-19200				
Pitts Special	19			$572.00	05-19310		
Pober Pixie	12	(Send Drwg. 05-19400)				$949.00	05-19420
Skybolt	29			$529.00	05-19510	$414.95	05-19520
Smith Miniplane	16	$658.00	05-19600				
Starduster I	18	$514.00	05-19700	$613.00	05-19710	$437.95	05-19720
Starduster II	26	$925.00	05-19800	$824.00	05-19810	$870.00	05-19820
Tailwind		$807.00	05-19950				

SEE PRO-SEAL TANK SEALANT AND SLOSHING COMPONENTS IN COVERING SUPPLIES SECTION

OPTIONAL TANK INSTALLATIONS

Sight Gauge (Fittings and Tubing) for Pitts or Skybolt Tanks - no installation charge.
P/N 05-29000 ..... $33.50

Flop Tube, Low Fuel Level Warning, Flush Filler Cap (specify type) - Add $5.00 installation charge and cost of unit to price of tank.

ELECTRIC SENDER - Add $15.00 installation charge and cost of unit to price of tank.

FUEL TANK HOLD DOWN STRAPS

Fabricated from.035 stainless steel. Straps are 1"wide x 36" long. For VariViggen Starduster & others. P/N 05-20400 ..... $2.25

ANTI-CHAFE CHANNEL FOR FUEL TANK STRAPS

Neoprene rubber extrusions to hold 1" wide metal fuel tank straps.
#9 Channel P/N 05-01800 ..... $1.33 Ft.

CAUTION: Electric sender should not be installed in a tank with flop tube to prevent possible entanglement. Tank should be free of everything but flop tube. Use sight gauge with flop tube.

Prices are based on tanks manufactured to the original plans as issued by the designer. Minor modifications such as changes in tank fitting sizes or locations can be made at additional charge. Please submit all pertinent data with respect to desired changes at time of order.

ALLOW 2-3 WEEKS DELIVERY TIME ON ALL TANKS.

CUSTOM TANKS AVAILABLE: SEND BLUEPRINT OR SKETCH FOR QUOTATION
ADD $15.00 BOX CHARGE FOR CRATING TANKS FOR SHIPMENT

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CURTIS SUPERIOR VALVES

CURTIS DRAIN VALVES

Curtis Superior Valve Co., Inc. Fuel and Oil Drain Valves have been the standard in the industry for over 60 years. Curtis valves are used in OEM applications and in the military aircraft. Most valves are made of high quality brass for resistance to corrosion and rusting ,giving them long service life and extended seal life. Most Curtis Valves have a spiral to open and twist to lock for easy fuel sampling and oil draining.

05-01869
CCA-1550

05-01872
CCA-1700

05-03652
CCA-7450

05-03659
CCB-36700

05-03647
CCA-4300

05-03657
CCB-4320

05-03651
CCA-5800-1

05-03648
CCA-4350

05-01935
CCA-3400

05-03658
CCB-36450

*=TSO-C76, B= Brass, AA= Aluminum Alodine, A= Aluminum, BC= Brass/Cadmium Plated, SS= Stainless Steel

Model Number	Thread Size	Installed Length	Material	Part No.	Price
CCA-1250	1/8" NPT	1.358"	B	05-04045	$12.50
CCA-1300	1/4" NPT	1.690"	B	05-04046	$12.80
CCA-1350	38" NPT	1.920"	B	05-04047	$16.99
CCA-1400 Valve*	1/2" NPT	1.685"	B	05-03060	$26.50
CCA-1550 Valve*	1/8" NPT	1.052"	B	05-01869	$12.50
CCA-1600 Valve*	1/4" NPT	1.340"	B	05-01870	$12.55
CCA-1650 Valve*	3/8" NPT	1.510"	B	05-01871	$16.75
CCA-1700 Valve*	1/2" NPT	1.685"	B	05-01872	$26.50
CCA-1800 Valve Non-Locking	1/8" NPT	1.197"	B	05-11156	$14.60
CCA-1900 Valve Non-Locking	1/4" NPT	1.185"	B	05-11157	$14.60
CCA-2000 Valve Non-Locking	3/8" 24 UNF	1.217"	B	05-11158	$14.60
CCA-2100 Valve Non-Locking	7/16" 20 UNF	1.337"	B	05-11159	$14.60
CCA-3400 Valve*	1/2" I.D. Hose	1.337"	B	05-01935	$13.80
CCA-3600	1/4" NPT	1.690"	BC	05-04048	$16.95
CCA-4300 Valve*	7/16" 20 NF3	.625"	BC	05-03647	$18.95
CCA-4350 Valve*	9/16" 18 UNF3	.635"	BC	05-03648	$22.50
CCA-4800	1/4" NPT	1.690"	BC	05-04049	$19.85
CCA-4850 Valve*	1/8" NPT	1.052"	BC	05-00686	$16.90
CCA-4950	3/8" NPT	1.920"	BC	05-04050	$18.50
CCA-5400 Lock Wire Drilled*	7/16" 20 NF3	1.205'	BC	05-04056	$25.50
CCA-5800-1 Valve Non-Locking*	7/16" 20 NF3	.620"	BC	05-03651	$19.75
CCA-5800-3 Valve Non-Locking*	1/8" NPT	1.205"	BC	05-03694	$19.50
CCA-6000	9/16" 18 NF3	1.234"	BC	05-04051	$24.00
CCA-7250	3/4" 16 NF3	1.483"	BC	05-04052	$25.75
CCA-7450 Valve*	1/8" NPT	1.052"	BC	05-03652	$13.95
CCA-7500 Flush Valve	3/4" 16 NF3	1.437"	A	05-04057	$95.75
CCA-7500-1 Flush Valve	3/4" 16 NF3	1.437"	A	05-03653	$77.75
CCA-7500-2 Flush Valve	3/4" 16 NF3	1.437"	A	05-04058	$84.75
CCA-31300	9/16" 18 NF3	1.234"	BC	05-04053	$25.70
CCB-36100	3/4" 16 NF3	1.342"	AA	05-04054	$57.25
CCA-36150 Valve*	1/8" NPT	1.054"	BC	05-03654	$16.65
CCA-36350-1 Flush Valve	3/4" 16 NF3	1.437"	A	05-04059	$78.75
CCA-36400	6/16" 18 NF3	1.234"	BC	05-04055	$24.00
CCA-39000 Valve*	1/4" NPT	1.340"	SS	05-03655	$33.55
CCA-39500 Valve*	9/16" 18 UNF3	1.084"	BC	05-03693	$33.50
CCA-39550 Valve*	5/8" 18 NF3	1.054"	B	05-01873	$32.65
CCA-39560 Valve	5/8" 18 NF3	2.000"	B	05-03656	$38.50
CCB-4320 Valve*	7/16" 20 NF3	.835"	BC	05-03657	$17.80
CCB-36450AF Flush Valve	3/4" 16 NF3	.755"	AA	05-03658	$77.65
CCB-36700 Valve*	1/8" NPT	1.058"	BC	05-03659	$12.85
CCB-36750 Valve*	1/8" NPT	1.058"	SS	05-03660	$28.50
CCB-37000 Valve*	1/2" NPT	1.685" (Body) .875" (Stem)	B	05-03061	$40.50

AP

FLUSH VALVES ADAPTER PLATE ASSEMBLY

P/N 05-04545

Overall Dia. 2.75 Depth: 640,000-650,000 (From mounting surface to bottom hole dia: 1-1/2")
Flush Valve Adapter Plate Away PLT-275V
P/N 05-04545.....$113.75

P/N 05-04546

Flush Valve Adapter Plate Assembly.With 6 holes PLT-275AV P/N 05-04546.....$126.75

CURTIS SUPERIOR REMOVAL TOOLS

Helps with the installation and removal of Curtis flush mounted valves without damage. Eliminates the problem of damage as well as valve torque.

Name	Works with valve:	Part No.	Price
CST-18	CAA-1250, 1550, 4850, 7450, 9950, 36150, CCB-36750	12-02244	$48.50
CST-78	CCA-1400, 1700, 39550, 39560, CCB-3700	12-02245	$49.85
CST-916	CCA-1300, 1600, 3600, 4800, 4900, 5900, 39000	12-02246	$48.50
CST-1116	CCA-1350, 1650, 2440, 2450, 2460, 4320, 4950, 5400, 5800-1	12-02090	$48.50
CST-36450	CCB-36450, CCB-36450-5	12-02280	$64.50

QUICK DRAIN HOSES

A simple push and twist action locks the CCB-39600 Series Quick Drain Hose in place and opens the drain. Fuel / oil flows through 5' of high grade vinyl tubing preventing spillage.

Quick Drain Hose	Connector Color	Used with Valves	Part No.	Price
CCB- 39600-1	Black	CCA-1400, CCA-1700, CCA-39550	05-00138	$17.90
CCB- 39600-2	Blue	CCA-1350, CCA-1650, CCA-4950	05-00139	$17.50
CCB- 39600-3	Yellow	CCA-1300, CCA-1600, CCA-3400, CCA-3600, CCA-4800, CCA-4900, CCA-39000	05-00141	$17.65
CCB- 39600-4	Silver	CCA-4350, CCA-7250, CCA-36400, CCA-36650	05-00142	$17.50
CCB- 39600-5	Brass	CCA-1250, CCA-1550, CCA-4300, CCA-4850, CCA-9950, CCB-36750	05-00143	$17.90

OIL DRAIN VALVE ASSEMBLIES

Jabiru Rotax

05-03540

08-06258

08-06257

Curtis Oil Drain Valves for Jabiru and Rotax			
Description	Application	Part No.	Prices
Curtis Oil Drain Valve - 1/2" - 20 Brass Lockwire Drilled Action-Spiral, Lock Open	Jabiru 2200, 3300	05-03698	$34.50
Curtis Oil Drain Valve - 12mm - 1.75mm Brass, Length 1.45" Lock Wire Drilled Action-Spiral, Lock Open	Rotax 912F2, 912F3, 912F4, 914F2, 914F3, 914F4	05-03697	$34.50
Curtis 90 Degree Adapter for Jabiru and Rotax			
Jabiru 90 Degree Adapter CCA-2480	Jabiru 2200, 3300	08-06258	$52.75
Jabiru Oil Drain Valve CCA-2460. For Experimental Use Only. 12 mm - 1.75 mm Brass, Length 1.45". Lock Wire Drilled. Action- Spiral Lock Open.	For Jabiru 2200, 3300	15-05444	$34.50
Rotax 90 Degree Adapter Thread Size: 12mm-1.75mm, Internal/External Brass CCA-2470	Rotax 912F2,912F3, 912F4, 914F2, 914F3,914F4	08-06257	$52.75
Oil Drain Valve Adapter Assembly			
Oil Drain Valve Adapter Assembly	Rotax	05-03539	$85.75
Oil Drain Valve Adapter Assembly	Jabiru	05-03540	$85.50

CURTIS FLUSH MOUNTED FUEL VALVES

05-04885 05-04886 05-04887 05-04888 05-06490

Now FAA TSO-C76 Approved. Brass Fuel Valves, Push to Open, Non-Lock Open, Use Pin Type Cup. Use Curtis Drain Cup - CCA-39680.

Valve No.	Valve Thread	Auto Valve PN	Saf-Air PN	PN	Price
CCA- 2500	1/8 NPT	F391-18	SA-18	05-04885	$18.50
CCA- 2600	1/4 NPT	F391-14	SA-14	05-04886	$18.50
CCA- 2700	3/8-24 UNF	F391-32	SA-32	05-04887	$18.50
CCA- 2800	7/16-20 UNF	F391-72	SA-72	05-04888	$18.50
CCA- 2900	1/2-20 UNF	F391-82	SA-82	05-06490	$18.50

CURTIS QUICK DRAIN SECURITY SYSTEM

This Curtis Quick Drain Security System is designed to accept a locking device that will prevent tampering and the theft of fuel. FAA TXO-C76 approved. The dash number on the model numbers below indicates the number of valves and locks included. System Contains: CCA-39650 Quick Drain Valves, CCA-39660 Quick Drain Locks, CCA-39670 Master Keys, and CCA-39680 Sample Cup Opener

Part Number	Contains	Part No.	Price
CCA-39700-2	2 Tank Locking System	05-01239	$38.65
CCA-39700-4	4 Tank Locking System	05-01255	$70.75
CCA-39700-6	6 Tank Locking System	05-01256	$99.95

SAF-AIR FUEL DRAIN VALVES

AP

SAF-AIR DRAIN VALVES

SAF-AIR push type fuel drain valves are close tolerance valves of simple design. These valves provide the most trouble free operation of any other line of valves in the industry. SAF-AIR valves are manufactured with an o-ring placed on the stem to seal against a flat seat on the body. This design eliminates an area where dirt can gather, thus putting an end to the main cause of fuel drain valve drip. FAA & PMA APPROVED.

CAV-110H-4 CAV-160H-4 CAV-170H-4 CAV-180H-4

CAV-110 CAV-160 CAV-170 CAV-180

MODEL CAV-110 1/8" NPT - For Cessna 310 tip tanks; Mooney Mark 20 and 20A; all Ercoupe models; Bellanca, Taylorcraft model B; Stinson 108, 108-1, 108-2, 108-3; Voyager model 10 and 10A; Navion; Waco VK series and UPF; and Sea Bee. Fits all standard gascolators. MODEL CAV-160 1/4" NPT - For Piper models J-3, J-4, PA-11, -12, -14, -25, -16, -17, -18, -20, -22, -23, and -15 Tri-Pacer; Apache; Champion; Aeronca; Cessna T-50 and earlier 120 and 140 models; and Beechcraft AT-11 and C-18S. MODEL CAV-170 7/16-20 NF-3 - For all Cessna late 140A models, 150, 170, 170A, 170B, 172 and 175. MODEL CAV-180 3/8-24 NF-3 - For Cessna 180, 182, 185, 190, 195, 205, 210, 310, 310A, 310B, 310C and 336. CAV-100H-4, CAV-160H-4, CAV-170H-4, CAV-180H-4 - All four models come with 1/4" hose end.

Note: All aircraft applications are for general reference only. Verify correct valve for your aircraft before ordering.

Part No.	Thread	Price	Part No.	Thread	Price
CAV-110	1/8" NPT	$14.50	CAV-170	7/16-20 NF	$15.95
CAV-110H4	1/8" NPT	$19.50	CAV-170H-4	7/16-20 NF	$20.50
CAV-160	1/4" NPT	$14.50	CAV-180	3/8-24 NF	$15.95
CAV-160H-4	1/4" NPT	$19.50	CAV-180H-4	3/8-24 NF	$17.90

Replacement Seals	Price Each
MS29513-006 Tip (all models)	$0.24
MS29513-011 Seat (CAV-180)	$0.26
MS29513-012 Seat (CAV-170)	$0.26

SAF-AIR SPECIALTY FUEL DRAIN VALVES

4350-6L F75 P3750 C500

SA-60S SA5817-4C

The F75 is used on wing tip tanks or any application where a 3/4"-16 flush mounted fuel drain valve is needed. This aluminum valve is simple and clean to operate, using any standard sampling tube. Just push up on the center of the valve to sample fuel. Our new design allows all the fuel to enter the tube without leakage. This valve is designed for use on Cessna 310 through 441 model airplanes. • The C500 is used on the bladder style wing tanks with a 1/2" diameter nozzle. • The P3750 has a 3/8" NPT thread and is designed for use on those applications. Both valves provide push-to-test or push-and twist features for locking the valve open. Material is 360 brass. • The SA5817-4C is used with a 3/4"-16 bulkhead fitting to mount the valve flush with the outside skin of the plane. A hose is attached to the valve with a 7/16"-20 fitting at the low point of the fuel system.Material is anodized aluminum. • The SA-60S valve is the same as the CAV-160 except it is constructed of 304 stainless steel. Valve can be used in highly corrosive applications such as salt water. • 4350-6L has a 7/16"-20 thread and a long stem that can be cut to length for your application. Material is anodized aluminum.

Part No.	Thread	Price	Part No.	Thread	Price
C500	1/2" Tube	$14.50	SA-60S	1/4" NPT	$38.65
P3750	3/8" NPT	$17.25	4350-6L	7/16"-20	$67.75
F75	3/4-16	$78.75	SA5817-4C	3/4"-16	$79.80

PIPER FUEL DRAIN KIT

Developed in compliance with Airworthiness Directive 85-06-04 for Piper aircraft. Fits most popular Piper aircraft, including J-3, 4, 5; PA-12, 14, 15, 16, 17, 18, 20 & 22. Fuselage kit includes a bushing, elbow, elastic grommet, hose, clamp, drain valve, warning sign & instructions (AD 85- 06-04). Wing kit incl. bushing reducer, drain valve, warning sign & instructions (AD85-06-04).

Fuselage Tank Fuel Drain Kit ..... P/N 05-01892 ..... $52.75

Wing Tank Fuel Drain Kit ..... P/N 05-01893 ..... $26.50

Wing Tank Fuel Drain Kit/Flush Drain ..... P/N 05-01894 ..... $24.50

F391 FLUSH DRAIN VALVE

Valve mounts in the sump, the same as original plug, with no projection. Can't be knocked off or opened by particles thrown from propellers. Opens only when operated with sampler cup, rod or wire. Clear cup permits inspection for water or contaminants. FAA approved.

Part No.	Thread Size	Application	Price
F-391-14	1/4" NPT	Aeronca, Beech AT-11, D-18S, Piper PA-11, 12, 18, 20, 22, Apache, champion, Howard	$25.75
F-391-18	1/8" NPT	Stinson, Waco VK, UPF, Seabee, Bellanca, T-Craft "B", Navion	$25.50
F-391-32	3/8-24	Cessna 180, 182, 195	$23.85
F-391-72	7/16-20	Cessna 140, 150, 170, 172, 175	$25.50
F-391-82	1/2-20	Cessna Cardinal, 210	$23.80

Sampler Cup - Fits all F-391 Valves ..... P/N 05-17300 ..... $4.65

SAF-AIR FLUSH-MOUNTED DRAIN VALVES

SA14 SA18 SA32 SA72 SA82 SA187 SA53S

SAF-AIR designed its line of flush mounted fuel drain valves to be an exact replacement for the Auto Valve F391 line of flush fuel drain valves. Unlike the Auto Valve, SAF AIR valves can be rebuilt. These valves offer a dependable, low-cost solution when a flush mount is needed. FAA & TSO-C76 approved.

P/N	Size	Equiv.	Price	P/N	Size	Equiv.	Price
SA14	1/4 NPT	F391-14	$21.50	SA72	7/16-20	F391-72	$21.50
SA18	1/8 NPT	F391-18	$21.50	SA82	1/2-20	F391-82	$21.50
SA32	3/8-24	F391-32	$21.50	SA187	1/8 NPT	F391-187	$21.50
				SA53S	7/16-20	F391-53	$21.50

LOCK OPEN SAF-AIR DRAIN VALVES

Similar to the drain valves above with including the capability of locking in the open position making pre-flight check for contamination and water in the fuel system very easy. Models 1250 & 1250H are popular choices to install on gascolators.

FAA & TSO-C76 APPROVED.

1250H 2500H 3750H 4375H

1250 2500 3750 4375

Part No.	Size	Price Ea.	Part No.	Size	Price Ea.
1250	1/8 NPT	$17.50	1250H	1/8 NPT*	$21.55
2500	1/4 NPT	$17.50	2500H	1/4 NPT*	$21.65
3750	3/8-24	$17.50	3750H	3/8-24*	$21.50
4375	7/16-20	$15.75	4375H	7/16-20*	$19.70

*These valves come with 1/4" hose adapter

FUEL DRAIN VALVE KITS FOR CESSNA, PIPER, AND BEECHCRAFT

These high quality fuel drain valve kits are FAA-PMA approved for a wide range of Cessna, Piper, and Beechcraft aircraft. These drain valves prevent drain nipple slippage, require no O-rings, feature corrosion free construction, and use the industry standard 1/8" pipe thread valve. Features: • The valve can be rebuilt • Fuel resistant o-ring - Fluorosilicone • Push to test against the wing surface Specifications: • Material: Valve 360 Brass, Housing Stainless • Finish: Cadmium Plate • Temperature: -100° to +350°F (-73° to +177C) • O-Rings: M25988-005 • Pressure: 60 PSI max.

Description	Part No.	Price
Kit for Cessna	05-03566	$136.95
Kit Beech	05-03567	$137.95
Kit Piper	05-03568	$137.95

ACS GASCOLATOR

All-metal gascolator with S.S. screen, 1-7/8" dia. cadmium plated steel bowl w/quick drain. Top is CNC machined from 6061-T6 aluminum. Top casting has 1/4" pipe ports for 3/8" fuel line and one 1/8" pipe port for primer fitting. Wt: 8 oz. May be used with aviation and/ or auto fuel. Made in the U.S.A.

P/N 10580 ..... $82.75

Replacement Gaskets - For auto fuel 3/32" thick x 2-1/8" O.D. 10536-1 P/N 06-00441 ..... $5.85

Replacement Screens -

120 Microns Stainless Steel ..... P/N 10543-1 ..... $2.45
74 Microns Stainless Steel ..... P/N 05-03436 ..... $3.85
Replacement Gascolator Bowl ..... P/N 10541 ..... $23.80

ACS GASCOLATOR INSTALLATION BRACKET

Versatile bracket of .016 stainless steel accommodates gascolators with either metal or glass bowl. When mounted as illustrated, inlet and outlet connections are on sides. When bracket is inverted, one port of gascolator faces firewall for direct routing of fuel line through firewall. Fits gascolators sold after May 1, 1989. Made in the U.S.A.

P/N 10371 ..... $21.50

ACS HIGH PRESSURE GASCOLATOR

New ACS high pressure gascolator. Lighter weight and simpler design than the ACS "classic" gascolator. Bailwire and attaching hardware have been eliminated. Threaded collar secures bowl to top. Tested to 50lbs. Bowl is cadmium plated and top and collar are anodized for corrosion protection. Made in the U.S.A.

High Pressure Gascolator ..... P/N 05-04248 ..... $114.75
Replacement Gasket 10536-1 ..... P/N 06-00441 ..... $5.85
Replacement 120 Micron Screen 10543-1 ..... P/N 10543-1 ..... $2.45
Replacement 74 Micron Screen ..... P/N 05-03436 ..... $3.85

FAA-APPROVED GASCOLATORS

CNC-machined out of 6061 aluminum for longer use. Anodized "O" ring seals for improved sealing capabilities, a bayonet tab locked bowl system. Direct replacement for factory parts. FAA-approved for many Piper, American Champion, Husky, Maule, Taylorcraft, Dynac and Cessna aircraft. Fits in existing Piper mounting brackets. Mounting brackets available for Cessna. Great for homebuilders also. All fittings and drain plugs are for display purposes only and are not included with Gascolator purchase. Check the Aircraft Spruce website for aircraft cross-reference list or contact us for gascolator approved for your aircraft.

SA3-00

SA3-00B

SA3-10

SA3-10A

Model	Size	Part No.	Price
SA3-00	1/4 NPT - 3/8" Line - 3 oz.	05-00840	$224.95
SA3-00B*	1/4 NPT - 3/8" Line - 3 oz.	05-02674	$224.95
SA3-10	3/8 NPT - 1/2" Line - 4 oz.	05-02675	$285.95
SA3-10A*	3/8 NPT - 1/2" Line - 4 oz.	05-00894	$283.00

8130 Forms are not available for these gascolators.
* Note: This unit does not require a bracket for installation.

USHER GASCOLATOR 4

Can be used on fuel injection systems up to 50 psi .Anodized inside and out to prevent corrosion. Has two 1/4" NPT ports for 3/8" fuel line, a 1/8" primer port, and a 1/8" NPT drain valve port. Mounting bracket not included. Now comes ready to mount to firewall.

Gascolator ..... P/N 05-00632 ..... $78.90
Replacement Screen ..... P/N 05-25972 ..... $2.50

FUEL FILTERS

P/N 05-33031

P/N 05-33033

P/N 804

For homebuilts. Used on VariEze and various gyrocopters. Rated to 10 PSI. Not recommended for fuel injected systems.

Description	Part No.	Price
1/4" Fuel Filter (Metal)	05-33031	$6.25
3/8" Fuel Filter (Plastic)	05-04701	$6.75
1/4" Fuel Filter (Plastic)	05-33001	$5.95
Universal Fuel Filter Inline 1/4",5/16",3/8"	15-05826	$17.50

MICRON 10 FUEL FILTER

Length: 4.25" Filter medium: 1.375" dia. 304 pleated SST disk Dia: 2.0" Filter Efficiency: 10 Micron Flow rate: 15.3 gpm Oper. Press: 8,000 PSIG Weight: 5 oz. Drop in pressure: 1.0% Fitting Size: AN6. This filter is washable and reuseable P/N 05-01699 ..... $87.95

GATS JAR FUEL SAMPLER

The incredible GATS Jar allows a pilot to pour the fuel used in the preflight check back into the fuel tank without fear of water contamination. Also detects jet fuel in the event of inadvertent fueling of your aircraft with jet fuel. ...

12 oz. ..... P/N 05-21250 ..... $17.85
16 oz. ..... P/N 05-04237 ..... $17.85
Replacement actuator ..... P/N 17-00043 ..... $5.95

GATS JAR BUNDLE PACKS

6 Pack ..... P/N 17-00284 ..... $96.00
12 Pack ..... P/N 17-00285 ..... $191.95
12 Pack ..... P/N 17-00286 ..... $770.00
100 Pack ..... P/N 17-00287 ..... $1,605.00

FUEL TESTERS

The unique snap-on probe fits all quick-drain valves, stores compactly, and reduces spillage, loss, and probe breakage. Also includes a chrome-plated screwdriver blade with both a Phillips and a slotted head. 4" ..... P/N 05-00448 ..... $6.95
6" ..... P/N 05-03386 ..... $6.75

CURTIS FUEL SAMPLER CUP

This fuel sampler cup is designed for use with many popular fuel drain valves including the F391 drain valves used on many of today's productions aircraft. Wide bowl allows fuel sampling without fuel dripping onto the hands.P/N 05-17300 ..... $4.65

ASA AIRCRAFT FUEL TESTING CUP

Protect yourself from fuel contamination by visually checking the fuel for water and debris. Clear cup with a reinforced steel pin that works with most aircraft. Measures 2-1/2" high x 1-3/4" diameter. Lifetime warranty. P/N 13-02353 ..... $5.50

JEPPESEN DELUXE AIRCRAFT FUEL CHECKER

A removable bronze (3/32" brazing rod) replaces the flimsy plastic stick. Magnified viewing area and 100% of the sample can be seen. A removable splash guard prevents a fuel shower on the user, and the guard stows flat along side when not in use. P/N 05-17215 ..... $16.95

GASOHOL TESTER

This compact fuel tester / double tip screwdriver combo measures the presence and percentage of alcohol in gasoline, and tightens errant screws. P/N 05-03439 ..... $5.95

MULTISUMP AVIATION FUEL TESTER

MultiSump+™ allows the pilot to sample and individually inspect fuel from each sump while a quick dump feature transfers fuel to the lower catch can thus eliminating emptying the tester after each sump. P/N 05-04653 ..... $24.95

FUEL TESTER CONTAINER

A polycarbonate airtight containter for clean, odor free storage of a fuel tester. Can also be used to store other items like reading glasses that you want to protect from breaking. 9"x2.5"x1.75". 2.5 o.z. P/N 13-12408 ..... $14.99

K&N SCREEN DISC FUEL FILTERS

High volume, low pressure in-line gas filters are easy to clean by simply backflushing. 5/16" ..... P/N 15-05456 ..... $7.95
1/4" ..... P/N 15-05457 ..... $8.60

K&N MINIATURE FUEL FILTER

High volume, low pressure in-line gas filters are easy to clean by simply backflushing. Fits 1/4" ID fuel line.

P/N 15-05658 ..... $5.35

MULTISUMP AVIATION FUEL STRAINER

Use with your existing Fuel Tester to remove contaminants and water from your samples during pour back.

P/N 05-08097 ..... $8.95

ACS FREE FLOW ONE-WAY CHECK VALVE

Prevents return fuel flow during normal operation but provides by-pass fuel feed in an emergency if the fuel pump fails. Wt. 1 oz., 2-7/8" long. Use with tube fittings for 3/8" dia. fuel line. Anodized for corrosion resistance. ..... P/N 10630 ..... $27.50

FUEL FILTER

In-line, high-capacity, translucent filter with screen. Has standard 1/4" barb inlet and outlet tubes. Length: 2.95" dia.: 1.20" P/N 05-01030 ..... $3.85

FUEL FILTER

In-tank type. Brass construction with fine-mesh screen. Has standard 1/4" barb inlet and outlet tubes.P/N 05-01031 ..... $3.90

3/8 INCH PLASTIC FILTER

Plastic in-line fuel with 3/8" inlet & outlet - metal version is 33033 with hoses and camps. Style: Fuel Filter. Height: 3.543. Outer Diameter: 1.826. Nominal Micron Rating: 30

P/N 05-04701 ..... $6.75

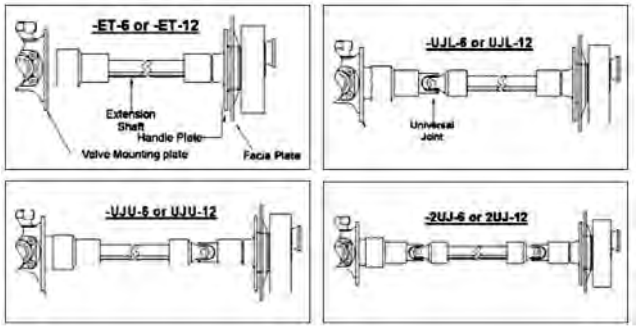
AP

EXTENSION FUEL VALVES - GASCOLATORS

AP

ANDAIR EXTENSION FUEL SELECTORS

For use with any Andair valve. The kit includes everything needed to operate the valve remotely by way of a specially extruded tube. There is no riveting involved, just cut the tube down to length and fit together. To maintain the firm detent at each tank selection, there is a detent cap on the top of the valve. The special tube then fits into this. Then, so as to maintain the safety feature, where the valve cannot be inadvertently switched off, the button has been moved to the upper section. Like the standard valves, the button must be raised to switch the fuel of. The tube is available 6" or 12" long and 4 extension options are available. The extension must be ordered with the valve. (i.e. an extension cannot be retro fitted to a previously purchased valve).



Option	Size (In.)	Price
ET	6	Call or Email for price and availability
1JU	6	
2JU	6	

Option	Size (In.)	Price
ET	12	Call or Email for price and availability
1JU	12	
2JU	12	

E | Valve Part No. | ET / 1JU / 2UJ | 6 / 12

i.e. FS25f5-M or FD20-20-D2-6M

Length of extension tube:
6 = 6" long.
12 = 12" long.

ET: with one universal joint on lower part of valve
UJL: with one universal joint on the upper section of the valve
UJU: with 2 universal joints.

Example:
E-FS25f5-M-ET-6 = (6"long, 1/2"Left, Main, Right, Off, Straight Ext. Valve)
E-FS20-20-D2-6M-2UJ-12 = (12"long, 3/8"duplex fuel selector extension with 2 UJs and 12" tube).

SPECIAL ENGRAVING - Andair can offer special engraving for all of the available valves. Please contact the Aircraft Spruce technical department for more information. Here are some examples:

GASCOLATOR FIREWALL FITTING

Includes mounting flange and backing plate. Mount your gascolator solidly on the firewall with this special bulkhead fitting. Simply drill a 5/8" hole through the firewall and a backing plate on the cabin side and rivet the 1-1/2" x 1/8" flange to the firewall. Connect the incoming fuel line to the AN6 male tube fitting on the cabin side. Screw the gascolator onto the 1/4" male pipe (on the engine side). Machined from mild steel (303 stainless steel). P/N 05-00907..... $21.99

ANDAIR GASCOLATORS

05-29551

Andair make Gascolators for both 3/8" and 1/2" lines. Both types have a screw locking ring that prevents the bowl from coming off, and a facility for this to be wirelocked. The bowl is internally sealed with an Viton (R) O-ring. A PTFE coated 70 micron Stainless Steel mesh is used as the filter screen. The PTFE coating helps prevent water from passing, by maintaining it as a droplet formation. A large filter area is present and wide passages have been incoropated so that the pressure loss through the Gascolators is kept to an absolute minimum. There is an 1/8 NPT hole on the bottom of the bowl so it can be drained and also one on the top of the body. This one can be used as a pressure tapping or a filtered supply to the primer pump. A selection of fittings can also be used with the GAS375 and the GAS500.

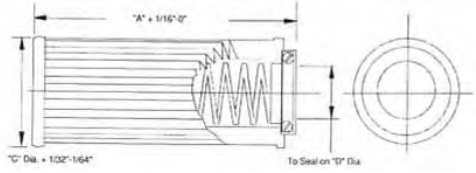
GAS375M with -6 Male Fittings..... P/N 05-29551.....$229.00
GAS375F w/ 1/4" NPT Female Fittings..... P/N 05-29552.....$229.00
GAS375B w/ Banjo Fittings..... P/N 05-29553.....$243.95
GAS500F - 3/8" NPT Female Fittings..... P/N 05-00129.....$397.00
GAS500M -has -8 Male Flare Fittings..... P/N 05-00136.....$397.00
Replacement o-ring for GAS375..... P/N 05-00704.....$7.50
Replacement o-ring for GAS500..... P/N 05-00706..... $14.50
Replacement screen for GAS375..... P/N 05-00707..... $53.90
Replacement screen for GAS500 ..... P/N 05-00708..... $89.50
Stainless Steel Drain Valve..... P/N 05-00709..... $39.95

ANDAIR CHECK VALVE

Built from aircraft grade Aluminum and anodized for corrosion protection this lightweight and compact unit is excellent. The check valve is ideal for tank vents and high pressure fuel pump bypass lines. Its extremely light weight internal shuttle operates with the slightest pressure yet the internal O-ring seals allow the unit to be used up to 50 PSI. Other qualities include break out pressure less than 1 PSI, great flow characteristics around shuttle, and bleed allows shuttle to weep off pressure in the event of a blocked line. Features AN-6 (3/8") fitting on bottom. Valve measures 5/16" dia. x 2.75" long.

Model No.	Bleed	End Fittings	Part No.	Price Ea.
CK250	No	7/16-20	05-00713	$76.85
CK250-B	Yes	7/16-20	05-00714	$76.85
CK375	No	9/16-18	05-00716	$76.85
CK375-B	Yes	9/16-18	05-29555	$76.85
CK250-H	No	1/4" hose	05-00717	$76.85
CK250-H-B	Yes	1/4" hose	05-00718	$76.85
CK375-H	No	3/8" hose	05-00719	$76.85
CK375-H-B	Yes	3/8" hose	05-00721	$64.50

PUROLATOR AN6235 SERIES LINE FILTER ELEMENTS



* MIL-F-5504 Qualified
* Qualified for use in MS28720 and AN6234 filter assemblies.
* Operating Temperatures: -65F TO + 275F
* Element Collapse:150PSID Minimum.
* Filtration:10 Micrometers.
* Hdraulic O-ring.
* Media: microleat(c) elements (resin impregnated cellulose)
* Bubble Test 100%

AN No.	A	C	D	Part No.	Price
AN6235-1A	1.937"/ 1.875"	.859"/ .813'	.375"/ .373"	08-07076	$9.50
AN6235-34	3.500"/ 3.438"	1.656"/ 1.610"	.875"/ .872"	08-07104	$7.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FUEL VALVES - DUPLEX VALVES

ANDAIR POSITIVE STOP FUEL VALVES

Andair Ltd. of England produce these superb Safety Fuel Selectors. Precision built from aircraft grade materials, with PTFE seals packed against a highly polished ball giving a very smooth action. Designed by an RV builder the Andair valve features a positive stop for the off position. A spring loaded button on the lever must be raised before the lever can be moved to the off position. This eliminates the possibility of turning the fuel off in flight, which is an inherent risk with some other designs. The lever has internal stops and detents on the left and right positions. The FS20 range has been designed for 3/8" fuel lines and the FS25 Range is for use with 1/2" lines. New to the range is the FS20-8 5-way selector valve.

FS20X1-F or FS25x1-F Model 1

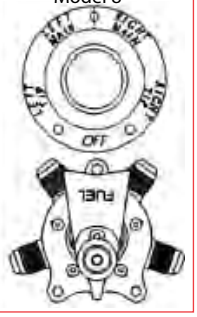
FS20X2-F or FS25x2-F Model 2

FS20X3-F or FS25x3-F Model 3

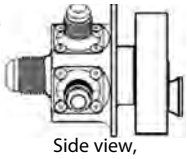
FS20X4-F or FS25x4-F Model 4

FS20X5-F or FS25x5-F Model 5

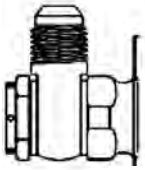
NEW 5-WAY VALVE
FS20x8-F Model 8



SIDE FITTINGS - The side fittings can either be -M (Male 9/16-18 for the 20 range or 3/4-16 for the 25 range) or -F (Female pipe 1/4 for the 20 range and 3/8 for the 25 range)



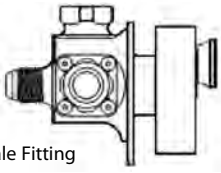
Side view, FS20x8-M



Banjo Fitting

Female Fitting

LOWER FITTINGS ON MODELS 3,4,5 & 8 The Andair Range of fuel selectors is now available with choice of lower fittings for models 3,4,5 and 8. This fitting can either be -M (Male 9/16-18 for the 20 range or 3/4-16 for the 25 range) or -F (Female pipe 1/4 for the 20 range and 3/8 for the 25 rang e) or a Banjo fitting. The banjo fitting has a 360° adjustable Male 9/16-18 end for the 20 range or 3/4-16 for the 25 range.



Male Fitting

Lower Fittings	Model	Side Fitting	Price Ea.
--	1, 2	Male or Female	CALL
Male or Female	3, 4, 5 8		CALL
Banjo	3, 4, 5 8		CALL

Lower Fittings	Model	Side Fitting	Price Ea.
--	1, 2	Male or Female	CALL
Male or Female	3, 4, 5 8		CALL
Banjo	3, 4, 5 8		CALL

FS20-20-D2 DUPLEX VALVES

Used to switch the fuel in an appliction where there is a fuel injected engine that needs flow return. It allows you to pipe surplus fuel to the same tank from which it was drawn. This avoids the worry of overfilling the return tank or having an overly complicated fuel system. Engines that can benefit from this valve are Surburu, Continental, Rotax, and Diesel engines. The FS20-20-D2 has two 3/8" sections where as the new FS25-20-D2 has one 1/2" feed section and on 3/8" return section. The valves can be supplied with either male or female fittings.

FS25-20-D2 DUPLEX VALVES - New to the range is the FS25-20-D2 which has a 1/2" feed ports and 3/8" return ports, for use in larger injected engines.

Model No.	Part No.	Description	Thread	Ports	Price
FS20-20-D2-6M	05-06926	3/8" Feed & Return	1/4" Pipe	Male	$624.00
FS20-20-D2-6F	05-06927	3/8" Feed & Return	9/16-18a	Female	$624.00
FS25-20-D2-6F	05-29562	1/2" Feed, 3/8"Return	1/4,3/8"pipe	Female	$665.00
FS25-20-D2-6M	05-29563	1/2" Feed, 3/8"Return	9/16-18, 3/4-16	Male	$647.00

FS22D2 DUPLEX VALVE

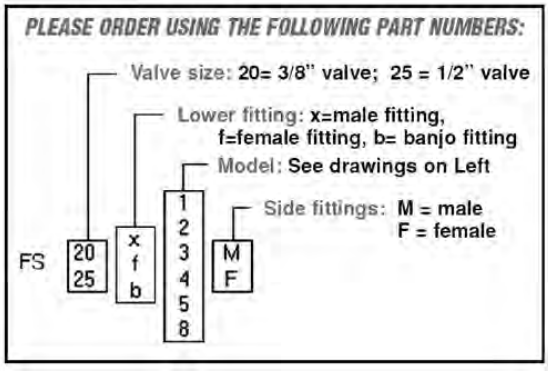
This new duplex valve from Andair has been designed for the use with low flow rate fuel and vapor return systems. An example being the Turbo charged Rotax 912S. Base on the popular FS20x2, the FS22 retains the key features of small size and light weight. The return line valve usesour a new style PTFE disc, operated via the main ball valve allowing the return fuel to flow back to the tank from whicn it ws drawn. The FS22 is availab le in two forms, the FS22-2PD with its 1/8" female pipe fittings pointing downward (see image) or the FS22-2PS (sideways pointing fittings). Both valves include all of the safety features that appear in he full range of Andair Fuel Selectors.

Model No.	Part No.	Description	Thread	Ports	Price
FS22-D2-6F-PS	05-29564	3/8"Feed,1/8"Return	1/4,1/8"Pipe	Female	$439.00
FS22-D2-6M-PS	05-29566	3/8"Feed,1/8"Return	9/16-18	Male	$458.00
FS22-D2-6F-PD	05-29567	3/8"Feed,1/8"Return	1/4,1/8"Pipe	Female	$439.00
FS22-D2-6M-PD	05-29568	3/8"Feed,1/8"Return	9/16-18	Male	$439.00

ANDAIR FUEL VALVES

The FS20x4 Fuel Selector is designed for high wing aircraft where it is possible to feed from both tanks simultaneously. Porting for the both position is done internally so there is no need to T the two tanks together. There is a 90 degree action between each tank selection, and the safety feature where the red button on the lever has to be raised to switch off the fuel. On the FS20x4 there are 3 ports. The lower port is the outlet to the engine and can be Male AN-6, Female 1/4NPT or a Banjo fitting which is a 360degree adjustable fitting with a male AN-6 end. Click here for more information on the fitting options. The inlet, side ports can be any of the 3/8" fittings that Andair supplies and are at the 9 O'clock and 12 O'clock positions when looking at the valve with the brass ball spindle pointing upwards (see image to left). At the 3 O'clock position there is a blanking plate that covers up a PTFE gland that opposises the forces of the other 2 PTFE glands. This cannot be removed. One of the great features of this unit is that when the selector is in the OFF position, there is no cross feed between each tank. So if you have your aeroplane parked on a slope, or if one tank is fuller than the other, no cross-feed will occur.

FS20X4 Male ..... P/N 05-02635 ..... $279.00
FS20X2 Female ..... P/N 05-29505 ..... $279.00
FS20X1 Female ..... P/N 05-29506 ..... $279.00
FS20X3 Female ..... P/N 05-29507 ..... $279.00
FS20X5 Female ..... P/N 05-29509 ..... $279.00
FS20B4-M Banjo Male ..... P/N 05-01419 ..... $284.95
FS20F4 Female ..... P/N 05-01432 ..... $275.95



FS20 – 3/8" FS25 – 1/2"

FUEL VALVES

AP

HOMEBUILDERS SHUT-OFF VALVES

A full-flow plug valve with solid bottom and integral mounting bracket. Brass body and plug. Floating stem with O-ring prevents leakage. Packed with synthetic grease which resists gasoline and solvents. Indicating click on 3-port and 4-port valve (CN models) tells when handle is in full open or closed position. Tested to 30 PSI. Not FAA approved.

Part No.	Model No.	Imperial Equiv.	Valve Type	Pipe Thread	Price
6749	210-CL	108HD-04	3-Port*	1/4" Female x 1/4" Female	$26.65
05-01032	210-CN	108HD-06	3-Port*	3/8" Female x 3/8" Female	$29.75
05-01033	200-CL	114-HD-04	4-Port**	1/4" Female x 1/4" Female	$31.65
05-01034	200-CN	114HD-06	4-Port**	3/8" Female x 3/8" Female	$32.85

**For 3 tanks. Flow is from any side to bottom outlet.
Note: Order valve with 1/4" pipe threads for 3/8" dia. fuel line. Order valve with 3/8" pipe threads for 1/2" dia. fuel line. These pipe thread sizes are the ones normally associated with the indicated tube sizes.

FUEL VALVE LEVER

This lever is a direct replacement for the lever that comes standard with the Home-built Shutoff Valve, part numbers 210-CN, 200-CL and 200 CN. It will also replace the lever that is shipped standard with nearly all of the Vans RV Series aircraft. The appearance is much nicer than the stock lever, it is red in color (the standard color relative to fuel) and needs no hardware other than what is sent with the valve. When mounted according to Van's plans the stock lever actually uses the handles as the pointer. P/N 05-03047 ..... $39.50

DOW CORNING 3452 VALVE LUBRICANT

Excellent for lubricating valves and slow moving components exposed to harsh chemicals and solvents. resists deterioration by chlorides, solvents, acids and condensate. Dow 3452 is a white, fluorocarbon thickened, fluorosilicone fluid based grease with a temp. range of -20 to 450°F. z2 oz. tube. P/N 09-00333 ..... $56.75

MINIATURE FUEL VALVES

The lightest (4 oz.) smallest (1.5" long), easiest to operate ball type (not plug) on-off fuel valve available. Light operating force makes it ideal for remote operation. Not FAA approved. Forged brass with 1/4", 3/8", or 1/2" female pipe ends.

1/4" NPT valve ..... P/N 05-06885 ..... $17.75
3/8" NPT valve ..... P/N 05-23330 ..... $27.50
1/2" NPT valve ..... P/N 05-01026 ..... $32.50

CESSNA 172/175 FUEL SELECTOR VALVE

This High Quality Fuel Selector Valve replaces Cessna Valve #0513120-5 for Cessna 172/175 series. PMA'd. ..... P/N 05-11164 ..... $1,295.00

HIGH-PRESSURE BRASS BALL VALVE

Great for use in tight spaces, suitable for high-pressure applications. Connections are NPT. Body is brass, ball is nickel-plated brass, seats are PTFE, and seal is fluoroelastomer. Valves have unrestricted flow (full port). Female x Female • Pipe Size: 1/4" • End-to-End Lg.: 1 15/16" • Lever Handle • Max. Pressure for Water, Oil, and Inert Gas: 1000 psi @ 70°F • Temp. Range: -40° to +300°F • Vacuum Rating: 29" Hg. ..... P/N 05-06885 ..... $17.75

WEATHERHEAD FUEL SHUT-OFF VALVE

3-way Weatherhead valves, with 1/4' female pipe ports feature a Delrin-spool design for smooth operation. Handle mounted on 1-1/4" long shaft. Not FAA approved.

Model No. 6749 3-Port Valve - Flow is from either side to middle port. P/N 6749 ..... $26.65

Model No. 6747 4-Port Valve - Flow is from any horizontal port to bottom port. P/N 6747 ..... $24.90

TWIN COMANCHE STAINLESS STEEL FUEL SELECTORS

Stainless steel valves designed to resolve the corrosion problem, as well as age and wear issues. Identical to the originals, and they use the same gaskets O-rings, and procedures. FAA Approved. The fuel selector valve is manufactured with new stainless-steel design for more durability and performance.

Right ..... P/N 05-04881 ..... $3,865.00 Left ..... P/N 05-04883 ..... $3,865.00

HOMEBUILDERS WEATHERHEAD FUEL VALVE HANDLE

This unique fuel valve handle is designed to provide a positive feel and makes it easy to determine the current tank selection. It fits the popular Homebuilders and Wheatherhead fuel valves and is made from billet 6061T6 aluminum bar stock. They are milled, not cast. Handles are hand deburred, red anodized, and laser etched.

P/N 05-07184 ..... $35.55

SPRL FUEL VALVES

The SPRL-V1 is a three/four way fuel selector offering left-off-right and both if required. There are 90 degrees between selections and the absence of a lower fitting reduces the depth required. The lift and turn selector is instinctive, secure, and easier to use than the complex 'lift button' type. The locking detents avoid accidental movements. The fixings match most installations, and the internal ports prevent cross feeds, unless 'selected to 'Both'. Male AN fittings enable you to plumb straight into the aeroplane system with no extra fittings to buy. The lightweight alloy construction is anodized for protection; the Viton 0 ring seals are suitable for all current fuels. For experimental aircraft only. Fittings must be purchased separately. Many injected engines, Subaru, Rotax, Continental, and some diesels, need a full flow return system.

The new V4 offers a full flow return added to the existing valve base. Ceramic disks and valve simplicity promise a long life with the ceramics. Size: 70mm/2-3/4" deep - no bottom exit. Weight: 225 grams. Fittings: Male AN-6 and AN-8 or Female 1/4" or 3/8" NPT. The return ports are tapped straight (NPS) to give more flexibility in orienting NPT elbows (Female 1/4").

Please note that the accessories listed below are the the only compatible accessories; other standard accessories will not fit these valves.

SPRL V1 3 way valve ..... P/N 05-04450 ..... $159.95
SPRL V1 4 way valve ..... P/N 05-04451 ..... $169.75
SPRL V4 3 way valve ..... P/N 05-08366 ..... $309.00
SPRL V4 4 way valve ..... P/N 05-08367 ..... $299.00

ACCESSORIES

Must purchase these parts. Standard AN do not fit the valves.

AN6 Male Fittings (pk of 3) ..... P/N 05-04452 ..... $11.65
AN8 Male Fittings (pk of 3) ..... P/N 05-04453 ..... $9.95
NPT 1/4" Female Fittings(pk of 3) ..... P/N 05-04454 ..... $11.50
NPT 3/8" Female Fittings (pk of 3) ..... P/N 05-04455 ..... $11.65
SPRL On/Off V2 Male Valve ..... P/N 05-06468 ..... $93.75
SPRL V3-3P Duplex Valve ..... P/N 05-06469 ..... $199.90
SPRL V3-4P Duplex Valve ..... P/N 05-06470 ..... $215.95

REMOTE FUEL VALVE DRIVE

A remote drive has the selector conveniently at hand while the valve and pipes are on the bottom of the fuselage or even on the front of the firewall. We include a flexible universal drive joint to accept small errors in alignment. The standard drive is 12" long but drive shafts up to 6 feet are available. ..... P/N 05-06501 ..... $112.75

RIGHT ANGLE FUEL VALVE DRIVE

We have sourced a high quality gear box to offer a right angle drive with obvious applications to rear engined aeroplanes like the Rutans and other installations where it is not convenient to drive the valve direct (eg. 'cubs' where the valve is easier installed away from the seats and pedals). ..... P/N 05-06558 ..... $17.85

EXTENDED FUEL VALVE DRIVE

We include a flexible universal drive joint to accept small errors in alignment. The standard drive is 12" long but drive shafts up to 6 feet are available. The universal joint is modestly priced as it is not new, but for this usage, 'new, surplus' is ideal. The drive tubes can be cut to any required length and simply push together. We assume that the aeroplane structure will prevent the parts separating once they are installed. Price per foot. 6' shipping limit. Note: Special order lengths available upon request. P/N 05-06557 ..... $13.00

NEWTON BANJO FITTING SETS

The fittings enabled you to plumb straight into the aeroplane system with no extra fittings to buy. The lightweight alloy construction is anodized for protection; the Viton 0 ring seals are suitable for all current fuels. For experimental aircraft only. Fittings must be purchased separately; if needed, 3 AN-6 fittings come with the valve.

Fittings:
AN8 Male NPT 1/4" OR 3/8" Female and banjo fittings are available, all seal to the valve with O ring system Standard AN fittings cannot mate directly to the valve.

1/4" Fitting Set ..... P/N 05-06471 ..... $39.50
5/16" Fitting Set ..... P/N 05-06472 ..... $39.50
3/8" Fitting Set ..... P/N 05-06473 ..... $50.50
1/4" Large Fitting Set ..... P/N 05-06474 ..... $108.95

J-3 FUEL VALVE

This J-3 fuel valve includes a steel handle for use with the original pushpull shut off control. this valve is a significant improvement over the orig nal brass style fuel valve. The new valve has a stainless steel ball seated in an inert composite seat. This improved design eliminates the stiff operation and leaking around the shaft that the original design was prone to. PMA approved. P/N 05-00848 ..... $146.80

ALLEN PREMIUM FUEL SHUT-OFF VALVES

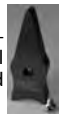
These premium fuel valves are recommended by Rutan Aircraft as the best fuel valves they have seen. They are a direct, bolt-in replacement for Weatherhead and other fuel valves. They turn smoothly and freely with a very positive spring loaded ball detent system which lets you feel the left right and off positions. Manufactured of anodized aluminum. Handle is not furnished with valve. Available in 3 models. Model GS122 valve originally recommended for Long-EZ. Not FAA approved. For experimental aircraft only.

	Model 6S122 P/N 05-29500	Model 6S1000 P/N 05-29515	Model 6S1001 P/N 05-29525
Handle	No	No	No
Ports	3	4	3
Ports Configuration	3 x 1/4-18 NPT	MS33649-06	MS33649-06
Handle Positions	4	4	4
Ports Open			
Position 1	All Closed	1 & 4	C & A
Position 2	A & C	2 & 4	C, A & B
Position 3	All Closed	3 & 4	C & B
Position 4	B & C	All Closed	All Closed
Price Each	$169.75	$348.00	$527.00

HANDLE FOR ALLEN FUEL VALVES

This aluminum handle is specially machined to fit the Allen fuel valves above. P/N 05-01915.....$32.85

ALLEN FUEL VALVE HANDLE



Designed to provide a positive feel and makes it easy to determine the current tank selection. It fits the popular Allen Fuel valves and is made from billet 6061T6 aluminum bar stock. Red anodized, and laser etched. P/N 05-07183.....$33.95

EXTENDED HANDLE SHAFT FOR ALLEN FUEL VALVES

Used to make an extended handle shaft for the Allen fuel valves. The handle extension can be made as long as desired. .....P/N 05-01916 .....$94.50

FUEL FLOW VALVE

Designed for tank installation. Similar to above but without built-in filter. 90° rotation for ON-OFF. Has standard 1/4" barb outlet tube. P/N 05-01041 .....$6.50

FUEL FLOW VALVE

Twin-tank fuel selector valve. 3 positions: LEFT-OFF-RIGHT. LEFT and RIGHT positions are 90° either side of OFF. Panel mount. P/N 05-01042 ..... $7.50

FUEL FLOW VALVE

Panel mounted fuel on-off.
P/N 05-01043 .....$8.75

FUEL TANK VALVE 90 DEGREE WITH GROMMET

Standard replacement valve and grommet for plastic or Quicksilver type fuel tanks. Right angle valve shut-off with a 1/4 turn of the handle. Requires 33/64" hole in tank. Barb end accepts any 1/4" i.d. fuel line. Supplied with Grommet. Weight 2 oz.P/N 15-05334..... $6.50

BANJO FITTING

This can be rotated through 360° then tightened and safety locked. Excellent for applications where space was limited. It can really be described as an adjustable 90° elbow fitting
P/N 05-29565 ..... $63.85

FUEL FLOW ELBOW

Bushed 90° tank fitting with standard 1/4" barb outlet. Requires Rubber Bushing P/N 05-01039.
P/N 05-01045 .....$1.75

90 DEGREE FUEL TANK ACCESS ELBOW

Bushed 90° tank fitting with standard 1/4" barb outlet and 1/4" barb in the tank Requires Rubber Bushing PN 05-01039. P/N 04-02163..... $1.25

RUBBER BUSHING

Required for installation of Fuel Flow Elbow described above. P/N 05-01039.....$0.32

QUICK-DISCONNECT FUEL LINE FITTINGS

05-01035

05-01036

05-01037

05-01038

Complete sets are furnished with both male and female units. Available in both panel mount (left) and in-line (center) styles, with or without internal automatic fuel shut-off. (1/4" tubing). The O-rings may not be compatible with some alcohol based auto fuels.
In-line with shut-off ..... P/N 05-01035.....$12.95
In-line without shut-off ..... P/N 05-01036.....$6.50
Panel mount with shut-off..... P/N 05-01037.....$18.95
Panel mount without shut-off.... P/N 05-01038.....$15.85

PRIMER BULB

Install between fuel tank and engine. A few squeezes prime your engine for easy starting.
Primer Bulb 1/4" Tube Fit - Sm. (5" x 1-1/4").....P/N 05-01046 .....$6.75
Primer Bulb 1/4" Tube Fit - Lg. (7" x 2") .....P/N 05-03690.....$18.75

PRIMER KIT

Everything you need to add a plunger-type primer system to your aircraft. The kit includes the plunger, a reducer "T" fitting, 1/8" barb "T" fitting, and 10 feet of 1/8" pink urethane fuel line.
P/N 05-01047 $19.85

ACS PRIMER

Formerly manufactured by Gerdes Products, this primer has an anodized, all aluminum body and an engraved aluminum knob. The inlet and outlet ports are located on the back end of the pump and both are 1/8" pipe thread. Overall length is 4" and weight is 3.5 oz. New manufacture..... P/N 05-19920 .....$119.65

ESSEX PRIMER

This primer, originally produced by Kohler, is positively leak-proof. Its exceptional priming ability has made it popular with manufacturers of general aviation aircraft. Has 1/8" internal pipe thread inlet and outlet ports. Overall length 3-7/8". Wt. 2.3 oz. New manufacture. Requires two o-rings.....P/N 05-01048.....$477.00
Essex O-Rings for K2404-1/8(2 required).....P/N 05-02174.....$5.45

ELECTRIC SOLENOID ENGINE PRIMER VALVE

These new electric solenoids are recommended by Co-Z Development Corp. as ideal electric engine primers for homebuilt aircraft. These normally closed 2-way valves are direct acting and have only two moving parts, a viton plunger and stainless steel spring. Can be installed in any position and are easy to inspect without removing from the line. Pipe size is 1/8" NPT. Orifice dia. 1/8". Wt. 5 oz. #1 port is out, #2 port is in. Will handle max. PSI of 60.

Mounting Bracket - A universal stainless steel mounting bracket for the 1/8" NPT valves may be ordered separately. The mounting bracket can be assembled to the valve body utilizing the body mounting holes
2V Solenoid VLV 20CC02PV4B2A ..... P/N 05-04368.....$58.75
24V Solenoid VLV 20CC02PV4B2B..... P/N 05-04369.....$59.75
Solenoid Mounting Bracket 4K007..... P/N 05-04370.....$12.25

PRIMER OVERHAUL KIT

Restoring primer pump operation - The kit is replaces the worn O-rings (2) on the primer pump used on non-fuel injected engine installations. The primer seals frequently are not re-lubricated until someone complains the primer isn't working or the engine is hard starting. This is most evident by the pump being hard or stiff to operate. Generally speaking, by the time the pump stops performing, the seals are worn (to the point that lube is of little value) and must be replaced. The kit contains the two O-rings, a packet of Seal Lube, and detailed instructions.
P/N 05-03637.....$4.75

FUEL LINE

Polyurethane tubing, translucent blue in color. 1/4" ID. A superior, premium grade of urethane, the optimum material for ultralight fuel line. (Min. order, 4 ft.) P/N 05-01049 .....$1.25/ft.

PRIMER LINE

Polyurethane tubing, translucent pink in color. 1/8" ID. For primer systems.
P/N 05-01050 .....$0.70/ft.

PULSE LINE

Connects engine pulse outlet to fuel pump pulse inlet. Outside Diameter: 3/8". Inside Diameter: 1/4". Thickness of the Wall: 3/32"
P/N 05-01063 ..... $0.99/ft.

FUEL LINE SPLITTERS/JOINERS

Perfect for feeding from 2 tanks, or for feeding two carburetors from 1 tank. All have standard barbed ends. Made of Delrin.
"T" type, 1/4".....P/N 05-01051.....$1.15
"Y" type, 1/4".....P/N 05-01052.....$1.10
"T" type, 1/8".....P/N 05-01053..... $1.95

AP

FUEL TRANSFER PUMPS – FUNNELS

FUEL FILTER FUNNELS

P/N 05-00026 P/N 05-01054 P/N 05-01055 P/N 05-01371

Mr. Funnel® Fuel Filters are simply amazing. Dirty fuel in.... pure fuel out. It's that easy.
The specially designed filter removes water and dirt from gas, even 2-stroke mixtures. Ethanol attracts water more than regular gasoline. Never before has a fuel filter been more important.
Dirt and water are practically unavoidable in stored fuel, causing microbial growth, corrosive acids, electrolysis and rust. These contaminants can plug filters, corrode components, decrease efficient combustion and cause engine shutdown or system failure.
When fuel is poured through the Fuel Filter Funnel, water and debris will not pass through the filter's fluoropolymer-coated stainless steel filter. Only filtered fuel flows through to your engine, improving its efficiency, durability, and proper operation. The sump area collects the deflected water and debris for proper disposal. The Fuel Filter Funnel will filter gasoline, diesel, heating oil, kerosene and 2-cycle mixed gas.
The Fuel Filter Funnel is a heavy-duty, anti-static, and fast flow funnel with built-in filter technology.
Lawn mowers, tractors weed trimmer/blowers, dirt bikes/ATVs, boats, even airplanes... will have longer useful lives if owners filter their fuel!

Part No.	Height	Diameter	Flow Rate	Price
05-00026	6.00"	3.5"	2.5 gpm	$14.95
05-01054	8.75"	5.5"	3.5 gpm	$19.90
05-01055	10.00"	8.5"	5.as0 gpm	$28.75
05-01371	10.00"	8.5"	12-15 gpm	$52.95

AP

GOATTHROAT FUEL TRANSFER PUMP

P/N 05-02196

P/N 05-02197

GoatThroat Pumps have been in the industrial market for 15 years. Recently introduced to aviators, these pumps deliver fuel efficiently and directly to the filler downspout with a finger controlled discharge nozzle. Made of chemical grade polypropylene, GoatThroat Pumps can pressurize any container in seconds. Internal pressure relief valve opens at 7 psi, but 2 psi is all you need to deliver fuel safely to your plane. A drip-proof faucet dispenses small amount or gives steady flow. Containers remain upright, so there is no extra handing and little chance for accidental spills. Includes the fitting for a 55 gal. drum. 5 gal. can fitting sold separately.

Fuel Transfer Pump ..... P/N 05-02196..... $199.99
Adapter for Blitz 5 gal. can..... P/N 05-02197.....$58.95
Adapter for Scepter 5 gal. can..... P/N 05-03031.....$72.75

VP SPORTSMANS CONTAINERS

These 5 gallon polyurethane ventilated containers are ideal for most motorsport fuels. The Sportsman's Container is a rugged, multipurpose tool that has a multitude of applications in the hangar and on the runway. This 5-gallon workhorse is FDA-approved for the storage of water and is also great for aircraft fluids, oils and industrial liquids. The Sportsman's Container is made using 30% more plastic than the standard 5-gallon containers and therefore designed to handle the rough treatment inherent in the maintenance and upkeep of your aviation equipment.

White Square..... P/N 05-06953 ..... $31.75
White Round ..... P/N 05-06955 ..... $29.75
Blue Square..... P/N 05-06954 ..... $31.75
Blue Round ..... P/N 05-06956 ..... $29.75

Accessories

Replacement Cap ..... P/N 05-06957 ..... $5.95
Replacement Vent Cap..... P/N 05-06958 ..... $1.65
Deluxe Hose ..... P/N 05-06959 ..... $9.95
Syphon Pump ..... P/N 05-06960 ..... $28.50
Large Funnel with Filter..... P/N 05-06961 ..... $46.85

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• 24 Hour Access!

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CLEAN FUNNEL™

model 112

model 415

model 428

Clean Funnel™ is the funnel that keeps itself clean. Replacing the caps on each end after each use prevents left over fluid from dripping out, and keeps your work area or baggage compartment clean. No need to wipe your funnel out with a rag before reusing. Clean Funnel™ is ideal for use with fuel or oil as well as windshield washer fluid, detergents, antifreeze, hydraulic fluid, and more. Great for aircraft, automobiles, motorcycles, tractors, boats, ATV's snowmobiles, and more.

•Model 112 (turquoise) has a 1 pint fluid capacity and a 12" vinyl tube attached to its spout, making it very handy to reach into small or tight spaces.

•Model 415 (red) has a 1-1/2 quart capacity, 17" long with flexible spout, and spout I.D. is 9/16".

•Model 428 (black) has 1-1/2 quart & 13-1/4" long with a flexible spout and 1-1/8" O.D. spout.

Model #	Color	Part No.	Price
112	Turquoise	12-00374	$7.80
415	Red	12-00375	$9.80
428	Black	12-00376	$9.80

OIL INJECTION / WATER OVERFLOW RESERVOIRS

15-06936

High density polyethylene tanks; ideal for Oil Injection Reservoir or Coolant/Water Overflow. Translucent white color easily shows fluid level. Tank is blown molded with a 1/4" thick seamless construction and includes rugged mounting tabs that mount to any flat surface. Includes a threaded 2-1/4" vented cap with tether to prevent loss. Sealed tank without drain, bottom access is easy for either push in fittings or threaded bulkheads with plenty of access thru large cap opening.

1 Quart: 7.74" high x 6.2" wide x 1/4" thick. Weight 10 oz. **Includes 1/4" barb spigot molded on bottom** ..... P/N 15-06828 .....$28.75
1.5 Quart: 7.74" high x 5.9" wide x 1/4" thick. Weight 12 oz.
P/N 15-06830 .....$11.50
2 Quart: 5" high x 6" wide x 1/4" thick. Weight 8 oz.
P/N 15-06936 .....$17.95
4 Quart: 8-1/2" high x 6" wide x 1/4" thick. Weight 20 oz.
P/N 15-04841 .....$19.85
Replacement 2-1/4" Vented, Black, Nylon Cap.
P/N 15-06936-1 ..... $3.40

FUEL CAPS

FUEL SELECTOR PLATE FOR LATER CESSNA 170'S &172'S

This fuel selector plate is billet machined and anodized, with the text engraved on the plate. It is an efficient one piece design which is easy to install and factory guaranteed. FAA/PMA approved.

Cessna 172 - 37 Gals.....P/N 05-00227.....$59.95
Cessna 170 - 37 Gals.....P/N 05-00899.....$59.95
Cessna 172 - 36 Gals.....P/N 05-00901.....$59.95
Cessna 180 - 55 Gals.....P/N 05-00902.....$59.95
Cessna 180 - 60 Gals.....P/N 05-00903.....$52.95
Cessna 180 - 79 Gals.....P/N 05-00904.....$54.75
Cessna 172 - 84 Gals.....P/N 05-00905.....$52.95
Cessna 182 - 55 Gals.....P/N 05-00906.....$59.95

AVMAT AVGAS FUEL MATS

This fuel mat by Aviation Laboratories is made from heavy duty durable synthetic rubber. They are non-static and fuel resistant. Available with a center hole or a top offset hole. Size is 24" x 16", with a 4" diameter hole.

AVMAT-AVGAS1 (Top Hole)
P/N 13-03588.....$83.75
AVMAT-AVGAS2 (Center Hole)
P/N 13-03589.....$104.75
AVMAT-JET1 (Top Hole).....P/N 13-04925.....$98.95
AVMAT-JET2 (Center Hole).....P/N 13-04926.....$104.75

ANDAIR LOCKING FUEL CAP

This Locking Fuel Cap can be installed to RV wing tanks, crafted with a smart elegant design, is lockable with completely random key generation, comes with 2 keys, custom engraving upon request, and has Viton O-ring seal.

P/N 05-08037.....$161.75

THERMOS STYLE PRESSURE FUEL CAPS

Pressure fuel caps are recommended for aerobatic installations. These caps are made with Buna-Nitrile gaskets for fuel resistance. These caps are non-vented for gravity fuel systems. It is highly recommended that a #40 (3/32") drill is used to drill a vent hole through the lower base plate and stud assembly using a drill press.

Part No.	Diameter (I.D.)	Height	Price Each
05-18400	2"	1-3/16"	$48.50
05-18402	2-1/2"	1-3/16"	$41.40

Aluminum weldable adapter neck for use with 2" cap illustrated.
3" Length.....P/N 10367-3.....$28.25
6" Length.....P/N 10367-6.....$30.50

RAM AIR PRESSURE CAP

Tube through cap allows forced air into tank which forces fuel out. Used with wing tank kits.

P/N 05-08077.....$22.50

FUELTAPE

While most FBOs do a great job of keeping fuel orders straight, mistakes can and do happen. As for pilots, sometimes it's not feasible to stand around waiting for the fuel truck to ensure the right fuel is being poured into the aircraft tanks. FuelTape is a highly durable, weatherproof masking tape that clearly indicates to the fueler which grade of fuel must be used. Simply tear off a piece and stick it over the fuel caps and you have a low-cost, reliable system to keep your tanks safe.

FuelTape is available in both 100LL or Jet A versions. The colors and design conform to FAA standards. FuelTape is a simple product that both eliminates mistakes and gives the pilot piece of mind that they can go off and handle other business. Sold by the roll.

Av-Gas.....P/N 05-06416.....$7.25
Jet-A.....P/N 05-06417.....$7.25

ACS TWIST-TO LOCK FLUSH FUEL CAP

The ACS Twist-To-Lock Flush Fuel Cap Assy is machined from 6061 aluminum billet. The cap is available in vented and non-vented configurations. The sealing element for the cap is an easily replaceable viton "O" ring. The bottom of the cap is secured to the bottom of the ring by a safety chain to prevent loss of the cap during flight. The mounting ring may be welded, riveted, bolted or molded onto the tank.

Complete Set (non-vented).....P/N 10600.....$53.75
Complete Set (vented).....P/N 10610.....$57.75
Replacement "O"Ring.....P/N 10609.....$3.95

ACS FLUSH FUEL CAPS

This latest modification of the ACS Flush Fuel Cap (unvented) utilizes a Viton O-Ring as the sealing element between the cap and mounting ring. The Viton O-Ring is compatible with aviation fuels and auto gas. The cap with Viton seal is interchangeable with the old-style cap with rubber gasket. Machined from solid aluminum. Ring may be welded, riveted, bolted or molded to the tank. The bottom of the cap is secured to the bottom of the ring by a safety chain to prevent loss of the cap in flight. Mounting ring flange is 1/8" thick. Ring opening is 2-5/8" dia. Overall dia. 4-3/8".

Complete Set (New-Style Cap w/Mounting Ring)
P/N 05-01390.....$46.25
New Style Cap Only.....P/N 05-01391.....$39.95
Replacement VitonO-Ring (for New-Style Cap Only)
P/N 05-01392.....$7.70

PIPER FAA / PMA FUEL CAPS

Application	Description	Part No.	Price
PA-24-250 s/n-24-01 - 24-3687 PA-24-260 s/n-24-4993 - 24-6000 PA-24-400 s/n-26-02 - 26-148 PA-30 s/n-30-02 - 30-2000 PA-39 s/n-39-01 - 39-155 Replaces OEM 27221, 23/8"	Piper Fuel Cap PA-24 2-3/8" Dia	05-08079	$113.75
PA-23-150, 160 s/n-23-01 - 23-2046 Replaces OEM 17672, 1-7/8"dia.	Piper Fuel Cap PA-23 1-7/8" Dia	05-06466	$139.75
PA-23-250, 23-235, all serial numbers Replaces OEM 16097, 2-3/8" dia	Piper Fuel Cap PA-23 2-3/8" Dia	05-04161	$89.95

PIPER PA23 FUEL CAP

Piper PA 23 fuel cap part number CA16097N is an improved version of part number CA16097. This new part uses an improved elastomer with superior fuel resistance. The fuel cap is eligible for PA23 aircraft.

P/N 05-04161.....$89.95

PIPER PA-23 FUEL CAP

The 2 inch Piper PA-23 fuel caps are back. PMA Products, Inc. announced the return of their CA17672N fuel caps that are manufactured with improved rubber specifically formulated to prevent swelling. This part number replaces Piper part numbers 454-084 and 17672-000. Specifications: FAA-PMA Approved. Eligible Aircraft: Piper PA-23 (Beginning S/N 23-1, Ending S/N 23-1182) Piper PA-23-160 (Beginning S/N 23-1177, Ending S/N 23-2046).....P/N 05-06466.....$139.75

FUEL CAP SEAL

Replacement fuel cap seal part number CA38241 has added eligibility for the Cessna Citation 525, 650, 680 and 750 aircraft. It is also approved for Beechcraft aircraft. This seal fits fuel caps with part number 9914106-13. Ideal and inexpensive! Don't pay $750.00 for a fuel cap when you only need to replace the seal!

P/N 05-04162.....$48.75

USHER FLUSH FUEL CAPS

The UD-3 flush fuel cap assembly is an unvented cap similar in design to the #5 style cap. The aluminum mounting ring has a 2" dia. opening and an overall dia. of 3-3/4". It may be riveted, bolted or molded to the tank. It is currently used on many popular homebuilts such as the RV's, Lancair, Velocity & White Lightning. Specify flat or contoured adapter.

UD-3 with Flat Adapter.....P/N UD-3-F.....$44.85
UD-3 with Contoured Adapter.....P/N UD-3-C.....$44.50
Usher O-Ring 2-325 Large.....P/N 05-02146.....$1.65
Usher O-Ring 2-012 Small.....P/N 05-02147.....$0.95

GAS TANK CAP GASKETS

Part No.	Description	Size	Price Ea.
05-18500	Piper	3" OD, 2" ID	$4.95
05-18505	Cessna	2-1/4" OD, 1-3/8" ID	$4.75

AP

FUEL CAPS

AERO FUEL CAPS - ALUMINUM

05-00045

05-28651

05-28652

05-28653

These English fuel caps are used on most of the worlds super cars and bikes, and some series production aero planes. They are beautifully made in forged and bright anodized aluminum. The high precision and easy to operate mechanism is very secure and non vented. They are designed to keep the fuel in and the water out. The lock is there to ensure that your tank is free from contaminants. Aero caps are used on Adam, CAP, Cirrus, Diamond, Lancair Columbia, Lancair kits, Nemesis, Vans, Velocity and many more aircraft.

Cap assemblies come complete with cap, gasket, and flanges as ordered. Two keys come with the locking version. Fixing can be by rivet, bolt, weld or glass in as appropriate. These are flush caps of outstanding quality which are ideal for virtually any homebuilt aircraft.

Order the attach ring separately as needed, see accessories.

The 300 Series: 3-3/4" OD opening 1-3/4", 6 hole 3" pcd. A37 fits 2" and 2.25" Hoses.

The A512 & A508 Series: 3" entry / 5.5" OD. Feature special surface seal to avoid water/ice ingress. For Avtur Jet and diesel fuels.

Series	Description	Part No.	Price
A36	A36L Locking Cap Assy. 6-hole	05-28651	$169.50
A36	A36LFF Locking Cap Assy. Glass in	05-28652	$163.75
A36	A36S Non-Locking Assy. 6-hole	05-28656	$144.75
A36	A36SFF Non-Locking Flush Glass in	05-28658	$159.50
A37	A37L Locking Cap+ Hose Fitting 6 hole	05-28653	$218.95
A37	A37LFF Locking Cap Flush Glass in	05-28654	$175.75
A37	A37S Non-Locking+ Hose Fitting 6-hole	05-28659	$159.85
A37	A37SFF Non-Locking Flush Glass in + Hose Fitting	05-28657	$141.95
A512L	A512L 3" Cap, Locking - 12 hole	05-00045	$219.85
A512FF	A508L 3" Cap, Locking - 8 hole	05-04538	$223.95
A512FF	A512FF Locking (Glass-In) Cap	05-02650	$198.75

AERO FUEL CAP OVERHAUL KITS

Overhaul kits contain the required viton rubber seals, stiffnuts and clips.

Aero 300 Fuel Cap Overhaul Kit ..... P/N 05-02218 ..... $14.70
Aero 400 Fuel Cap Overhaul Kit ..... P/N 05-02613 ..... $16.75
Aero 500 Fuel Cap Overhaul Kit ..... P/N 05-02219 ..... $27.70

LIGHTWEIGHT DOOR LOCK SETS

Match above fuel cap locks.
P/N 05-28664 ..... $16.85 ea.

NEWTON FUEL CAP KEYS

602 Newton Fuel Cap Keys
P/N 05-03663 ..... $3.95

604 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 604 lock.
P/N 05-03437 ..... $19.75

605 -Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 605 lock
P/N 05-04540 ..... $19.75

606 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 606 lock.....
P/N 05-03388 ..... $15.95

607 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 607 lock.....
P/N 05-03389 ..... $17.90

608 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 608 lock.....
P/N 05-04541 ..... $15.65

609 Newton Fuel Cap Keys - Fits all Newton Fuel Caps with a 609 lock.....
P/N 05-04542 ..... $16.75

Caps for Fuselage and Wing Tanks

For separate fuselage and wing tanks we offer a screw in flange to fit a 2.25" threaded bushing that can be welded or glassed into a tank. This gives a flush fitting outside the skin, avoiding doors and internal spillage. Ideal for all wooden airplanes (e.g. Falco). Good for smoke oil tanks.

A30S-G/S Non-Locking, Threaded	05-28705	$165.95
A30L-G/S Locking,Threaded	05-28700	$164.75
Aluminum Tank Flange	05-01056	$12.75

BAYONET FUEL CAPS AND FILLER NECKS

Locking bayonet type cap with gasket, fastens to filler neck with safety chain. Externally threaded to mate with tank flange. 1.5" dia. filler hole, 2.25" diameter at threaded base, 1-3/8" neck length. Complete with aluminum tank flange designed for welding to aluminum tanks. Inner surface threaded to receive filler neck. Not compatible with auto gas.

Complete Set with Unvented Cap ..... P/N 05-17800 ..... $38.75
Complete Set with Vented Cap..... P/N 05-17900 ..... $39.90
Aluminum Tank Flange..... P/N 05-01056 ..... $12.75
Cap Only (unvented)..... P/N 05-01057 ..... $9.50
Cap Only (vented) ..... P/N 05-01058 ..... $11.75
Gasket for above Caps..... P/N 05-01059 ..... $1.95
Filler Neck..... P/N 05-01060 ..... $15.90

RETROFIT FUEL CAPS

Tired of hard to open gas caps and caps which leak? These retrofit gas caps offer easy fingertip action and secure sealing.

GLASAIR FLUSH FITTING CAP replaces the rubber seal Glasair cap (2.5-entry and 2" hole). Lockable. Epoxy/Flox in place. Based on aero 300 series. P/N 05-01004 ..... $185.75

VANS RETROFIT SPRL CAP is a screw action SPRL cap fits existing flange and leaves full aperture opening. Non-locking. The seal relies on existing flange being free of dents and dings.
P/N 05-01005 ..... $54.75

VANSRETROFITAERO20L CAP - Flush fitting key action cap assembly fits inside existing Vans flange. Easy action and secure seal. P/N 05-01006 ..... $104.95
Replacement O-Ring Kit..... P/N 05-07226 ..... $10.50

LIGHTWEIGHT SPRL FUEL CAPS

SPRL-S-GS

SPRL-S

This cap has secure sealing and easy finger tip operation. These caps are made from the highest quality modern engineering plastics with Viton 'o' ring seals (which can be easily replaced if you should ever need to do so.) The mounting ring is anodized aluminum with the flange recessed to give a perfect flush fit whether it is riveted under a metal skin, as in the RV series, or built into a composite structure. This cap is non vented and recommended to keep the fuel in, the water out and in the locking version, other unwanted items out of your tank. Size: 65 mm O.D.; Wt: 80 grams. SPRL caps are used on Europa, Compair, Glasair, lancair, Murphy, OMF, Rocket, velocity, Zenith and many more experimental aircraft.

Non-Locking cap W/ Flush Flange SPRL-S..... P/N 05-28662 ..... $56.75
Locking cap W/ Flush Flange SPRL-L..... P/N 05-28663 ..... $79.90
Cap with Threaded Flange SPRL-G/S..... P/N 05-28666 ..... $61.75
Locking cap with Threaded Flange ..... P/N 05-28667 ..... $89.75
Backnut to secure threaded flanges to skin (for 2.25" hose)
P/N 05-00042 ..... $10.85
Sprl Fuel Cap O-ring Kit..... P/N 05-02611 ..... $14.50

A-30 CIR THREADED FUEL CAP

A30-CIR is a screw threaded fuel cap the will fit almost flush to a skin, with the riveted flange on an adjacent tank or the back of a 'wet' skin. This was designed to be fitted after painting, reducing the likelyhood of dirt/dust in the cap and the cost of masking/finishing operations. It is available with a locking or non locking cap.

A30 L-CIR Locking..... P/N 05-06838 ..... $179.75
A30 S-CIR Non-Locking..... P/N 05-06837 ..... $155.75

SPRL rivet flange for threaded fuel caps
P/N 05-06491 ..... $33.50

ACS 10700 FLUSH FUEL CAP

The unvented flush fuel cap operates with a lift and turn lever. This cap has a 3" opening for easy refueling. Cap & adapter ring are anodized "clear" for corrosion resistance. Cap is fastened to adapter ring with safety chain. Made in the U.S.A.

10700 Flush Fuel Cap..... P/N 05-04702 ..... $349.50
Replacement O-Ring 10700 CAP..... P/N 05-04703 ..... $4.85

PRIST® HI-FLASH® HI-FLO™ ANTI-ICING FUEL ADDITIVE

Prist® Hi-Flash® Hi-Flo™ Anti-Icing Fuel Additive: The Original Just Got Better Prist® Hi-Flash® Hi-Flo™ aerosol cans are now available with a redesigned trigger dispensing system that makes them easier and safer to use. The safety trigger gives the user control of additive flow with instant on and off dispensing. Now the trigger dispensing system comes pre-mounted on the can which eliminates leaks at the valve connection. This means less waste, no drips and no spills.

Prist® anti-icing fuel additive comes in a wide range of packaging, making it easy to choose the amount of product and dispensing method for your application. The sizes include: 55-gallon drums, 5-gallon pails, 20-once and 8-ounce aerosol cans.

20 oz. can..... P/N 09-39555 .....$13.95
Case (24 Cans)..... P/N 09-39554 ..... $324.00

PRIST® HI-FLASH® LO-FLO™ ANTI-ICING FUEL ADDITIVE -

Hi-Flash Hi-Flo™ vs. Hi-Flash Lo-Flo™ What's the Difference?

The two products are identical in chemical formula. Hi-Flo additive simply means the can delivers the product at a rate compatible with a 40 to 55 gall per minute fuel nozzle rate. Lo-Flo additive can deliver the product at a rate which is typical of avgas, which is 15 to 20 gallons per minute. Lo-Flo is also used in helicopters, which typically have to be fueled slowly.

8 oz. can.....P/N 09-02048 ..... $7.50
Case (24 Cans).....P/N 09-02048-1 ..... $189.00

ALCOR TCP FUEL TREATMENT CONCENTRATE

ELIMINATE SPARK PLUG LEAD FOULING!

"Get the lead out" by using Alcor TCP Fuel Treatment, the only FAA-approved product of its kind for non-turbocharged engines. For use in low-compression piston aircraft engines, A simple treatment with every fill-up prevents that unwanted lead build-up, significantly reducing the fouling of your engine and the cost of flying. Only 1 ounce of TCP is required for every 10 gallons of fuel! The handy syringe dispenser allows precise measurement of the amount of TCP to put in your tank. Stop lead build-up before it starts with TCP! Sold in quarts. TCP Syringe sold separately Note: TCP is not to be carried aboard aircraft.

Quart Can.....P/N 05-21300 ..... $38.65
5-Gallon Can.....P/N 05-01429 ..... $339.95
55-Gallon Drum .....P/N 05-01430 .....$2,625.00

Accessories

Dispenser -(For use on the QT. and Gallon bottles)
P/N 05-21500.....$5.35

DECALIN RUNUP FUEL ADDITIVE

Decalin RunUp is approved for use with the new 100VLL (Very Low Lead) fuel announced by the FAA on Special Airworthiness Bulletin NE-11-55. Decalin RunUp contains two types of additive, one to reduce the negative effects of tetraethyl lead in aviation fuel and the other to improve the combustion efficiency, reduce combustion deposits and clean the fuel delivery system in aircraft. Decalin RunUp is not approved for use in the engines of certified aircraft.

16OZ.....P/N 05-01406 ..... $22.50
Decalin Runup Fuel Additive Quart.....P/N 05-03412 ..... $33.50

3M™ AC-251 B-2 3.5 OZ - CANOPY / WINDSHIELD SEALANT

A two-part, quick curing, polysulfide based canopy and windshield sealants. Formulated for sealing acrylic, glass, and polycarbonate aircraft canopies and windshields. Contain no solvent and do not craze. The sealants quickly cure and exhibit excellent adhesion and resistance to UV and weather exposure. 3.5oz Fill Premixed Syringe. A thixotropic, non-sag consistency.

. P/N 09-04008 ..... $54.85

3M™ AEROSPACE SEALANT AC-350 B-2 3.5 OZ

A fast cure, intermediate density polysulfide sealant suitable for fuel tank and fuselage applications. Maintain flexibility and bond strength on most metal substrates such as; aluminum, titanium, steel, stainless steel, glass, and many coatings under extremes of temperature, weathering and stress.

P/N 09-04009 ..... $34.50

FUEL FRESH

Aircraft sit - Fuel Fresh prevents gasoline from going stale. This process called Autoxidation occurs when oxygen reacts with fuel, thereby forming gum and varnish. Auto gas is particularly susceptible, losing octane performance and flammability, resulting in greater possibility for detonation. Add fuel Fresh and preserve fuel up to 24 months, maintain octane, prevent gum varnish, clean fuel system, and inhibit corrosion. Quick starts and clean burn are assured. Safe for 2 or 4 cycle engines. Handy measuring bottle. 32 fl.oz. Concentrate (Treats 96 Gal.)

P/N 09-38050 .....$9.95

HAMMONDS BIOBOR JF® FUEL BIOCIDE

For diesel and jet fuel. Recommended in many operating manuals as the preferred, industry standard fuel additive for eliminating Hydrocarbon Utilizing Micro-Organisms (HUM Bugs) in fuel tanks. US Coast Guard Certified and is the only diesel additive that has been given a military MIL Spec number.

4 oz.....P/N 05-06865 ..... $12.50
16 oz .....P/N 05-04963 ..... $21.50
1 qt. .....P/N 05-04962 ..... $38.85
1 gal .....P/N 05-04961 .....$108.95
5 gal .....P/N 05-04960 .....$480.00
55 Gallon.....P/N 05-06866 .....$3,398.00

HAMMONDS TURBOLINE FUEL STABILIZER

Turboline FS100 is a high-temperature fuel stabilizer and detergent additive designed to minimize carbon or coke deposits in turbine fuel combustion systems.

Turboline FS100 is readily soluble in jet fuel. Batch blending into the fuel is acceptable, but the best procedure is proportional injection. Turboline FS100 is completely compatible with other fuel system additives such as FSII and Biobor JF®. Turboline FS100 is fully approved for all operators using GE, Pratt & Whitney, Honeywell and all variants of the Turbomeca Arriel 1 & 2 engines. Operators with other Turbomeca engine models and Rolls-Royce can obtain approval on request. Please contact your local FAA authority, international authority, or OEM if you have specific questions concerning your equipment. Recommended Treatment Level for Turboline FS100 – The optimum treatment level in the fuel is 625 ppm (vol). This treatment level equates to about 80 oz. of product for every1,000 gallons of fuel. Gallons of Jet Fuel x .000625 = Gallons of Addtive Gallons of Additive x 128 = Ounces of Additive.

16 oz. .....P/N 05-06870 ..... $54.75
5 Gallon .....P/N 05-06871 .....$1,107.00
55 Gallon.....P/N 05-06872 .....$10,147.00

HAMMONDS LUBRIBOR® HIGH TECH LUBRICITY AGENT

Designed to improve fuel lubricity and reduce fuel system wear. Applications– LubriBor® is specially formulated for use in lowsulfur diesel fuel, now required for all over-the-road vehicles, and may be used in other applications such as boating, industrial and construction equipment, mining and farm equipment. 16 oz .....P/N 05-06867 ..... $24.70
5 Gallon.....P/N 05-06868 ..... $293.95
55 Gallon .....P/N 05-06869 .....$2,293.00

HAMMONDS BIOBOR HUM-BUG DETECTOR KIT

The Hum-Bug Detector® Kit is a low-cost, easy-to-use early warning system that will effectively identify hydrocarbon utilizing micro-organism contamination in all hydrocarbon fuels and oils. P/N 05-04964 ..... $24.75

PRO-SEAL TYPE TANK SEALANTS

Pro-Seal and similar products are two-part polysulfide integral fuel tank and fuselage sealants. We offer a Pro-Seal equivalent which is a B-2 type material and meets specification MIL-S-8802E, Type II, Class B-2. These kits are packaged in poly bags with nozzle, plunger and instructions.

2oz. sealant..... P/N 09-38500..... $17.90
3-1/2 oz. sealant..... P/N 09-38510..... $19.90

Accessories

Nozzle for Pro-Seal Kits ..... P/N 02-00099..... $1.15
Economy Sealant Mixer ..... P/N 12-01792..... $16.85

Discount Schedule: Less 10% on 12 kits, less 15% on 20 kits (may be assorted).

PRO-SEAL HAND-DISPENSING GUN

These hand-operated dispensing guns are ideal for applying Pro-Seal type sealants in small quantities normally used by the home builder Available in two sizes for the two sizes of Pro-Seal offered above.

2-1/2 oz. Dispensing Gun..... P/N 09-38520..... $115.85/ea.
6 oz. Dispensing Gun..... P/N 09-38530..... $127.75/ea.

PRO SEAL AIR POWERED TS950 2.5 OUNCE GUN KIT

The Pro Seal Air Powered Sealant kit includes: Techcon TS950 Sealant Gun with Pistol Grip Handle 2.5 oz. Versatile, pneumatic 2.5 ounce sealant applicator system with pistol grip handle. Techcon Extended Wiper Plunger (1 piece per kit) Techcon 2.5 Oz. Standard Density Disposable Cartridge (1 piece per kit) Opaque White

Air Powered 2.5 Ounce Gun Kit ..... P/N 09-38540 .....$597.00
Air Powered 2.5 Ounce Gun Only ..... P/N 09-38542 .....$597.00
Extended Wiper Plunger (Sold Each)..... P/N 09-00758 .....$0.75
2.5 oz. Std. Density Disposable Cartridge ..... P/N 09-00759 .....$0.65

AP

FUEL TANK SEALANTS

PRO SEAL AIR POWERED TS950-60-HA 6.0 OZ GUN KIT

This 6.0 oz Pro Seal Gun Kit includes: Techcon Gun Pistol Grip Assembly TS950-60-HA 6oz. Techcon Extended Wiper Plunger (1 piece) Techcon 6 Oz. Standard Density Disposable Cartridge. Techcon TS950 10ft. Hose Assembly.

Air Powered 6.0 Ounce Gun Kit ..... P/N 09-38550 ..... $709.00
Air Powered 6.0 Ounce Gun Only ..... P/N 09-38552 ..... $589.00
Extended Wiper Plunger (Sold Each) ..... P/N 09-00758 ..... $0.75
2.5 oz. Std. Density Disposable Cartridge ..... P/N 09-00759 ..... $0.65
Techcon TS950 10Ft. Hose Assembly ..... P/N 09-02416 ..... $119.95

PRO-SEAL FUEL TANK SEALANT

P/S 890 CLASS B - A filleting compound for sealing integral fuel tanks and pressurized cabins. It was especially developed for use over a temperature range of -65°F to +275°F and provides outstanding resistance to aircraft fuels (aviation gasoline or jet fuel) and petroleum base lubricating oils. Cures at room temperature and without shrinkage to form a resilient sealant possessing excellent adhesion to aluminum, magnesium, titanium, steel and numerous other materials.

Pint ..... P/N 09-38560 ..... $79.80
Quart ..... P/N 09-38565 ..... $173.85

PROSEAL PR-1776M CLASS B LOW WEIGHT FUEL TANK SEALANT

PR-1776M Class B is a low density, high temperature aircraft integral fuel tank sealant. Service temperature range from -65°F (-54°C) to 250°F (121°C), with very limited excursions up to 360°F (182°C). Designed for fillet sealing of fuel tanks and other aircraft fuselage sealing applications. Cured sealant maintains excellent elastomeric properties after prolonged exposure to aircraft fuels both jet fuel and aviation gas, and will resist limited contact to diphosphate ester based hydraulic fluids. Two-part, manganese dioxide cured Permapol® P-5 modified polysulfide. Suitable for application by extrusion gun or spatula. It cures at room temperature to form a resilient sealant. Shelf Life: 9 months ..... P/N 09-02003 ..... $316.00

PR-1005-L BUNA-N SLOSH COATING

A aircraft integral fuel tank slosh coating designed as a topcoat or barrier coating, cured to resist prolonged exposure to both jet fuel and aviation gas. It has a service temperature range from -100°F (-73°C) to 250°F (121°C), with intermittent excursions up to 275°F (135°C). PR-1005-L is a one part, synthetic rubber solution.Suitable for application by brush, fill-and-drain, dip, or spray. It cures at room temp. Test results are in accordance with MIL-S-4383 specification test methods. Color: Red; Dry time(77°F): 20 mins.; non-toxic.

Pint ..... P/N 09-00323 ..... $109.75
Quart ..... P/N 09-00324 ..... $199.75

3M™ AC-236 CLASS A INTEGRAL FUEL TANK AND FUSELAGE SEALANT

C-236 Class A is a brushable, two-component, liquid polysulfide polymer system providing excellent fuel tank and fuselage seals. It has outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. Maintains its flexibility and bond strength on most metal substrates like aluminum, stainless steel, steel, and many coatings under extremes of temperature, weathering and stress. Pourable liquid easily applied by brush. It has excellent tooling properties.

Class	Size	Part No.	Price
A-1/2	Pint	09-02614	$44.50
A-2	Pint	09-02618	$43.50
A-2	3.5 oz.	09-02619	$22.65

3M™ AC-236 CLASS B FUEL TANK AND FUSELAGE SEALANT

A two-component, manganese dioxide cured, liquid polysulfide polymer system providing excellent fuel tank and fuselage seals. It has outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. Maintains its flexibility and bond strength on most metal substrates like aluminum, stainless steel, steel, and many coatings under extremes of temperature, weathering and stress. A thixotropic paste easily applied by extrusion, injection gun or spatula. It has excellent tooling properties.

Class	Size	Part No.	Price
B-1/2	3.5 oz.	09-02623	$22.95
B-1/2	25 grams	09-02625	$22.70
B-2	Pint	09-02626	$43.50
B-2	3.5 oz.	09-02627	$22.95
B-4	Pint	09-02630	$44.50
B-4	3.5 oz.	09-02631	$25.85

3M™ AC-240 CLASS B FUEL TANK AND FUSELAGE SEALANT

A two-part, polysulfide based product for use as a quick cure sealant for integral fuel tanks and fuselages. A thixotropic non-sag consistency and can be readily applied with a spatula or extrusion gun or vertical surfaces. It will cure to a fuel-resistant rubber at temperature above 20 degrees F and exhibits excellent tooling properties with very low shrinkage.

Class	Size	Cure Time	Part No.	Price
B-1/2	Pint	1/2 Hour	09-02634	$49.85
B-1/2	3.5 oz.	1/2 Hour	09-02635	$26.50
B-2	3.5 oz.	2 Hour	09-02638	$25.70
B-2	Pint	2 Hour	09-02637	$49.85

JEFFCO FUEL TANK SEALER

A 100% solids epoxy system. It contains no solvents and no corrosive or carcinogenic substances to assure low toxicity and ease of application. Provides superior low temp. curing, impact and abrasion resistance, and cures in the presence of moisture or humidity. Brushes on easily. One 3 gallon kit can coat tanks of average size homebuilt. Note: Jeffco Fuel Sealer 9700 FCR(Part Number:09-42226) is made up of 2 parts. Part A and Part B. They both can be sold seperately. Part A is Part number:01-01062 and Part B is part number: 01-01063.3 Gal Kit ..... P/N 09-42226 ..... $544.00

AEROLIFE POLYPROTECH FUEL TANK SEALANT SINGLE COMPONENT

Fuel Tank Sealant "Single Phase" (one-part) A long lasting, permanently flexible "Single Phase" Polysulfide Sealant. Tack-free in 1 to 3 days, excellent resistance to oils, gasoline and diesel fuel Ideal for fuel tanks; cures to a firm flexible rubber seal with excellent adhesion qualities, can also be sanded and painted. ..... P/N 09-02544 ..... $8.95

AEROLIFE POLYPROTECH FUEL TANK SEALANT DUAL COMPONENT

A long lasting, permanently flexible "Dual Phase" Polysulfide Sealant. Fast curing two part system where time of completion is the criteria; cures to a firm flexible rubber seal with excellent adhesion qualities. Excellent resistance to oils, gasoline and diesel fuel; ideal for fuel tanks, cures to a firm flexible rubber seal, a product more for the professional than the home builder. Approximately 45 minute application time.

Sealant ..... P/N 09-02543 ..... $38.75

AEROLIFE LIFE SEAL SEALANT ALUMINUM - 5.2 OZ

Formulated especially for fiberglass and composite Aircraft. LifeSeal® offers a fast-curing, low odor, high adhesion, non-sagging, non-corrosive, non-yellowing formula. Permanent watertight seal for joints subject to structural movement. Will adhere to metal, glass, wood, Lexan®, ABS and certain other products. Can be removed without damaging the aircraft finish is mildew resistant and "Acid Free". LifeSeal® packaged in half cartridges for convenience of working.

Aluminum ..... P/N 09-02540 ..... $8.35
Black ..... P/N 09-02542 ..... $8.95

ALCOHOL RESISTANT GAS TANK SEALER

This is impervious to all fuel types. Over 2,000,000 sold to date. It is the best way to repair and restore your fuel tank. Simple application, includes extensive application information and product information sheet. Will seal pinhole leaks and prevent rusting. 1 Pint will seal a 10-12 gallon tank. Good for all fuel types. Works well with all metal and fiberglass tanks. Note: For Experimental Aircraft Only!

Quart ..... P/N 09-03477 ..... $29.50
Gallon ..... P/N 09-02566 ..... $88.75

TRIGGER TYPE SEALANT GUNS

This air-powered, trigger controlled sealant gun will spread sealant smoothly, uniformly, and exactly where you want it. Includes body, 10 ft. hose, and 2 1/2 oz. zinc plated corrosion resistant retainer to prevent cartridge split. Hose has Hanson-style air fitting.

Gun with 2.5 oz. Retainer ..... P/N 12-02923 ..... $112.85
Gun with 6 oz. Retainer ..... P/N 12-02922 ..... $112.85

PISTOL GRIP SEALANT GUNS

Use this pneumatic pistol grip sealant gun to apply smooth, uniform material exactly where you want it. Comes with body, 10 ft. hose, and 2 1/2 oz. zinc-plated corrosion resistant retainer. Hanson-style air fitting on hose.

Gun with 2.5 oz. Retainer ..... P/N 12-02921 ..... $136.80
Gun with 6 oz. Retainer ..... P/N 12-02920 ..... $136.80

The application life of each sealant is specified by the dash number in the part number.
Examples: AC-236 B-2 6oz. is 2 hour life. AC-250 B-1/6 2oz. is 1/6 hour life.

ACF-50 ANTI-CORROSION COMPOUND

ACF-50 is a state-of-the-art compound for controlling corrosion on aircraft electrical and avionics systems and airframes. ACF-50 is designed for owners of strut equipped Piper aircraft to comply with new Piper bulletin 5280C requiring lift strut inspection. ACF-50 kills the corrosion process with just one application and will last for 24 months. Microswitches, cannon plugs, and relays will remain corrosion free. Plus, ACF-50 will easily free seized nuts, screws and bolts. ACF-50 is qualified under Mil-C-81309E, and manufactured under ISO 9000 Certified Processes. Try ACF-50, you will be truly amazed at the results.

13 oz. Spray Can(HAZMAT) ..... P/N 09-44350 ..... $12.50
32 oz. Bottle ..... P/N 09-00364 ..... $28.75
4 Liter can ..... P/N 09-44345 ..... $91.75
20 Liter Pail ..... P/N 09-00437 ..... $389.00

CORROSION BLOCK

Corrosion Block is a clean fluid that actively protects metal using advanced polar bonding chemistry. Synthetic additives in Corrosion Block completely penetrate corrosion cells…replacing the salt water which is then allowed to evaporate. Corrosion Block's hydrophobic film remains to further protect the metal acting like an off-switch for corrosion.

4 oz. Pump ..... P/N 09-02991 ..... $7.85
12 oz. Aerosol ..... P/N 09-02992 ..... $23.85
20 Liter ..... P/N 09-02993 ..... $379.00
32 oz. with spray ..... P/N 09-02994 ..... $27.50
205 Liter ..... P/N 09-02995 ..... $2,758.00

CORROSION BLOCK GREASE

Multi Purpose High Performance Grease, Won't Soften, Breakdown or Wash Out. Formulation provides both high and low temperature performance. Strongly resists water wash out and provides superior protection against rust and corrosion. Corrosion Block Grease out performs lithium and most synthetic greases and meets or exceeds requirements for NLGI Service Classification GC-LB (automotive wheel bearing and chassis lubricants), which is based on ASTM D4950 performance requirements.

2 oz. Tube ..... P/N 09-02987 ..... $3.35
14 oz. Tube ..... P/N 09-02989 ..... $7.95
16 oz. Tub ..... P/N 09-02990 ..... $9.50

CORROSION X AVIATION

Corrosion X is an excellent penetrant, lubricant, and corrosion filter which confirms to Mil-C-81309E and is perfect for extended corrosion protection of airframes. It is also highly effective in protection of all components in the electrical / avionics systems. On existing corrosion, it penetrates oxidation, displaces lectrolyte and stops electrolysis. On corrosion free surfaces provides an ultra-thin barrier to guard against moisture intrusion and corrosion attack. Treatment lasts 2 years or more, and Corrosion X is non-toxic. Corrosion X is a highly recommend treatment for extending the life of airframes.

Aviation Formula			Original Formula		
Size	Part No.	Price	Size	Part No.	Price
16 oz. Spray	09-00296	$15.25	16 oz. Spray	09-00926	$9.85
16 oz. Aerosol	09-42220	$17.85	16 oz. Aerosol	09-00925	$16.07
1 Gallon	09-44225	$84.15	1 Gallon	09-04084	$88.75
5 Gallon	14-00672	$379.00	5 Gallon	09-04269	$336.00
30 Gallon	09-04086	$1,727.00	30 Gallon	09-04268	$1,439.00
55 Gallon	09-04085	$2,766.00	55 Gallon	09-04270	$2,458.00

CORROSION X PRESSURE SPRAYERS

Excellent for applying Corrosion X and require no special training to operate. Compact, convenient and easy to use, these sprayers have no moving parts and operates at 80 PSI shop air. Furnished with instructional video. Available in 3 sizes.

2.5 GALLON TOTE - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 2.5 gallons Weight: 22lbs Hose: 10' Color: Blue
Basic Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand ..... P/N 09-00373 ..... $743.00
Complete Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand ..... P/N 09-00374 ..... $918.00

5 GALLON HANDI-SPRAY™ - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 5 gallons Weight: 28lbs Hose: 25' Color: Blue
Basic Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand ..... P/N 09-00371 ..... $849.00
Complete Unit Includes: 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand ..... P/N 09-00372 ..... $950.00

BELT PACK - Required Air Pressure: 80 PSI @ 5 - 6 CFM Capacity: 1 quart Weight: 7lbs Hose: 3'
Basic Unit Includes: Pistol belt and holster, 1" cricket, 5" x 1/8" hook wand, 3' superflex ..... P/N 09-00375 ..... $498.00
Complete Unit Includes:Pistol belt and holster, 1" cricket wand, 3' x 1/4" 360° wand, 3' superflex wand, 8' x 1/4" 360° wand, 6' x 3/16" 45° fan wand, 5" x 1/8" hook wand ..... P/N 09-00376 ..... $597.00

CORROSION X HEAVY DUTY

CorrosionX Heavy Duty is for super long-term protection against serious rust and corrosion assault. For those really tough jobs where you need the ultimate protection against moisture, the answer is new CorrosionX Heavy Duty. There is no other product like it on the market today. It is a high performance, thick-film version of CorrosionX. It was developed specifically to provide maximum protection against moisture intrusion and resulting rust and corrosion. Recommended for use on boat trailers by Field and Stream.

12 oz. Aerosol ..... P/N 09-00927 ..... $16.50
1 Gallon ..... P/N 09-04117 ..... $84.95
5 Gallon ..... P/N 09-04265 ..... $353.00
30 Gallon ..... P/N 09-04266 ..... $1,594.00
55 Gallon ..... P/N 09-04267 ..... $2,724.00

CORROSION X RUST REMOVER - 16 OZ

CorrosionX Rust Remover is a breakthrough in the nonhazardous removal of unwanted rust. Rust Remover eliminates surface rust from iron and steel without harmful fumes. It will not harm copper, brass, plastic, rubber or vinyl. It is also safe to use on painted surfaces for removal of 'bleeding' rust. Not for use on nonferrous metals. Once rust has been removed, it is important to treat metal with some kind of protective coating so that the clean metal surface does not re-rust. For this purpose we recommend neutralizing / rinsing the cleaned metal surface. P/N 09-04273 ..... $12.95

PAR-AL-KETONE

Black Bear Par-Al-Ketone is best known as one of the most rugged corrosion preventives available, performing successfully for over 40 years protecting aircraft components and machine parts in outdoor storage and for export. Qt. ..... P/N 09-26800 ..... $18.85
Gal. ..... P/N 09-26900 ..... $62.75

BOESHIELD™ T-9 CORROSION PROTECTANT

Developed this formula for long term protection of aircraft components. Penetrates to fasteners and fixtures, where it displaces moisture, and will even loosen rusted parts. Boeing recommends it for fuselage, wing, and tail structures, engines and cowlings, landing gear and gear wells, control linkages, and avionics. Dries to a clean waxy film. Lubricates and protects all metals for months. Safe on most paints, plastics & vinyls.

12 oz. Aerosol can ..... P/N 09-01623 ..... $15.75
4 oz Drip Can ..... P/N 09-00378 ..... $7.85
4 oz Spray Can ..... P/N 09-00379 ..... $7.45
Gallon Can ..... P/N 09-01622 ..... $99.00

TUBE SEAL (LINE OIL)

Prevents rust and corrosion inside aircraft tubing structures. Tubeseal is a blend containing a very fine preservative oil (MIL-L-21260) which has a characteristic of climbing the tube wall and spreading over the entire surface to provide lasting protection. Penetrates and reveals very small pin holes in a weld and in time, due to exposure, congeal and seal the hole. 1 quart will treat 2 light aircraft fuselages. Complete instructions on label.

Qt. ..... P/N 03-14000 ..... $26.00
Pt. ..... P/N 03-14005 ..... $14.00

DOW CORNING DC-4 COMPOUND

A grease-like silicone material which provides a moisture proof seal for ignition and electrical systems. More water repellent than waxes. Effective from -70° to 400° F. A low-loss dielectric. Meets spec. MIL-I-8860.

5.3 Oz. Tube ..... P/N 09-27700 ..... $14.85

ECK CORROSION COATING

Eck®-T, convenient liquid paste squeeze tube, ideal for small applications such as holes and on hardware. Comes with a screw-on nozzle attachment. ProhibitS dissimilar metals from Electrolysis and Galvanic corrosion. Protects aluminum and stainless steel against electrolytic reaction, isolates dissimilar metals and gives bedding protection for hardware and fasteners. Eck® contains anti-seizing lubricant for threads. Eck® is dielectric and perfect for use with electrical connectors.

P/N 09-02138 ..... $8.95

CORROSION X HAND HELD SPRAY SYSTEM

The HAND HELD SPRAY SYSTEM is designed to turn ACF-50 into a dense fog. The equipment has been preset and factory tested to achieve this goal. The equipment is rugged and will provide years of service, with virtually no maintenance, provided reasonable care is taken with its use.

P/N 09-04053 ..... $734.00

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SENSENICH COMPOSITE PROPELLERS

TRACTOR PROPELLERS

Engine	Speed	Model	Prop. Dia.	Spinner Dia.	Part No.	Price
Rotax 912/912S/914	Up to 150	2A0R5R70EN	70"-66"	8"-11.5"	05-10603	$1,675.00
Rotax 912/912S/914		2A1R5R70DN	70"-66"	12"	05-10604	$1,675.00
Rotax 912/912S/914		2A1R5R75DN	75"-71"	12"	05-10605	$1,675.00
Rotax 912/912S/914		3B0R5R68CN	68"-62"	9.5"	05-10606	$2,225.00
Rotax 912/912S/914	Over 150	2A0R5R64EN	64"-60"	8"-11.5"	05-10607	$1,675.00
Jabiru 2200	---	2A0J5R62HN	62"-58"	8"-11.5"	05-10608	$1,675.00
Jabiru 3300		2A0J5R64ZN	64"-60"	8"-11.5"	05-10609	$1,675.00
Continental O-200, Lycoming O-235		2EKC72AE (Cont.)	72"-69"	9.5"	05-10610	$2,980.00
Continental O-200, Lycoming O-235		2EM6C72AE (Lyc.)	72"-69"	9.5"	05-10611	$2,980.00
Lycoming O-320, O-360		2G0M7 2-Blade	72"-68"	13"	05-10612	$3,500.00
Lycoming O-320, O-360		3G0M7 3-Blade	72"-68"	13"	05-10613	$4,250.00
Lycoming O-360	---	2G0M8C72RG	72"-68"	13"	05-11909	$3,500.00
Lycoming O-360		3G0M8C72PG	72"-68"	13"	05-11910	$4,250.00

PUSHER PROPELLERS

Engine	Speed	Model	Prop. Dia.	Spinner Dia.	Part No.	Price
Rotax 912/912S/914	---	2A0R5L69EN	68"-64"	8"-11.5"	05-10614	$1,675.00
Rotax 912/912S/914		3B0R5L68CN	68"-62"	9.5"	05-10615	$2,225.00

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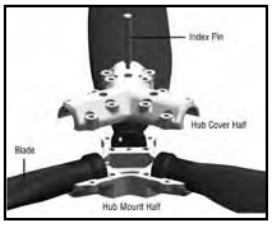
BLADES

(Must Specify Cutdown and Balance Weight)

Model	Description	Part No.	Price
R70DN-(), R75DN-()	2 Blade Rotax Tractor, Long Hub	05-10617	$580.00
R64EN-(), R70EN-()	2 Blade Rotax Tractor, Short Hub	05-10618	$580.00
L68CN-(), R68CN-()	3 Blade Rotax Pusher, Tractor	05-10619	$505.00
R62HN-()	Jabiru 2200 Tractor	05-10620	$580.00
L62PN-(), R64ZN-()	Jabiru 3300 Pusher, Tractor	05-10621	$580.00
L69EN-()	2 Blade Rotax Pusher, Short Hub	05-10622	$580.00
C72AE-()	2 Blade Continental O-200, Lycoming O-235	05-10623	$1,045.00
C72RG-()	2 Blade Lycoming O-320, O-360	05-10624	$1,260.00
C72PG-()	3 Blade Lycoming O-320, O-360	05-10625	$1,170.00

HUBS



Includes bolts and pitch change system

Model	Part No.	Price
Rotax, Jabiru	05-11028	$865.00
Rotax 3 Blade	05-11029	$945.00
2EK, 2EM6	05-11030	$1,020.00
2G0M7, 2G0M8	05-11031	$1,315.00
3G0M7, 3G0M8	05-11032	$1,385.00

BOLT KITS

Model	Part No.	Price
Rotax, Jabiru Clamp	05-11033	$35.00
Rotax, Jabiru Mount	05-11034	$35.00
Rotax Extension Mount (Specify extension length)	05-11035	$55.00
2EK, 2EM6	05-11036	$50.00
2G0M7, 2G0M8	05-11037	$75.00
3G0M7, 3G0M8	05-11038	$55.00

PROP EXTENSIONS

Includes spacer lugs. Extensions can be stacked for custom lengths.

Model	Part No.	Price
Rotax & Jabiru 1/2"	05-11039	$75.00
Rotax 1"	05-11040	$95.00
Rotax & Jabiru 1 3/8"	05-11041	$125.00
Rotax 1-1/2"	05-11042	$135.00
Rotax 1-3/4"	05-11043	$145.00
Rotax 2-1/4"	05-11044	$165.00
Rotax 3-3/16"	05-11045	$205.00

ECONOMY SPINNERS

Specify Engine

Diameter	Part No.	Price
8"	05-10626	$190.00
9"	05-10627	$190.00
10"	05-10628	$200.00
11-1/2"	05-10629	$215.00
12"	05-10630	$225.00

PREMIUM SPINNERS

Specify Engine

Diameter	Part No.	Price
9.5"	05-10631	$369.00
13" (RV)	05-10632	$625.00

HUB PARTS

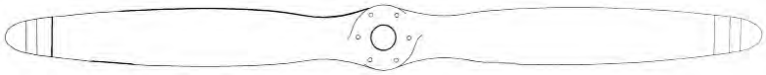
Model	Part No.	Price
Pitch Cylinder	05-11046	$85.00
Pitch Stop	05-11047	$15.00
Extension Lugs (6)	05-11048	$30.00
Mount Lugs (6)	05-11049	$40.00
Hub Lugs (6)	05-11050	$50.00
Pitch Pin	05-11051	$30.00

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SENSENICH METAL PROPELLERS



Most popular models of Sensenich metal propellers are available in local stock for immediate shipment. Installation bolt kit is furnished with each propeller. Attaching kit for flange shaft will be packed for all Continental installations unless taper shaft installation is specified. Propellers may be shipped via UPS. Partial List - Request Prices on Unlisted Models. Approximate Shipping Weight 40 Lbs.

Aircraft Model*	Engine	Standard Prop	Climb Prop	Cruise Prop	Our Price
Aeronca 11AC	Cont. A-65	74CK-0-46			Please see our website or call for quote.
Beech Model 23	Lyc. O-320 (160 hp)	74DM6-0-60	74DM6-0-56		
Bellanca 7EC, 7FC, 7JC	Cont. C-90	76AK-2-46	76AK-2-44	76AK-2-48	
Cessna 120, 140	Cont. C-85	76AK-2-44	76AK-2-42		
Cessna 150 thru 150K	Cont. O-200	69CK-0-52			
Cessna 152	Lyc. O-235 (110 hp)	72CKS6-0-56	72CKS6-0-54		
Cessna 172 thru 172C	Cont. O-300C, D	74DC-0-56			
Cessna 170	Lyc. O-360 (180hp)	76EM8S5-0-56	76EM8S5-0-54	76EM8S5-0-60	
Cessna 172 Avcon Conv.	Lyc. O-360 (180hp)	76EM8S5-0-56			
Cessna 172, 172A	Lyc. O-360 (180hp)	76EM8 series			
Cessna 177	Lyc. O-360 (180hp)	76EM8 series			
Piper J3C65, L4, Cub	Cont. A-65	74CK-0-46	74CK-0-44		
Piper PA-11, Cub, J4A	Cont. A-65	74CK-0-46	74CK-0-44		
Piper PA-11, PA-18, Cub	Cont. C-90	76AK-2-42		76AK-2-46	
Piper PA-18 Super Cub	Lyc. O-235-C1	76AM6-2-44			
Piper PA-18 Super Cub	Lyc. O-320 (150 hp)	74DM6-0-56	74DM6-0-54	74DM6-0-58	
Piper PA-20 Pacer	Lyc. O-235-C1	76AM6-2-50	76AM6-2-48	76AM6-2-52	
Piper PA-22-108 Colt	Lyc. O-235-C1B	76AM6-2-48		76AM6-2-50	
Piper PA-20, PA-22	Lyc. O-290-D (125 hp)	74DM6-0-56	74DM6-0-54		
Piper PA-22	Lyc. O-320 (150 hp)	74DM6-0-60	74DM6-0-58		
Piper PA-28-140 Cherokee	Lyc. O-320 (150 hp)	74DM6-0-60	74DM6-0-58		
Piper PA-38 Tomahawk	Lyc. O-235 (112 hp)	72CK-0-56			
Piper PA-28 140, 4 Cherokee	Lyc. O-320 (150hp)	74DM6-0-58	74DM6-0-56		
Piper PA-28 150 Cherokee B	Lyc. O-320 (150hp)	74DM6-0-58	74DM6-0-56		
Piper PA-28 151 Warrior	Lyc. O-320 (150hp)	74DM6-0-58			
Piper PA-28 151 Warrior/160	Lyc. O-320 (160hp)	74DM6-0-60			
Piper PA-28 160 Cherokee B	Lyc. O-320 (160hp)	74DM6-0-60			
Piper PA-28 180 Archer	Lyc. O-320 (180hp)	76EM8S5-0-60			
Piper PA-28 180 Cherokee C	Lyc. O-320 (180hp)	76EM8S5-0-60			
Piper 181 Archer II ('78)	Lyc. O-320 (180hp)	76EM8S5-0-62			
Pitts Special S1S and S2	Lyc. I0-360	76EM8-0-56 to -61			
Taylorcraft BC65, BCD12D	Cont. A-65	74CK-0-48	74CK-0-46		
Taylorcraft BC12D85, 485, 19	Cont. C-85	74CK-2-46	74CK-2-44		
Stoddard Hamilton Glasair ITD, FT,RG	Lyc 0-320/160hp				
Stoddard Hamilton Glasair IITD, FT,RG	Lyc 0-320/160hp				
Stoddard Hamilton Glasair IIITD, FT,RG	Lyc 0-320/160hp				
Tri-R (KIS)/116	Lyc 0-235-L2C				
Van's RV-3/150, RV-4/150	Lyc 0-320/150hp				
Van's RV-3/160, RV-4/160	Lyc 0-320/160hp				
Van's RV-6/RV-6A150	Lyc 0-320/150hp				
Van's RV-6/RV-6A160	Lyc 0-320/160hp				
Zenith CH-2000/116	Lyc 0-235 (116hp)	72CK-0-46		72CK-0-48	
Zenith CH-2000A/150	Lyc. 0-320 (150hp)	74DM6S5-0-58			

*All models listed are land planes.

SENSENICH FLIGHT PERFORMANCE ALUMINUM PROPS FOR VANS AIRCRAFT

For the Lycoming 0-235 (125 HP): 72 CK Series Propeller ..... 72 CK Series Propeller ..... P/N 05-01468 ..... $3,496.00
For the Lycoming 0-320 (150 or 160 HP): 70 CM Series Propeller ..... 70 CM Series Propeller ..... P/N 05-01469 ..... $3,794.00
For the Lycoming 0-360 (180 HP): 72 FM Series Propeller ..... 72 FM Series Propeller ..... P/N 05-01470 ..... $3,889.00

Both Systems Include:
- High Performance Fixed-Pitch Aluminum Propeller
- Aluminum Propeller Extension Included
- 2 yr or 200hr warranty (whichever comes first)
- Personalized service
- Attaching Hardware Included
- A full 2" dia. reduction allowed for repairs
- Propeller system that can be serviced anywhere.

Specify aircraft model, engine, & pitch (standard, climb, or cruise) when ordering. Also available for Murphy Rebel, Elite, Glasair, Thorp T-18, Tri-R, Midget Mustang, & many other homebuilts.

SENSENICH COMPOSITE AIRCRAFT PROPELLERS

Sensenich composite propellers are available for a wide range of experimental aircraft engines such as the Rotax 912, 912S, 914, Jabiru 2200 and 3300, Continental 0-200, and Lycoming 0-235, 0-320, and 0-360. Replacement blades, hubs, bolt kits, extensions, and spinners are also available,
See www.aircraftspruce.com for complete list of Sensenich products, part numbers and prices.

SENSENICH ALUMINUM PROP BOLT KITS

These propeller bolt kits for Sensenich aluminum propellers include the bolts and washers for propeller attachment.

Propeller Application	Bolt Kit Part No.	Price	Propeller Application	Bolt Kit Part No.	Price
69CK	AN6H-37AS	$239.95	76AK	AN6H-32AS	$286.95
72CK	AN6H-37AS	$239.95	76AM6	AN6H-33AS	$305.00
74CK	AN6H-32AS	$286.95	76EM8	AN8H-46AS	$343.00

PROPELLER BUSHINGS

SENSENICH A-437 For installations with Continental taper shaft. 5/8" O.D. x 3/8" I.D. x 1/2" Long.
Set of 6 ..... P/N 05-01127 ..... $33.50

MCCAULEY A-1170 5/8" O.D. x 3/8" I.D. x 11/16" Long.
Set of 6 ..... P/N 05-01128 ..... $128.50

SENSENICH PROPELLER FOR CESSNA 172'S

This propeller is STC's for Cessna 172's I thru P using Lycoming 0-320 series engines. It is available in pitches of 56 to 60 and no spinner change is required. Features a full 2 inch diameter reduction. Model 74DM7S14-0-56-60 (Specify pitch) $2,562.95

SENSENICH WOOD PROPELLERS

Original equipment on Piper, Aeronca, Taylorcraft, Cessna, Ercoupe, Fairchild, and others. Metal tipping and high lacquer finish. Bolts and mounting plates not included. 18 lbs. each. FAA approved for certificated aircraft. Also excellent for experimental aircraft. Aircraft Spruce is an authorized Sensenich factory distributor. *Props w/asterisk are most commonly used props & are normally in stock for immediate shipment.

STANDARD PROP

Aircraft Models	Engine	Stnd. Prop	Part No.	Price	Climb Prop	Part No.	Price
Aeronca 7AC, 11AC, 11ACS	Cont. A65	W72CK-42	05-W72CK-42	$1,647.00	W72CK-40	05-00583	$1,598.00
		W72CK-44	05-W72CK-44	$1,598.00			
Cessna 120, 140	Cont. C85	W74FK-45	05-01808	$2,403.00	W74FK-44	05-01809	$2,377.00
Commonwealth 185	Cont. C85	W74FK-44	05-01809	$2,377.00			
Luscombe 8A	Cont. A65/C65	W76CK-42	05-01810	$2,118.00	W76CK-40	05-01821	$2,117.00
Piper J-3, J-4A, PA-11, A-17	Cont. A65/C65	W72CK-42	05-W72CK-42	$1,647.00	W72CK-40	05-00583	$1,598.00
Piper J-3 (Duster)	Cont. A75	W70DK-40	05-01811	$1,912.00			
Piper J-4E	Cont. A75	W70DK-42	05-01812	$1,912.00			
Piper J-4F, PA-15	Lyc. O-145B	W70LY-36	05-01813	$1,988.00			
PA-14, PA16, PA-18, PA-20	Lyc. O-235C1	W74FM-49	05-01814	$2,378.00	W74FM-47	05-01819	$2,377.00
PA-20, PA-22 125,135	Lyc. O-290D/D2	W74FM-54	05-01815	$2,247.00			
PA-18, PA18A	Lyc. O-290D/D2	W74FM-49	05-01814	$2,378.00	W74FM-47	05-01819	$2,377.00
T-Craft BC65, BC1265	Cont. A65	W72CK-42*	05-W72CK-42	$1,647.00			
L2, D65, DC065							
T-craft BC12D	Cont. A65	W72CK-42	05-W72CK-42	$1,647.00	W72CK-40	05-00583	$1,598.00
BC12D1							
Stinson 10, HW75	Cont. A70	W70Dk-40	05-01811	$1,912.00			

AIRBOAT AND LOW HORSEPOWER PROPELLERS

We carry the complete Arrowprop Propeller Co. line of props used on airboats, ice sleds, hovercraft, bowfishing, air drives, and wind machines. These props are for use with engines such as Briggs & Stratton, Rotax, Cuyuna, Tecumseh, Hirth, Yamaha, Kawasaki, Onan, wisconsin, Kohler, Honda, and others. The props are available in diameters from 26" to 48" and with 2, 3, 4, 5, 6, or 8 blades. All propellers have a 1-3/4" prop hub except for 48" prop which have 2" hubs.

CALL WITH YOUR REQUIREMENTS AND REQUEST QUOTATION.

TENNESSEE PROPELLERS

Each Tennessee propeller is solidly built by skilled craftsmen from the finest selection of hardwoods. The laminated propeller is carefully assembled, carved, balanced and finished. Standard Rotax hub bolt pattern (others available on request). When ordering, please tell us: 1. Engine type and displacement 2. Left hand or right hand drive 3. Pusher or tractor configuration 4. Gear or belt drive, and reduction ratio 5. Prop diameter and pitch Direction of prop rotation is determined by viewing rotation of prop from behind the aircraft. Left hand rotation is counter-clockwise, right hand rotation is clockwise. If you're not sure about prop size, give us a call.

Description	Part No.	Price	Description	Part No.	Price
36" Prop 1.5" Hub	TP36	$254.95	36" Prop 2" Hub	TP362	$345.95
42" Prop 1.5" Hub	TP42	$309.95	42" Prop 1.5" Hub	TP42	$309.95
44" Prop 1.5" Hub	TP44	$296.00	44" Prop 2" Hub	TP442	$371.95
48" Prop 1.5" Hub	TP48	$340.95	48" Prop 2" Hub	TP482	$371.95
50" Prop 1.5" Hub	TP50	$357.95	50" Prop 2" Hub	TP502	$389.95
52" Prop 1.5" Hub	TP52	$357.95	52" Prop 2" Hub	TP522	$389.95
54" Prop 1.5" Hub	TP54	$357.95	54" Prop 2" Hub	TP542	$308.95
58" Prop 1.5" Hub	TP58	$296.00	60" Prop 1.5" Hub	TP60	$362.95
60" Prop 2" Hub	TP602	$369.00	64" Prop 2" Hub	TP642	$401.95
66" Prop 2" Hub	TP662	$342.95	68" Prop 2" Hub	TP682	$401.95
70" Prop 2" Hub	TP702	$449.95	74" Prop 2" Hub	TP742	$449.95

ARROWPROP ULTRALIGHT PROPELLERS

Propeller	Hub Thickness		
Diameter	1-3/4"	2"	2-1/4"
Stock No.	05-314--	05-315--	05-316- -
30"	---	---	---
36"	---	---	---
38"	---	---	---
40"	---	---	---
44"	---	$229.95	---
46"	---	$243.95	---
48"	---	$243.95	---
50"	---	$257.95	$267.95
52"	---	$262.95	$257.95
54"	---	$267.95	$276.95
56"	---	$271.95	$248.95
58"	$267.95	$276.95	$285.95
60"	$271.95	$281.95	$290.95
62"	$300.95	$290.95	$300.95
64"	$290.95	$305.00	$329.00

Order by P/N. Use basic P/N at top of column, and complete P/N with prop diameter. Leading edge is an additional charge. Quote at time of order.When ordering please give the following:

1. Specify clockwise or counter-clockwise rotation
2. Specify pusher or tractor type.
3. Give center hole size.
4. Give bolt circle diameter
5. Give number of bolt holes and sizes.
6. Specify Aircraft model or prop pitch.

PRINCE AIRCRAFT COMPANY P-TIP PROPS

WOOD P-TIP PROPELLER - Before the "Carbon Fiber P-TIP Propeller", this had been considered one of the most efficient and lowest noise propellers available; the only wood/carbon fiber anti-vortex droop tipped propeller in the world. This propeller is a wood, fixed pitch propeller that relies on the forward pull of the propeller to automatically provide pitch change proportional to the amount of force being applied to the propeller disk. When a propeller operates at a slower airspeed than its maximum capabilities, it has a proportional pull in relation to the velocity of forward motion, so at takeoff and climbing condition the propeller will have its largest forward pull. Due to the scimitar shape, the tip of the propeller cones forward, as the coning angle changes the propeller will lessen pitch that provides shorter takeoffs and higher rates of climb. As the propeller increases in forward speed the disk pressure is reduced, this forces the propeller to increase pitch and top speed. This change in pitch is approximately four inches from takeoff to cruise. The droop P-TIP is to control the air spillage over the propeller tip that delays the tip vorticies which cause drag and turbulence within the propeller arc. A propeller, like a wing, works best when it has unturbulated air over the airfoil sections. The P-TIP delays the vorticies, the propeller then has smooth air to provide best thrust and a pronounced reduction in propeller noise.

Additional benefit of the P-TIP design is the volume of air the propeller produces. When air flows through a standard tip propeller design, the airflow at the tip will flow over the propeller tip. As soon as it passes the tip it will tuck down behind the propeller blade giving a cone of air from the propeller smaller than the propeller diameter. For example, a 72" diameter propeller without a P-TIP will give a volume of air from the propeller of approximately 68" of diameter; a P-TIP propeller will provide 72" of air volume. This means that a 68" P-TIP will give the same volume of air as a standard tip 72" propeller. By reducing propeller diameter there is less frontal area or flat plate drag of the aircraft. Higher top speeds are the result without sacrificing takeoff or climb.

Your benefit is a lightweight, pitch changing propeller that will give you the best of short takeoff, maximum cruise, and more flying enjoyment in a quieter cockpit.

COMPOSITE P-TIP PROPELLER - Composite P-Tip Props retain the same qualities of the wood P-TIP but are more efficient and durable. Prince uses the reliable time proven wood core of hard maple, then completely encloses the blades in multiple layers of high tensile strength composites. The hardwood core absorbs the dangerous harmonic vibrations and benefits your airframe by smoothing the engine power pulses, and the composite wrapping allows the airfoils sections to be thinner, reducing drag while increasing durability and locks each blade into operating at precise angles. The best working propeller is one that is rigid enough to allow all blades to move alike, thin at the cord section to eliminate as much drag as possible, and strong enough to satisfy the large amounts of stress required during flight. Urea Formaldehyde adhesive meets Military Specifications to insure reliable operation and trouble free flying for the life of the propeller. Propellers are finished in a metal prop gray color, this shade will match nearly every paint scheme, the Durability and Ultrahigh Gloss finish is a two-part Urethane, machine buffed to achieve a propeller that reflects the quality of manufacturing like no other propeller available.

Note:Request Prince Propeller order form at time of order we will fax or mail form to you to complete to insure correct propeller is furnished for you application.

APPLICATION CHART

Aircraft	Engine	HP	Dia./Pitch	Hub Thickness	Price Schedule
Acro Sport	0-320	150	71/48	3.7	F
Avid Flyer	Rotax 503	52	68/34	2.1	B
	Rotax 532	64	71/35	2.1	B
Baby Great Lakes	C-80A	80	66/48	3.25	F
Cozy	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
Dragonfly	1834VW	60	52/45	2.75	D
	2100VW	82	52/48	2.75	D
Glasair	0-320	150	68/72	3.7	F
	0-320	160	68/74	3.7	F
	0-360	180	68/76	3.7	F
	0-540	270	69/113	3.7	F
Glass Goose	0-320	150	64/62	3.7	E
	0-320	160	64/64	3.7	E
Kitfox	Rotax 503	46	68/30	2.1	B
	Rotax 912	80	68/47	2.25	B
KR-2	1835 VW	55	52/48	2.75	D
	2100 VW	80	52/50	2.75	D
	Subaru	75	53/68	3.7	D
Lancair	0-200	100	58/68	3.7	E
	0-235	118	58/68	3.7	E
	0-290	140	60-72	3.7	E
	0-320	150	62/72	3.7	E
	0-320	160	62/74	3.7	E
	0-360	180	68/76	3.7	F

LOW HORSE POWER PROPS

(Ultralight Type)Composite

Schedule	P-Tip	P-Tip
A	Up to 54"	$8.00 ..... $12.20
B	55"-110"	$8.50 ..... $12.75

Call for Quote on all Prince Aircraft Propellers.

HIGH HORSEPOWER PROPS

Composite

Schedule	P-Tip	P-Tip
C	Up to 45"	$12.50 ..... $18.65
D	46"-55"	$13.00 ..... $19.20
E	56"-65"	$15.50 ..... $23.10
F	66"-110"	$16.40 ..... $24.40

MCCAULEY MET-L-PROPS

Original equipment on most Cessna aircraft and popular with owners of many other designs. McCauley has earned an enviable reputation for producing high-performance propellers. Most popular numbers are available from local stock. The Met-L-Prop number designates the model, diameter and pitch. Example: CM7150 is a model CM propeller with a 71 inch diameter and 50 inch pitch. When ordering a new prop which requires a doweled spacer, both spacer and bolt kit are included. Spacers and bolt kits may also be ordered separately. When ordering, specify whether engine has a tapered or flanged crankshaft. Tapered crankshaft requires Kit No.B-4622-6. Flanged crankshaft requires Kit No.B-4622-9. Elliptical tip models 1A90/CF and square tip models 1B90/CM having the same diameter and pitch are directly interchangeable except for CF7538 on Cessna 150G, H, J and K model seaplanes.

Aircraft Model	Engine	Standrd Prop	Cruise Prop	Climb Prop	Our Price**
Beech A23-24	Lyc.I0-360-A2B,A2D	BFA7762+			Call
Bellanca 7ECA	Cont. 0-200A	ACM6948+			Call
Bellanca 7ECA	Lyc. 0-235-C2C	CLM7246+	CLM7250		Call
Bellanca 7GCA	Lyc. 0-320-A2B	GM7452	GM7455	GM7450	Call
Cessna120,140	Cont. C-85	CM7148	CM7150	CM7146	Call
Cessna120,140	Cont. C-90	CM7152	CM7154		Call
Cessna 150A-F	Cont. 0-200A	MCM6950			Call
Cessna150G-K	Cont. 0-200A	DCM6948	DCM6950		Call
Cessna 150L	Cont. 0-200A	OCM6948+			Call
Cessna 170A,B	Cont. C-145	MDM7655	MDM 7656	MDM7653	Call
Cessna 172	Cont. 0-300A,B	MDM 7653	MDM7655	MDM7652	Call
Cessna 172A-H	Cont. 0-300C,D	EM 7653	EM7655	EM7652	Call
Cessna172I,K,L	Lyc. 0-320E2D	DTM7553+			Call
Cessna 175	Cont. G0-300A,C	MFC8467			Call
Cessna 175A,B	Cont. G0-300C,D	MFC8467			Call
Cessna 177	Lyc. 0-320-E2D	TM7653+			Call
Cessna 177A	Lyc. 0-360-A2F	EFA7656+			Call
Great Lakes	Lyc. 0-320-E2A	EGM 7654			Call
Luscombe 8A	Cont. A-75	CM7447	CM7449		Call
Piper J3 Cub	Cont. C-85	CM7144	CM7146		Call
Piper PA-18,18A	Lyc 0-290-D2	GM8241`			Call
Piper PA-32	Lyc.0-540-F4B5	PFA8266+			Call

Applications and Prices for some Popular McCauley Props. All Models Available. Prices are the same for all props with the same letter prefix.

MCCAULEY DE-ICE BRUSH CLUSTERS

These McCauley De-Ice Brush Clusters from Rapco are FAA-PMA approved and are applicable to any aircraft using the McCauley style brush blocks. Two clusters per block are required. Brush clusters with dash numbers require one of each dash number per block.

Rapco Part No.	Block No.	Installation	Part No.	Price
RAB40012	C40010	Cessna: T182 TR182 340A 402C 404 414A 421C 425	05-01326	$52.75
RAB40189	C40179	Cessna: T182 TR182 340A 402C 404 414A 421C 425	05-01327	$69.75
RAB40046	C40055	Cessna: U206G TU206G 210N P210N T210N 210R T210R 310P T310P 310Q T310Q 310R T310R 441	05-01328	$119.85
RAB40193	C40187	Cessna: U206G TU206G 210N T210N 210R P210N T210R T303 441	05-01329	$81.75
RAC40256-1	C40257	Raytheon: F33A V35B A36 B36TC 58 58A 58P 58PA 58TC 58TCA B200 B200C B200CT B200T	05-01330	$52.75
RAC40256-2	C40257	Raytheon: F33A V35B A36 B36TC 58 58A 58P 58PA 58TC 58TCA B200 B200C B200CT B200T	05-01331	$52.75
RAC40371-1	C40363	Raytheon: B200 B200C, B200T, B200CT A200CT	05-01332	$67.75
RAC40371-2	C40363	Raytheon: B200 B200C, B200T, B200CT A200CT	05-01333	$67.75
RAB40332	C40331	Fairchild: SA227-AT SA227-AC SA227-BC SA227-CC SA227-DC	05-01334	$74.85

PRINCE AIRCRAFT PROPELLER ORDERING INFORMATION

HOW TO DETERMINE COST

1. Select style and price, P-TIP or Composite P-TIP propeller.
2. Multiply propeller diameter times price per inch, e.g.:

High Horsepower 68" dia. P-TIP propeller, 68 x 13.51 = $918.68,
Composite P-TIP 68 x 18.48 = $1256.64

3. Add Leading Edge Protectors, if required.

MULTI-BLADE PROPS

Three-Blade .....2 Blade rate x 3 Four-Blade ..... 2 Blade rate x 4

LEADING EDGE PROTECTOR

Up to 48" diameter ..... $61.00 49" - 110" $83.00

Prices Subject to Change Without Notice

POWERFIN COMPOSITE PROPELLERS

Powerfin is the only composite propeller manufacturer in the U.S. to offer a true Clark-Y airfoil which optimizes surface airfoil for thrust. Powerfin also allows for infinite pitch range with any increment. The pitch alignment tool supplied with every Powerfin takes the guesswork out of pitching your prop. Simply set the stop screw, clamp the tool to the hub, and turn the blade to the stop. The process takes less than 10 minutes for a 3 bladed prop. Powerfin features include superior aerodynamics, noise reducing tips, superior composite construction, very strong low profile hub, durable finish, 2 and 3 blade configurations, fits Rotax 75MM bolt pattern, adapters for every bolt pattern, 32" to 72" diameter, leading edge protection, speed set hub and a two year factory warranty against defects. Weight is 6.5 lbs. for 2 bladed Powerfin and 9.0 lbs. for 3 bladed Powerfin. Complete brochure available on request.

MODEL B

General use propeller although specifically designed to run significantly smaller diameters than most other props. The B-Model runs very well on a 582/2.58 as a three blade 60" for example, and can out produce our competition even when running much smaller diameters. Maximum possible diameter with this model is 65".

MODEL C

Designed specifically for powered parachutes as a three blade 64" on a Rotax 582/2.58, this design works well on Rotax 447's through Rotax 618 as well as the Hirth engines that fall between 40 and 80 horsepower. This is the propeller being sold as standard equipment on 6 of the top 7 ppc's. Maximum possible diameter with this model is 69".

MODEL E

This is our smallest propeller - designed for engines between 15 and 30 horsepower. These narrow blades allow for a maximum possible diameter of 53". Backpack ppc's are the target of this design although the blade has been proven very efficient on many older, fixed wing airplanes with diameter restrictions. This is the ONLY pitch adjustable prop available to backpack units.

MODEL F

This is our largest propeller - designed for larger two-stroke engines that use the higher gear reduction ratios and horsepower up to 115. This prop runs beautifully on a Rotax 503/3.47 as a three blade 66"-70". A two place Kolb can't squeeze any more efficiency out of a 503/3.47 than with our F-model 68" prop. This prop is also the finest prop available for the Rotax 912, 912S, and 914 engines. Maximum possible diameter with this model is 75".

To calculate the cost of a full propeller assembly, take the price for a single blade times the number of blades you need. Then add the cost of the hub you need.

For example: A three blade C-model propeller assembly will include three C-model blades ($420) and a standard three blade Apex hub ($195). The total is $620. All hub assemblies* include mounting hardware, optional locknuts for Rotax engines, and a 1/4" dowel pin used for setting the pitch.

The cost of each type of blade is the same regardless of the diameter.

BLADES

Blade Model	Part No.	Single Blade Price
B-Model	05-06962	$189.00
C-Model	05-06963	$179.00
E-Model	05-06964	$169.00
F-Model	05-06965	$229.95

*All propeller and hub assemblies include mounting hardware for the Rotax A, B, C, or E box or the Hirth gearbox.

HUB ASSEMBLIES*

Hub Type	For Blade Models	Part No.	Price
Special Three Blade Apex	E	05-06973	$289.95
Standard Two Blade Apex	B, C, & F	05-06966	$297.95
Standard Three Blade Apex	B, C, & F	05-06967	$320.00
Standard Four Blade Apex	B, C, & F	05-06968	$347.00
Standard Five Blade Apex	B, C, & F	05-06969	$374.00
Rotax 912 Three Blade Apex	B, C, & F	05-06970	$358.00
Rotax 912 Four Blade Apex	B, C, & F	05-06971	$350.00
Rotax 912 Five Blade Apex	B, C, & F	05-06972	$378.00

Shipping a two or three blade propeller assembly is $20.00. These prices are for all U.S. customers excluding Alaska and Hawaii. Most international orders will ship U.P.S. International - Expedited Service. If you wish a quote on an international order, please supply an address with a postal code so we can quote shipping prices.

PROPS INC. PROPELLERS FOR HOMEBUILTS

Ground Adjustable Propellers by Props Inc. For those who have changes in mind or like the looks of a three blade prop. It has wood blades similar to the Homebuilt line, but with an aluminum hub. Key Benefits: Wide Adjustable Range • Replaceable Blades • Custom Designed

Description	Diameters	Price
VW, Jabiru, Suburu	46" - 58" dia.	$1200.00
Three Blade	Up to 90" dia.	$1500.00
Four Blade	Up to 90" dia.	$1750.00

Homebuilt Props by Props Inc. Homebuilt props come with urethane leading edge protection and fiberglassed wrapped tips. Key Benefits: Durable, yet can save tear down cost in the event of a ground strike.
•Specifically designed for the use. • Can be modified for fine tuning.

Description	Diameters	Price
VW, Jabiru, Suburu	46" - 58" dia.	$435.00
Gyrocopter, Airboats Mac, VW, Suburu	48" - 56" dia.	$435.00
C-90, O-200, O-235 O-320, O-290, O-360	58" - 60" dia. 60" - 72" dia.	$1148.00

Specify aircraft type, prop diameter, pitch, bolt pattern, pusher or tractor configuration, and mahogany or birch when ordering any homebuilt propeller. Allow 2-3 weeks for shipment of our custom propellers. Add $30.00 for 3-blade and $50.00 for 3 and 4 blade props-packing and shipping. Maple may be substituted for Birch according to availability.

ULTRALIGHT PROPELLERS BY PROPS INC.

These high quality ultralight propellers are available in both birch and mahogany. The birch props are as split-resistant as mahogany but mahogany props with glass coating are 1/3 lighter than the birch. Mahogany props come with a glass coating - it is optional on birch props. Add $35.00 for leading edge protection on birch or mahogany props. Propeller reconditioning available on all ultralight props. Specify prop dia., pitch, bolt pattern, aircraft and engine type, birch or mahogany, and pusher or tractor configuration.

Allow 2-3 weeks for delivery. Prop drilling included in price. Additional $18.00 for packing and shipping.

Diameter (Specify)	Pitch (Specify)	Price for Plain Prop
36 thru 40	Any (to 36")	Call for Quote
41 thru 48	Any (to 46")	Call for Quote
49 thru 54	Any (to 46")	Call for Quote
55 thru 60	Any (to 46")	Call for Quote
61 thru 66	Any (to 46")	Call for Quote
67 thru 72	Any (to 46")	Call for Quote

Request quotation on prop pitch over 46"

ORDER ONLINE!
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• 80,000 Parts!
• 24 Hour Access!
• Fast, Easy Navigation!

WARP DRIVE ADVANCED COMPOSITE PROPELLERS

Warp Drive's Advanced Composite Carbon Fiber propeller has a structural strength near that of metal propellers. Because of the stiffness achieved by using carbon fibers, the prop will do very little coning (bending forward) under power. Proper fiber placement allows the prop to flex torsionally for maximum cruise efficiency. The strongly fixed position of the blades along with optimum torsional performance translates into more thrust than conventional propellers.

The interior structure of this new propeller is all carbon fiber - no fiberglass, no foam, no filler - an all carbon fiber matrix combined with top quality hybrid epoxies. Carbon fiber is one of the strongest building materials available. When properly engineered, carbon fiber can achieve the strength and stiffness of a metal part, as demonstrated by its wide range of industrial and aerospace uses.

WARP DRIVE PROPELLER BLADE TYPES

All propellers and blade types are available with Stainless Steel Leading Edge protection as an option at additional cost.

1. STANDARD ADVANCED COMPOSITE CARBON FIBER BLADES
   The Standard Carbon Fiber Blades can be used on Rotax, Arrow, VW and similar engines.
2. HIGH HORSE POWER ADVANCED COMPOSITE CARBON FIBER BLADES
   The Carbon Fiber HP Blades will be required for use on Lycoming, Continental and some auto conversion engines.

WARP DRIVE HUBS

Warp Drive offers two types of hubs of our propellers. First is our Standard Hub. This is an assembly of anodized aluminum plates and composite clamping blocks. It accommodates standard and custom hub bolt patterns of up to 3 1/8".

The second type of hub is the HP Hub. This hub consists of two halves machined from solid aluminum. It is the same weight as the standard hub assembly and can accommodate Rotax, Arrow, VW, SAE I Continental, SAE II Lycoming and custom bolt patterns.

STANDARD CARBON FIBER PROPELLER

2-Blade Std Carbon Fiber Propeller ..... 05-31920 ..... $437.95
3-Blade Std Carbon Fiber Propeller ..... 05-31925 ..... $637.00
4-Blade Std Carbon Fiber Propeller ..... 05-31930 ..... $965.00
Replacement Std Carbon Fiber Blade ..... 05-31935 ..... $189.00

WITH HP HUB

05-31940 ..... $719.00
05-31945 ..... $924.00

HIGH HORSE POWER CARBON FIBER PROP WITH HP HUB

2-Blade Carbon Fiber H/P w/HP Hub ..... 05-31950 ..... $883.00
3-Blade Carbon Fiber HP w/HP Hub ..... 05-31955 ..... $1,031.00
Replacement Carbon Fiber HP ..... 05-31960 ..... $328.95
Mounting Hardware (Rotax) ..... 05-31965 ..... $16.55
Protractor ..... 05-31970 ..... $39.75
Non-Standard Hub Pattern ..... 05-31975 ..... $40.60
Spinner (Rotax Pattern) ..... 05-31980 ..... $112.50
"HP" Hub (purchased separately) ..... 05-31985 ..... $307.00

ORDERING A PROPELLER

We request all applicable information below when you are ordering:

1. Name, Address, Phone Number(s)
2. Vehicle - type, make, model, cruise speed, tractor/pusher,
3. Engine - make, horse power,
4. Reduction Drive - type, ratio. If there is no reduction drive, (State Prop RPM)
5. Hub Requirements - A) Bolt circle dia, B) Number of bolts, C) Bolt dims, D) Center hole dims, E) Drive lug dimensions (if applicable),
6. Propeller Description-rotation, diameter, structural limitation of diameter manufacturer's suggested prop description, no. of blades, tractor or pusher.

QUICK ADJUST SYSTEM IVOPROPS

The Quick Adjust System Ivoprops allow you to adjust the pitch on the ground in a matter of seconds by turning the screw adjustor in the center of the prop. Specify aircraft and engine make and model, and propeller diameter. * Magnum Ivoprop (5.5" cord, 58" to 76" diameter) is a high-horsepower version for engines up to 700 HP.

* Magnum Paddle Ivoprop (5.5" constant cord, 58" to 84" diameter" is for high-horsepower air boats and bush planes.

Description	Part No.	Price
1 Blade Ultralight Standard Lefthand	15-05478	$169.50
1 Blade Ultralight Standard Righthand	15-05856	$245.95
1 Blade Ultralight Hi-Pitch Lefthand	15-05477	$140.95
1 Blade Ultralight Hi-Pitch Righthand	15-06638	$221.95
2 Blade Ultralight Standard Lefthand	15-04749	$461.95
2 Blade Ultralight Standard Righthand	15-06312	$450.00
2 Blade Medium Standard Lefthand	15-08279	$844.00
2 Blade Medium Standard Righthand	15-07899	$844.00
2 Blade Ultralight Hi-Pitch Lefthand	15-06932	$439.95
2 Blade Ultralight Hi-Pitch Righthand	15-06933	$423.95
3 Blade Ultralight Standard Lefthand	15-04785	$619.00
3 Blade Ultralight Standard Righthand	15-06326	$620.00
3 Blade Medium Standard Lefthand	15-06325	$1,107.00
3 Blade Medium Standard Righthand	15-04784	$1,094.00
3 Blade Ultralight Hi-Pitch Lefthand	15-06972	$599.95
3 Blade Ultralight Hi-Pitch Righthand	15-07224	$660.00
6 Blade Ultralight Standard Lefthand	15-08274	$1,238.00
6 Blade Ultralight Standard Righthand	15-08275	$1,238.00

IN-FLIGHT ADJUSTABLE PITCH IVOPROPS

The In-Flight Adjustable Pitch Ivoprop allows the pilot to change the propeller pitch in flight through a toggle switch mounted in the cockpit. Mounts directly to any Rotax gear box (B or C0 and can be adapted to VW, Subaru, Hirth, Arrow and smaller Lycoming and Continental engines. Older model Ivoprop ground adjustable props can be converted to the In Flight System with the Retrofit Kit. In Flight adjustable hub comes assembled with complete instructions. Weight of 3 blade 72" Prop including all required parts (furnished) is 9 lbs. Specify aircraft and engine make and model, and propeller diameter (48" to 76"). Magnum Ivoprops are for engines up to 700 HP (56"-76" prop. dia.).

Magnum 2-Blade Ivoprop Kit ..... P/N 05-33270 ..... $2,451.00
Magnum 3-Blade Ivoprop Kit ..... P/N 05-33280 ..... $2,755.00
Magnum 6-Blade Ivoprop Kit ..... P/N 05-33290 ..... $3,849.00
Magnum Retrofit Kit for Ground Adjustable Ivoprops
P/N 05-33295 ..... $1,590.00

IVOPROP REPLACEMENT BLADES

Note: Proproot Number required prior to order. (This number can be found at the base of the original prop blade).

High Pitch Right Hand ..... P/N 15-06638 ..... $221.95
High Pitch Left Hand ..... P/N 15-05477 ..... $140.95
Standard Pitch Right Hand ..... P/N 15-05856 ..... $245.95
Standard Pitch Left Hand ..... P/N 15-05478 ..... $169.50

STEEL LEADING EDGE PROP TAPE

Stainless Steel leading edge tape. This part replaces the leading edge tape on the Ivoprop. P/N 15-06059 ..... $7.95

RETROFIT KIT FOR ULTRALIGHT IVOPROPS

To upgrade Ultralight model 2 or 3 blade Quick ground adjust to Electric in flight adjust.
P/N 15-06637 ..... $934.00

CONSTANT SPEED ELECTRONIC GOVERNOR

• Converts In-Flight Adjustable Ivoprop into the constant speed propeller • Plugs into existing wiring harness • Size: 2" x 4" x 1" P/N 05-00601 ..... $347.00

ULTRA-PROP

Select 2, 3, or 4 blade props. Each blade is moulded from a high strength glass-reinforced composite. High efficiency airfoil design means high thrust from a 59" diameter prop. One set of pitch blocks included, additional blocks available in 1° increments. Universal hubs made from high strength composite. Accommodates most popular bolt-mounting patterns. Each prop comes complete with all assembly and mounting hardware, and complete instructions. Black blades and hub are beautifully complemented by high impact polyester spinner. Blades can be trimmed to length, allowing custom prop diameters as small as 48".

Description	Part No.	Price	Description	Part No.	Price
Kit 2 Blade LH	UP102L	$235.00	Kit 2 Blade RH	UP102R	$235.00
Kit 3 Blade LH	UP103L	$285.00	Kit 3 Blade RH	UP103R	$285.00
Kit 4 Blade LH	UP104L	$339.00	Kit 4 Blade RH	UP104R	$340.00
Kit 5 Blade LH	05-06455	$450.00	Kit 5 Blade RH	05-06456	$453.00
Kit 6 Blade LH	05-06457	$557.00	Kit 6 Blade RH	05-06458	$557.00

ACCESSORIES

Description	Part No.	Price	Description	Part No.	Price
Pitch Block Set 9 DG	UP9	$8.50	Pitch Block Set 10 DG	UP10	$8.50
Pitch Block Set 11 DG	UP11	$8.50	Pitch Block Set 12 DG	UP12	$8.50
Pitch Block Set 13 DG	UP13	$9.50	Pitch Block Set 14 DG	UP14	$8.50
Pitch Block Set 15 DG	UP15	$8.50	Pitch Block Set 16 DG	UP16	$8.50
Pitch Block Set 17 DG	UP17	$8.50	Pitch Block Set18 DG	UP18	$8.50
Bolt Sleeve Set	UPSLEEVE	$3.85	Hardware Pack	UPHDW	$4.00
Replace LH Blade	UP105P	$73.50	Replace Blade RH	UP105T	$73.50
Hub half 2 Blade	UP1072	$35.00	Hub Half 3 Blade	UP1073	$35.00
Hub Half 4 Blade	UP1074	$35.00			

ULTRA-PROP SPINNER - Kit includes white polyester spinner, mounting bracket, and all extra hardware for installation. Specify Quicksilver MX belt drive type with 1/4 inch mounting hardware or Rotax gear drive with 5/16 or 8 mm mounting hardware. Note: Designed for use on Ultra-Prop only.

1/4" MX ..... P/N 05-04958 ..... $59.95
5/16" Rotax ..... P/N 05-04959 ..... $59.95

WHIRLWIND PROPELLERS — GOVERNORS

WHIRLWIND PROPS

Whirl Wind has made significant developments in the construction of the carbon composite propeller blades Insuring a strong, light and durable propeller system. The blade twist has been optimized for aerobatic performance, and the wide chord allows for more low-speed thrust and braking on those long down lines.

AP

200C SERIES PROPELLERS

The 200C Series system consists of 2 carbon fiber blades with nickel leading edge erosion shields, aluminum hub and a composite spinner. This propeller is counter-weighted to prevent engine overspeed. This propeller can be flown in rain and off unapproved airstrips.

Performance & Quality. This 200C Series propeller has been designed to maximize the aerobatic performance of your airplane! The exceptional performance is derived from advanced engineering developments, including the use of our latest airfoils. The 200C Series is a two-blade hydraulic constant speed propeller system designed for aircraft using the Lycoming IO-360 engine (180 - 200 hp).

P/N 05-00568 ..... $9,960.00

SPECIFICATIONS

Prop Model#:	7755/C214	System Wt:	47 lbs (213 Kg)
Engine Type:	Lyc. O-360,IO-360	Function:	Aerobatic
Engine HP:	180 - 200 hp	Control:	Governor P-940
Max RPM:	2700 RPM	Finish:	Gray or White
# of Blades:	2	Spinner:	Composite 13",14"
Diameter:	77"		

200C SERIES BENEFITS

* Faster Acceleration
* Better climb
* More vertical performance
* Faster top speed
* More braking effect
* Lower polar moment of inertia

400C SERIES PROPELLERS

The new 400C Series system consists of three carbon fiber blades with nickel leading edge erosion shields, aluminum hub and a composite spinner. This propeller is also counter-weighted to prevent engine overspeed. This propeller can be flown in rain and off of unapproved airstrips.

Experience the exceptional performance of the 400C Series propeller system. Like the 200C Series, performance is derived from advanced engineering developments, including the use of our latest airfoils. The 400C Series is a three-blade hydraulic constant speed propeller designed for aircraft using the Lycoming IO-540 engine (260 - 300 hp).

P/N 05-00569 ..... $13,040.00

SPECIFICATIONS

Prop Model#:	7855/C415	System Wt:	65 lbs
Engine Type:	Lyc. IO-540	Function:	Aerobatic
Engine HP:	260 - 300 hp	Control:	Governor P-940
Max RPM:	2700 RPM	Finish:	Gray or White
# of Blades:	3	Spinner:	Composite 14"
Diameter:	78"		

400C SERIES BENEFITS

* Faster Acceleration
* Better climb
* More vertical performance
* Faster top speed
* More braking effect
* Lower polar moment of inertia

JIHOSTROJ HYDRAULIC GOVERNORS

Jihostroj Model	Engine Application	Part No.	Price
P-910	Rotax 912 & 914; Oil Pressure to increase pitch	05-00571	$1,399.00
P-920	Lycoming O-320, IO-360, IO-540 - Standard; Oil Pressure to increase pitch	05-00572	$1,395.00
P-940	Lycoming O-320, IO-360, IO-540 - Aerobatic; Oil Pressure to decrease pitch	05-00573	$1,375.00

WHIRLWIND ROTAX 912/914 PROPELLERS

The WhirlWind GA propeller series are ground pitch adjustable aircraft propellers featuring advanced aerodynamic and composite design. The high gloss urethane surface shows off the quality craftsmanship and attention to detail. The blade design is optimized for maximum efficiency and minimum noise. The blade structure is manufactured from theromoset epoxy/graphite composite matrix. This advanced composite structure ensures high strength and blade accuracy in all flight environments. Only WhirlWind propellers come standard with electroformed Nickel leading edge shields for superior fit and abrasion protection. The hub is CNC machined from aerospace aluminum and is dimensionally certified; all hubs are surface treated with shot peen for increased strength and cycle life and then Anodized for corrosion protection.

Specifications: Engines: Rotax 912/914, Diameter: 2 blade - 68-70 in. 3 blade - 64-70 in., Weight: 2 blade - 8 lbs.3 blade - 11 lbs., HP/RPM: 115@5800

Description	Part No.	Price
68" 2 Blade Prop	05-11168	$1,550.00
69" 2 Blade Prop	05-11167	$1,550.00
70" 2 Blade Prop	05-06851	$1,550.00
68" 3 Blade Prop	05-11166	$1,528.00
69" 3 Blade Prop	05-11165	$1,528.00
70" 3 Blade Prop	05-06850	$1,528.00
Accessories		
9" Spinner For Prop	05-06852	$325.00
9.75" Spinner For Prop	05-06853	$330.00
11.3" Spinner For Prop	05-06854	$335.00

PROP & SPINNER POLISHING KIT

This kit was developed specifically to maintain the propeller and spinner on prop & spinner in pristine condition. P/N 09-23525 ..... $26.95

PROP PROTRACTOR

Perfect for precision setting of all ground-adjustable props, as well as precision alignment of control surfaces.

P/N 05-31970 ..... $39.75

THERM-X HOT PROP PROPELLER DE-ICING KIT

De-icing in under 90 seconds with the push of a button! No Fluids! No Mess! • Therm-X Hot Prop is a complete propeller deicing kit made up of Part 23 certified products (no more scrounging parts to build system) • Available for 2 blade props (currently Continental only, Lycoming to follow) 12V or 24V • 1 year Warranty • Installation documentation • Manufacturer provides support • Weight 4.9 lbs.

2 Blade ..... P/N 05-03383 ..... $3,685.00

A1633-11 O-RING FOR HARTZELL COMPACT HUB PROPELLERS

The O-ring is A1633-11 or PRP909-6; commonly made by Parker Seal Company. Outside Diameter: .048 Length Under Flange: .096 Flange Diameter: .072 P/N 04-04566 ..... $1.35

AIRCRAFT SPRUCE WEST
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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PROPELLER GOVERNORS

Quality Aircraft has been overhauling Prop Governors for over ten years. Whether your requirement is for a Woodward, McCauley or Hartzell, Quality Aircraft has most governor models available on an overhaul/exchange basis. Should you prefer to purchase the Prop Governor "outright", please add the core charge to the exchange price.
All overhauled Prop Governors are warranted for material and workmanship for a period of 180 days.

Manufacturer	Part No.	Price	Core Charge
HARTZELL			
A-SERIES Prop Governor	05-04721	$1,465.00	$1,000.00
B-SERIES Prop Governor	05-04722	$1,275.00	$400.00
C-SERIES Prop Governor	05-04723	$1,275.00	$400.00
D-SERIES Prop Governor	05-04724	$1,275.00	$400.00
E-SERIES Prop Governor	05-04725	$1,275.00	$400.00
E8-SERIES Prop Governor	05-04726	$1,374.00	$400.00
F2-SERIES Prop Governor	05-04727	$1,555.00	$400.00
F3-SERIES Prop Governor	05-04728	$1,275.00	$400.00
F4-SERIES Prop Governor	05-04729	$1,275.00	$400.00
F6-SERIES Prop Governor	05-04730	$1,275.00	$400.00
F8-SERIES Prop Governor	05-04731	$1,370.00	$400.00
H-SERIES Prop Governor	05-04732	$1,559.00	$400.00
MCCAULEY			
Manufacturer	Part No.	Price	Core Charge
C290D2 Prop Governor	05-04735	$1,274.00	$500.00
C290D3 Prop Governor	05-04736	$1,275.00	$500.00
C290D4 Prop Governor	05-04737	$1,274.00	$500.00
C290D5 Prop Governor	05-04738	$1,175.00	$500.00
DC290D1 Prop Governor	05-04739	$1,175.00	$500.00
DCFS290D7 Prop Governor	05-04740	$1,325.00	$400.00
DCF290D7 Prop Governor	05-04741	$1,275.00	$500.00
DCFTS290D10 Prop Governor	05-04742	$1,465.00	$400.00
DCFTS290D15 Prop Governor	05-04743	$1,465.00	$400.00
DCF290D8 Prop Governor	05-04744	$1,325.00	$400.00
DCFS290D9 Prop Governor	05-04745	$1,326.00	$400.00
WOODWARD - Call for price and availability.			

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PCU 5000 PROPELLER GOVERNORS

The PCU5000 is lightweight, compact & pumps 30 - 35% more oil which maintains a perfect constant-speed.

Features:

- Compact / Weighs 2 lbs. less than most conventional governors
- New units at a lower cost
- Easy installation - hardware included
- TBO - same as your engine
- 3 year limited warranty
- 4 year extended warranty available

PCU5000 - FAA-PMA Approved for single engine Cessna, Beechcraft /Raytheon, Remis, Mooney and Piper aircraft.
Cerfified models fit all: Lycoming, Continental and *Rotax engines *(applicable if mounting pad conforms to AND20010)
PCU5000X - Experimental - The PCU5000X is specially engineered for single engine experimental aircraft and can be customized to a specific application.
Experimental models fit all: Lycoming, Continental, Superior Air Parts, Engine Components and *Rotax engines *(applicable if mounting pad conforms to AND20010)
Complete engine number required for order on each model.

PCU5000X Experminental Prop Governor ..... P/N 05-04750 ..... $1,694.00
PCU5000 Certified Prop Governor for McCauley / Woodward ..... P/N 05-04751 ..... $1,933.00
PCU5000 Certified Prop Governor for Hartzell ..... P/N 05-04752 ..... $1,787.00

DYNAVIBE PROP BALANCER

DynaVibe is an economical, state-of-the-art dynamic propeller balancer designed specifically for the aircraft industry. DynaVibe displays the magnitude and phase of propeller vibration allowing precise weight adjustments for balanced and smooth engine operation. * Economical - including: • Dynamic Balancer • Accelerometer with 30 ft cable • Optical Pickup and Reflective Tape (Tach) • Carrying Case • No hidden costs or additional items to buy! * Accurate - Reports RPM, Vibration Magnitude * Results - Reduce vibration for a smoother flight, and decrease mechanical wear of engine and instruments

DynaVibe Aircraft Prop Balancer ..... P/N 05-04532 ..... $1,495.00
DynaVibe Aircraft Prop Balancer with NIST..... P/N 05-04533 ..... $1,644.00
DynaVibe Rotocraft Prop Balancer ..... P/N 05-04534 ..... $1,995.00
DynaVibe Rotocraft Prop Balancer with NIST..... P/N 05-04535 ..... $2,190.00

DYNAVIBE PROFESSIONAL DYNAMIC PROP BALANCER AND VIBRATION ANALYZER

Reduce vibration for a smoother flight and decrease mechanical wear of engine and instruments! DynaVibe GX2 is a state-of-the-art dynamic propeller balancer and vibration analyzer designed specifically for the aircraft industry. The DynaVibe GX2 provides not only balancing functionality, but advanced spectral vibration analysis and integrated reporting. DynaVibe GX2 Includes: Dynamic Balancer/Analyzer, Two accelerometers with 30 ft cables, Optical Pickup and Reflective Tape (Tach), Carrying Case, and no hidden costs or additional items to buy!

P/N 05-08121 .....$3,995.00

BUZZ MASTER PROP BALANCER

This extremely simple and sensitive tool uses the plum-bob and bevel principle to balance props both vertically and horizontally. It can be carried in a small tool box for easy use in the field and balances props accurately for smooth operation. The precision machined hub works with any prop designed with standard 1" center hole. Illustrated instructions included.

P/N 13-17400 ..... $29.50

RETROREFLECTIVE TAPE FOR DYNAVIBE

This tape has a printed triangular pattern which provides strong visibility because of its reflective surface.

P/N 05-10645 ..... $19.95

BN-1 BULLET NOSE SPINNER KIT FAA-APPROVED

Designed specifically for fixed pitch wood or metal props installed on horizontal opposed engines with prop hub thickness not exceeding 3-5/8". Kit includes 8" diameter x 12" long spinner dome center hole is 2.68" diameter, two aluminum bulkheads, mounting hardware, templates for trimming dome to fit prop hub and complete installation instructions. Ideal spinner for homebuilts. Wt. 1-3/4 lbs. FAA approved for installation on many certificated aircraft such as Aeronca, Cessna, Luscombe, Piper, Stinson and Swift. FAA approval list on request.
Note: ACS Plates will only work with ACS Domes. Made in the U.S.A.

Complete Kit	P/N 10005	$315.00
Bulkheads Only: Front	P/N 05-02677	$77.85
Rear	P/N 10004-R	$77.85
Dome Only	P/N 10003	$156.95

SN-4 SPINNER KIT

Aluminum spinner, 9-7/8" diameter, 11-1/8" long. Center hole is 2-1/4" diameter Spinner dome fabricated from .080'' thick aluminum for durability. Wt. 2 lbs. Furnished with mounting hardware and trimming and installation instructions. Used on Q2, Q200 and other homebuilts. To order, see "How To Order Spinner Kits". Made in the U.S.A.
Note: ACS Plates will only work with ACS Domes.

Complete Kit	P/N 10303	$207.95
Rear Bulkhead Only	P/N 10302	$60.75
Dome Only	P/N 10301	$136.75
SN-4 Kit (undrilled bulkhead)	P/N 05-13200	$203.95
Optional Front Bulkhead (Not Incl.In Kit)	P/N 10304	$67.75

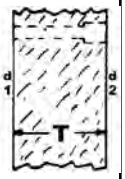
Front Plate available for hub thicknesses of 3-3/8", 3-1/2" and 2-3/4" only.

HOW TO ORDER SPINNER KITS

Please furnish the following information so that we may provide the proper spinner kit for your combination of prop hub thickness, prop bolt and prop bushing diameters, and bolt hole pattern.

- Spinner Model
- Prop Hub Thickness (T)
- Prop Bolt Dia. (d1)
- Prop Bolt Bushing Dia.(d2)
- Specify SAE #1 or SAE #2, SAE #3, or Rotax Pattern
  *Rotax & 4" Pattern are an additional $25.00
- Also Available in 6 hole, 4" Bolt circle Diameter.
- Forward Facing Flange Additional $60.00 Fee
- ACS machine fee PN 05-04904 $25.00

* Note: SAE #1 = 4-3/8" dia.; SAE #2 - 4-3/4" dia.; SAE #3 = 5-1/4" dia.



SPINNER EXTRA HIGH POLISH "CHROME"

We now offer our complete line of aircraft spinners "high polished", which gives them a beautiful chrome-like appearance. If spinner is to be painted this is not necessary, but if it will be bare, add the High Polish option for a bright, shiny look. Add these prices to the price of the standard spinner and specify "high polish". Made in the U.S.A.
Note: ACS Plates will only work with ACS Domes.

BN-1	$69.00	SN-4	$63.00	AC-1	$82.00
BN-3	$82.00	SN-5	$66.00		

ALL SPINNERS MADE ON STEEL TOOLING

LIGHT SPORT AVIATION SPINNERS

These high quality 8" and 9" spinners and bulkheads are made in the USA from 6061 aluminum and heat treated to T6 condition using Nadcap approved heat treat process. Meets or exceeds all physical and mechanical properties required to meet AMS 2770H and AMS4027. These spinners are highly polished and include standard prop cut-outs for Warp Drive, IVO, GSC 3 blade propellers and can be modified to accept other propellers. The spinners come coated with a protective finish that is easily peeled off after installation. The bulkheads are furnished predrilled to fit a Rotax 912 or 914 and Viking HF110 and can be modified for other engine applications.

Spinner 8"	P/N 05-06846	$198.00
Bulkhead 8"	P/N 05-06847	$139.00
Spinner 9"	P/N 05-06848	$215.00
Bulkhead 9"	P/N 05-06849	$145.00

BN-3 SPINNER KIT FOR LYCOMINGS

Aluminum spinner, 12-1/16" diameter, 13-1/4" long. Center hole is 2-5/8" diameter. Designed for installation on homebuilts with Lycoming 0-290, 0-320 and 0-360 engines. Spinner dome and bulkheads fabricated from .080" thick aluminum for durability. BN-3 spinner kits available for props with hub thicknesses of 3-7/16", 3-9/16", 3-3/4", 4-1/4", 4-11/16", 5" and 5-3/8". Wt. 3 lbs. Furnished with predrilled front and rear bulkheads, mounting hardware and trimming and installation instructions. To order, see "How To Order Spinner Kits". Note: ACS Plates will only work with ACS Domes. Made in the U.S.A.

Complete Kit	P/N 10060	$264.95
Rear Bulkhead Only (Large)	P/N 10031	$57.75
Front Bulkhead Only (Small)	P/N 10051	$65.75
Dome Only	P/N 10022	$143.75

STANDARD BN-3 KITS

P/N	Specifications	Price
05-10000	HUB 3-7/16, SAE2, BOLT 3/8, BWII 5/8	$264.95
05-11000	HUB 3-9/16, SAE2, BOLT 3/8, BWII 5/8	$263.95
05-03431	HUB 3-9/16, SAE2, BOLT 1/2, RWII 3/4	$264.95
05-03432	HUB 3-3/8,SAE2, BOLT 3/8 BWII 5/8	$264.95
05-12000	HUB 3-3/4, SAE2, BOLT 3/8, BWII 5/8	$264.95
05-13000	HUB 4-1/4,SAE2, BOLT 3/8, BWII 5/8	$268.95

NOTE: SAE #1= 4 3/8", 2 = 4 3/4", 3 = 5 1/4"
ALL OTHER BN-3 SPINNERS ARE SPECIAL ORDER

PROP SPACERS

(6061 Aluminum with Prop Bolt Holes Drilled)

Thickness	P/N	Price	Thickness	P/N	Price
1/16"	10055-1	$15.95	1/4"	10055-4	$22.95
1/8"	10055-2	$17.95	3/8"*	10055-5	$29.95
3/16"	10055-3	$21.95			

Specify SAE and bolt size. All are special order.

*Furnished in two pieces: 1/4" and 1/8" thick

BN-2 SPINNER KIT

The BN-2 aluminum spinner kit features a 10" long dome and is 10-3/4" in diameter. It is furnished complete with a rear bulkhead and hardware kit.Note: ACS Plates will only work with ACS Domes. Made in the U.S.A.

BN-2 Spinner kit w/drilled plate.	P/N 10340	$245.95
BN-2 Dome Only	P/N 10341	$161.75
BN-2 Rear Bulkhead only	P/N 10342	$65.00
BN-2 Spinner kit w/undrilled plate.	P/N 05-13500	$254.95

AC-1 SPINNER KIT

Aluminum spinner 10-1/8" diameter. Length of dome varies from 13-1/2" to 15-1/2", depending on prop hub thickness. Heavy duty construction. Furnished with predrilled front and rear bulkheads and streamlined fairing for pusher installations. Kits available for hub thicknesses of 3" to 5". For Lycoming 0-235 engines specify SAE #1 (4-3/8" dia.) or SAE #2 (4-3/4" dia.) bolt circle. Wt. 2-3/4 lbs. Furnished with mounting hardware and trimming and installation instructions. To order, see "How To Order Spinner Kits". ACS Plates will only work with ACS Domes.Made in the U.S.A.

Complete Kit	P/N 10105	$327.00
Kit Less Fairing	P/N 10105-1	$263.95
Front (Large) Bulkhead Only	P/N 10102	$63.75
Front (Large Heavy Duty) Bulkhead Only	P/N 10102HD	$95.75
Rear (Small) Bulkhead Only	P/N 10103	$67.75
Dome Only	P/N 10101	$151.75
Fairing Only	P/N 10104	$74.75
LG Bulkhead 3/8"Bolt, 5/8" Bushing SAE1	P/N 05-03428	$41.00
LG Bulkhead 3/8" Bolt, 5/8" Bushing SAE2	P/N 05-03429	$63.75

ADVANCED COMPOSITE AC-I SPINNER DOME

This new super-light spinner dome weighs about 8oz. which drastically reduces the spinner assembly weight and the need for lead ballast in the nose of pusher-type aircraft. This weight savings, combined with the revolutionary new tapered spinner dome which reduces drag can increase the cruise speed of almost any pusher-type homebuilt. These spinners have been used on a modified VariEze to win several air races.

This composite dome uses the AC-1 10102HD aluminum bulkheads and the 10104 fairing. The spinner's bulkhead is spun from 6061 aluminum sheet. The premium bulkhead is turned from 6061 billet for more fatigue resistance and is grey anodized.

AC-1 Advanced Composite Dome	P/N 01-28000	$289.50
AC-1 10102HD Bulkhead (Standard)	P/N 10102HD	$95.75
AC-1 Bulkhead (Premium)	P/N 05-04906	$269.00
AC-1 Faring	P/N 10104	$74.75

ACS SKULL CAP SPINNERS

5-inch diameter - For wood or metal props on Cont. A-65 to O-200 engines. Complete with mounting bracket and installation hardware. High-polish finish. Top quality. Made in the U.S.A.

Polished..... P/N 10210 ..... $56.50
Unpolished..... P/N 10211 ..... $45.00
5" Skull Spinner Dome (only) Polished ..... P/N 05-21600..... $41.75

6-inch diameter - For Lycoming O-235 to O-360 engines and Cessna 170's. With mounting bracket and installation hardware. High-polish finish. Top quality.

Polished ..... P/N 10220 ..... $62.75
Unpolished ..... P/N 10221 ..... $52.75
6" Skull Spinner Dome (only) Polished ..... P/N 05-21700..... $49.50

Bracket & Hardware Only (Fits Either Spinner)
P/N 05-21800..... $11.90

CESSNA SKULL CAP SPINNER

Skull Cap Spinner Assembly (small) for Cessna, FAA/PMA Approved. For wood or metal propellers on A-65, A-75, C-85, and C-90 Continental Engines. Made in the U.S.A.

Spinner Assembly .....P/N 05-06844..... $67.75
Dome Only.....P/N 05-04829..... $59.75
Bracket Only.....P/N 05-04830..... $20.50

P/N 05-00744

COMPOSITE SPINNERS FOR PIPERS & CESSNAS

These new composite materials spinners and bulkheads are FAA/PMA approved and STCs to replace aluminum spinners and bulkheads on the Piper aircraft models listed below. Bulkheads are constructed for maximum strength and resistance to fatigue due to vibration. Pipers metal versions often crack in 200-300 hours, whereas the composite assemblies have been tested over 4000 hours on a PA-28 with no failure. Spinners for twins & all bulkheads are warranted against vibration fatigue for the life of the aircraft by the factory. Includes washers.

Description	Model	PN	Price
Spinner Kit	PA28-140/150/160	05-28350	$2,022.00
Spinner Dome	150A, 150F, 150FA	05-01257	$543.00
Spinner Dome	170B, 172, (1956-59)	05-01258	$638.00
Spinner Dome	172XP	05-01259	$740.00
Spinner Dome	172 Skyhawk (G-O)	05-00744	$768.00
Spinner Dome	182 P, Q Skylane	05-00746	$824.00
Spinner Dome	177B, 177RG Cardinal	05-00747	$2,001.00
Spinner Dome	210 (all 3 blade McCauley	05-00748	$1,534.00
Spinner Dome	PA-140/150/160 Cherokee	05-00749	$649.00
Spinner Dome	PA-24-180/250, PA23-150/160	05-00752	$706.00
Spinner Dome	PA-24-180/250, PA23-235/250	05-00753	$1,190.00
Bulkhead	PA30, PA23-250 (Aztec)	05-02659	$752.00
Spinner Dome	PA30, PA23-350 (C model & up)	05-02660	$1,055.00
Spinner Dome	PA28-151/161 Warrior	05-02662	$891.00
Alt. Bulkhead	PA28-151/161 Warrior	05-02658	$620.00
Fwd. Bulkhead	PA28-151/161 Warrior	05-02655	$663.00
Spinner	310R, T310Q, T310R, T310P	05-00754	$812.00
Rear Bulkhead	PA28-161 Warrior	05-02663	$740.00
Spinner Dome	PA28-161 Warrior POST 1979 13" Spinner	05-02661	$742.00
Spinner LH	PA34-200T Seneca II	05-02665	$1,430.00
Spinner RH	PA34-200T Seneca II	05-02666	$1,430.00
Bulkhead	PA34-200T Seneca II	05-02664	$1,474.00
Bulkhead	PA31/-325/-350 Navajo	05-02667	$926.00
Bulkhead	PA31/-325/-350 Navajo	05-02668	$928.00
Spinner Dome	PA31/-325/-350 Navajo	05-02669	$1,525.00
Spinner Dome	PA31/-325/-350 Navajo	05-02670	$1,525.00
Bulkhead only	PA38-112 Tomahawk	05-02656	$513.00
Spinner Dome	PA28-235	05-00756	$1,527.00
Fwd. Bulkhead	PA28-180/181 Cherokee/Archer	05-00757	$539.00
Spinner Dome only	PA28-180/181 Cherokee/Archer	65805-00	$1,885.00
Spinner Dome	PA32R-300, PA32-260/300/301,	05-00758	$773.00
Fwd. Bulkhead	PA28R-180/200, PA-235	05-00759	$622.00
Spinner Dome	PA38-112 Tomahawk	05-00761	$808.00
Spinner Dome	PA34-200 Seneca I	05-00762	$1,498.00
Fwd. Bulkhead	PA28-161 Warrior	05-02671	$610.00
Spinner Dome	PA34-200 Seneca I	05-00763	$1,475.00

ROTAX PROPELLER SPINNERS

For all props with standard Rotax® 75mm bolt pattern. Spinner bulk head is predrilled and installs between prop and gearbox flange. Spinner installs with single bolt.

4" Diameter.....P/N 05-01129..... $83.75
5" Diameter.....P/N 05-01131..... $147.85
6-3/4" Diameter .....P/N 05-01132..... $228.95
7" Diameter.....P/N 05-04447..... $219.95

SN-5 SPINNER KIT

12" diameter, 11-1/8" long. Similar to a Piper design and adaptable to many homebuilts. Fabricated from .080" aluminum for durability. Furnished with predrilled rear bulkhead. Wt. 2 lbs. Mounting hardware and trimming and installation instructions furnished. To order, see "How to Order Spinner Kits.Optional Front Bulkhead available for 2 1/16 Hub Thickness. ACS Plates will only work with ACS Domes. Made in the U.S.A.

Description	Specifications	Part No.	Price
Spinner Kit Less Front Bulkhead	Standard 2-5/8 inch center hole	10313	$213.95
SN-5 Rear Bulkhead 10312	Standard 2-5/8 inch center hole	10312	$73.75
SN-5 Dome only 10311	Undrilled	10311	$144.50
SN-5 Front Bulkhead	Hub Thickness of 2-1/16 inch Standard center ONLY hole 2-5/8 inch	10314	$79.95
SN-5 Spinner Kit 10313	Standard Pre-Drilled.SN-5 Spinner, Kit SAE: 2 inch Bolt: 1/2 inch, Bush:3/4 inch	05-13300	$226.95
SN-5 Spinner Kit 10313-1	Drilled, SAE: 2, Bolt:1/2 inch, Bush: 3/4 inch, Standard Center Hole	05-03433	$189.75

SN-2 SPINNER KIT

The SN-2 aluminum spinner kit features an 11.5" long dome and 11-5/8" dia. Furnished complete with a rear bulkhead & hardware kit. Note: ACS Plates will only work with ACS Domes. Made in the U.S.A. SN-2 spinner kit with drilled plates.

P/N 10330.....$236.95
SN-2 dome only .....P/N 10331.....$159.75
SN-2 bulkhead only.....P/N 10332..... $65.00
SN-2 spinner kit w/undrilled plates.....P/N 05-13400.....$208.95

For spinner kits with drilled plates, please furnish information required for spinners orders as noted on page 176.

UHS FIBERGLASS SPINNERS

UHS spinners are practical, attractive, and flight proven having enhanced the apperance of many different aircraft. The spinners are available in 8", 9", 10", 11", 12" & 14" diameters for various engine and propeller combinations. For GSC, Ivoprop, Warp Drive, and Power Fin propellers using Rotax, Lycoming, Cont. & Mosler engines, spinners are sent cut out and assembled.

For pre-drilled cut-outs we require the following information:

1. Make and size of engine.
2. Make of Propeller.
3. Number of Blades.
4. Size required.

Given adequate information, we can also fabricate spinners for many other propeller-engine combinations. Call with your requirements and we will assess your particular application.

Size	Description	P/N	Price	Size	Description	P/N	Price
8"	UHS Spinner	05-09000	$161.95	12"	UHS Spinner	05-09400	$216.95
9"	UHS Spinner	05-09100	$179.95	14"	UHS Spinner	05-09500	$226.95
9"	9P Spinner	05-08377	$179.95	11.5"	Spinner Kit	05-09700	$219.95
10"	UHS Spinner	05-09200	$184.95	13.5"	Spinner Kit	05-09800	$252.95
11"	UHS Spinner	05-09300	$216.95				

UHS SPINNERS FOR SENSENICH SPORT PROPS

9" SENSENICH PROP SPINNER -

Dimensions (inches): W 8.75 x L 10.375
P/N 05-08371.....$169.95

9.75" SENSENICH PROP SPINNER -

Dimensions (inches): W 9.75 x L 8.25
P/N 05-08373.....$179.95

10.5" SENSENICH PROP SPINNER -

Dimensions (inches): W 10.5 x L 8.5
P/N 05-08374.....$189.95

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PROP EXTENSIONS – DUC PROPELLERS

CRUSH PLATES FOR WOOD PROPS

OD	Thickness	Bolt Circle	Bolt Dia.	Part No.	Price
6″	3/8″	SAE 1 (4.375″)	3/8″	05-02464	$64.85
6″	3/8″	SAE 2 (4.75″)	3/8″	05-02465	$64.85
7″	3/8″	SAE 2	3/8″	05-02466	$76.75
7″	3/8″	SAE 2	7/16″	05-02467	$79.75
7″	3/8″	SAE 2	1/2″	05-02468	$79.75
7″	1/2″	SAE 2	3/8″	05-02469	$84.00
7″	1/2″	SAE 2	7/16	05-02470	$89.75
7″	1/2	SAE	1/2	05-02471	$89.75

PROP SPACERS

Solid Prop Spacers, 6 thru holes. The prop bolt goes thru the prop and spacer and threads into the engine.

Bolt Diameter	Part No.	Price
Prop Spacer 1.5″x5″ Rotax	05-02472	$340.95
Prop Spacer 2″x5″ Rotax	05-02473	$407.00
Prop Spacer 2.25″x5″ Rotax	05-02474	$340.95
Prop Spacer 3″x5″ Rotax (Spool)	05-02475	$361.00
Prop Spacer 4″X5″ Rotax (Spool)	05-04418	$361.00

DRIVE LUGS FOR EXTENSIONS

05-28310 05-28410

Part No.	Type	O.D.	I.D.	Thread	Price Ea.
05-28310	Threaded	5/8	- - -	3/8-24	$31.65
05-04417	Threaded	5/8″	- - -	7/16-20	$30.75
05-28410	Threaded	3/4	- - -	1/2-20	$33.25

DUC SWIRL PROPELLERS

The aerodynamic design of this propeller has been designed to have a "constant speed" effect.
The blades that are made from unidirectional layers of carbon fiber prepeg epoxy and their structure has been defined in order to obtain the maximum stresses in torsion and bending. Therefore the effect of "constant speed" is not related to the deformation of the blade but its geometry and its particular profile.
Because of the extra flat profile and low chord,excellent performance is obtained in both: Aerodynamic and acoustic performance, but also in fuel consumption.
Thanks to the "constant speed" effect, there is very small engine speed difference between the aircraft on ground and in flight.
This propeller allows for excellent performance throughout the flight envelope including:
• Improved efficiency at takeoff and climb rate due to higher engine speed
• Many cruise extension
• A high user comfort
Propeller is available in Two-Blade and Three-Blade.
For engines with high power, its structure can be reinforced (SWIRL-R).
The Inconel SWIRL blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also its performance due to a change in its inertial behavior.

DUC SPINNERS

The DUC spinners are carried out in preimpregnated carbon fiber materials with on the surface woven carbon fabric.
The mounting plate, entirely out of carbon, thickness 0.12" (3mm), is produced with the Carbon Forge® process, also used for the manufacture of the DUC propeller hubs.
This patented process makes it possible to increase considerably the mechanical characterestics of the composite parts.

PROP EXTENSIONS

Precision machined prop shaft extensions are available from Aircraft Spruce & Specialty Co. Don't settle for lesser quality at advertised "savings". Prop extensions are machined from solid 2024 T-351 aluminum bar, and are supplied with clear anodized finish and stainless steel drive lugs (installed). 7″ diameter prop side is recommended for 0-320 engines running wood props, and is required for 0-360 engines (or larger) running wood props. For Cont. 0-200, you may choose 5.5″ diam on engine side. If prop is metal, please measure depth of drilled counterbore at all 6 bolt hole positions.

Flange Engine	SAE No.	Bolt Circle	Lug Diameter	Eng. Bolt Dia.
Cont. A-65, A-75, C-85, C-90, 0-200	SAE 1	4-3/8	5/8″	3/8″
Lycoming 0-235	SAE 1 or 2		5/8″	3/8″
Lycoming 0-290	SAE 2	4-3/4″	5/8″	3/8″
Lycoming 0-320	SAE 2	4-3/4″	5/8″	3/8 or7/16
Lycoming 0-360	SAE 2	4-3/4″	3/4″	1/2″
Lycoming O-540	SAE 2	4-3/4″	3/4″	1/2″

PLEASE ORDER USING THE FOLLOWING PART NO.

___X___–____E –____P_____– SAE___– ENGINE – PROP – PROP

length	diam prop side (6 or 7)	engine bolt 3/8 or 7/16 or 1/2	prop bolt 3/8 or 7/16 or 1/2	thr or non (threaded or non-threaded lugs installed in extension)	1 or 2	HUB (wood or composite or metal)	TYPE (Fixed Pitch or constant speed)

Example: 4 X 7 - 7/16 E - 3/8P thr - S2 - Lyc 0320 - wood - wood

12 HOLE SOLID PROP EXTENSION WITH THREADED DRIVE LUGS

Length x Dia.	Length x Dia.
1.25″x6″	1.25″x7″
2.25″x6″	2.25″x7″
3″x6″	4″x7″
4″x6″	6″x7″
6″x6″	8″x7″
8″x6″	

PRICES ON PROP EXTENSIONS CAN VARY PER APPLICATION
PLEASE CALL AND REQUEST A QUOTE FOR YOUR APPLICATION.

PROP HUB FRONT PLATES

Required for wooden propellers. Flange equivalent to Cont. P/N 3991. For use with A-65, C-85 installations or Lyc. 0-235 with SAE1 (43/8″) bolt pattern.
P/N 10351Cont. $34.75

Flange equivalent to Lyc. P/N 45688, for use with Lyc. 0-235 thru 0-360 engines with SAE2 Bolt Pattern engines.
P/N 10352 Lyc. $36.75

DUC FC WINDSPOON PROPELLERS

The FC WINDSPOON propeller, with its revolutionary shape called WINDSPOON, offers unrivalled performance.
Its technical innovations have several consequences:
• Better performance.
• Lower fuel consumption
• Less Noise
The very special profile of the FC WINDSPOON blade has been calculated to optimize the airflow over the whole surface of the WINDSPOON.
The offset of the twisting results in better reduction of friction and a longer life.
The FC WINDSPOON propellers are produced in accordance with the strictest standards of the industry, with unique equipment specially made to ensure the highest quality.
Propeller is available in Two-Blade and Three-Blade.
For engines with high power, its structure can be reinforced (FC-R WINDSPOON).
The Inconel FC WINDSPOON blade is protected with Inconel metallic reinforcement. It increases the life of the propeller and also its performance due to a change in its inertial behavior.
Available Diameter: 068″

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE DISCRIPTIONS & PRICING ON ALL DUC PROPELLERS, SPINNERS, AND ACCESSORIES.

SMOKE SYSTEM KIT MODELS SA-100 SERIES

All of the SA-100 series smoke system oil tanks are the same size (demensions). Models Differ by oil suction tube design, oil pump mounting location and oil tank configuration. Note: All kits are available with 12 or 24 volt DC smoke oil pumps. Please specify 12 or 24 volt DC when ordering.

SA-100 -

•For Level and Non-Continuous inverted, positive G flight.
•Top mounted oil pump.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 15"
•Width (End where oil pump is mounted) is 11"
•Depth (Pump to opposite end of tank) is 8.5"
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01438.....$977.90

SA-101 -

•For continious inverted flight.
•Top mounted oil pump.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 15"
•Width (End where oil pump is mounted) is 11"
•Depth (Pump to opposite end of tank) is 8.5"
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01439.....$978.00

NOTE: Add 1.5" to base on each side or end for bracket width.

SA-100H-

•For Level and Non-Continuous inverted, positive G flight.
•Side / End mounted oil pump.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 11"
•Width (End where oil pump is mounted) is 12"
•Depth (Pump to opposite end of tank) is 15"
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-02888 .....$977.90

SA-101H-

•For continious inverted flight.
•Side / End mounted oil pump.
•All hardware for complete installation.
•Height (To top of fill cap is) is 11"
•Width (End where oil pump is mounted) is 12"
•Depth (Pump to opposite end of tank) is 15"
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-02889 .....$977.90

NOTE: Add 1.5" to base on each side or end for bracket width.

SA-102-

•For Level and Non-Continuous inverted, positive G flight.
•Bracket mounted oil pump end or side.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 13"
•Width (End where oil pump is mounted) is 11"
•Depth (Pump to opposite end of tank) is 13"
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01440.....$977.90

SA-103-

•For continious inverted flight.
•Bracket mounted oil pump end or side.
•All hardware for complete installation.
•Step by step instructions.
•Height (To top of fill cap is) is 13"
•Width (End where oil pump is mounted) is 11"
•Depth (Pump to opposite end of tank) is 13"
•Oil tank capacity: 3.5 US Gallons
•Approx. oil used per minute: .8 Us Gallons
•Approx. total run time: 5+ minutes

P/N 05-01441.....$977.90

NOTE: Add 1.5" to base on each side or end for bracket width.

SMOKE SYSTEMS

SMOKE SYSTEM KIT MODELS SA-200 SERIES

Both of the SA-200 series smoke system oil tanks are the same size (dimensions). Models Differ by oil suction tube design.

SA-200-

- For Level and Non-Continuous inverted, positive G flight.
- Any Dimension top.
- Pump can be mounted on top or any side surface.
- Fill cap and any other fittings installed where you want them.
- All hardware included for complete installation.
- Height (To top of fill cap is) is 14"
- Width (End where oil pump is mounted) is 10"
- Depth (Pump to opposite end of tank) is 17.25"
- Oil tank capacity: 5.5 US Gallons
- Approx. oil used per minute: .8 Us Gallons
- Approx. total run time: 7+ minutes

P/N 05-02887 ..... $1,087.90
Horizontal-Low Profile.....P/N 05-07188 ..... $1,087.90

SA-201-

- For continuous inverted flight.
- Any Dimension top.
- Pump can be mounted on top or any side surface.
- Fill cap and any other fittings installed where you want them.
- All hardware included for complete installation.
- Height (To top of fill cap is) is 14"
- Width (End where oil pump is mounted) is 10"
- Depth (Pump to opposite end of tank) is 17.25"
- Oil tank capacity: 5.5 US Gallons
- Approx. oil used per minute: .8 Us Gallons
- Approx. total run time: 7+ minutes

P/N 05-02891 ..... $1,087.90
Horizontal-Low Profile.....P/N 05-07188 ..... $1,087.90

NOTE: Add 1.5" to base on each side or end for bracket width.

SA-201T SMOKE KIT OIL PUMP

This 5.5 Gallon smoke system kit is for continuous inverted flight with oil pump mounted on the top of the oil tank. This particular kit has been installed in the baggage area of a CJ6A, T34A and RV7 to date. Use this kit when height is not an issue.
Dimensions: Height (to top of oil pump) 16-1/4", Width (left to right) 13", Depth (end with label) 10"

P/N 05-03398 ..... $1,087.90
SA-200T Non-Continuous Inverted flight.....P/N 05-04479 ..... $1,087.90

Note: Add 1.5" at base of tank on sides and ends for bracket width.

AP

ACCESSORIES FOR THE SA-100 & SA-200 SERIES

Accessories	Description	Part No.	Price
All components less the oil tank	Virtually every part you will need to complete your smoke system except the oil tank	05-03366	$757.90
External Fill Kit	This kit has everything right down to the vinyl letter transfer "Smoke Oil Only" and detailed installation instructions.	05-03595	$147.40

INJECTOR ONLY KIT

The kit includes:• 1 Injector • 2 Injector Mounting Clamps • 1 AN-4 90 degree fitting • 1 AN-4 Straight Fitting • 1 Piece of Safety Wire • 1 Installation Instructions
Customer must provide: Engine Make , Engine Model and/or Exhaust Diameter at Injector Location (injector should be installed just after the Y in the header pipes on typical Lycoming O-360 / O-540 or similar and 15" or more before the end of the tail pipe on radial engines).
NOTE: This injector is intended for PISTON ENGINES.

P/N 05-06884 ..... $78.65

HOMSLEY SMOKE OIL INJECTOR

Homsley Smoke Oil Injector, sprays oil in a razor thin 180 degree pattern for more smoke using less oil. No welding required. Attaches to exhaust pipe thru a ¼ inch hole and a single hose clamp. Two required for great smoke.

P/N 05-06918 ..... $79.75

SMOKING AIRPLANES PREMIUM BLEND SMOKE OIL

Smoking Airplanes Premium Blend Smoke Oil is recommended for use with all Smoking Airplanes brand smoke system kits. Features: • Brilliant white smoke • Persistent hang time • Equal or better than leading smoke oil brands.

5 Gallon.....P/N 05-06949 ..... $98.00
55 Gallon .....P/N 05-06950 ..... $779.00

TYPICAL PROPERTIES	
API Gravity	38.3
Viscosity, cSt @ 40° C.	4.3
Viscosity, SUS @ 100° C	40.2
Viscosity Index	95
Flash Point,, (°F.)	240 (min)
Distillation, Vol%	
IBP	500F (min)
EP	625F (max)
Pounds Per Gallon	6.94
Color	Clear

SUPERDRI AVIATION SMOKE OIL

Super*Dri Aviation Smoke Oil is specially formulated for use in all aircraft. Whether it is a Full Scale or Model airplane Super*Dri is the cleanest burning oil you can purchase. Its pure paraffinic base creates big billowing, persistent smoke. Super*Dri is less messy. There is virtually no mess to clean off your plane, unlike the others. Super*Dri is environmentally safe and biodegradable.

Super-Dri Aviation Smoke Oil - 1 Gallon ..... P/N 05-04972..... $34.85
Super-Dri Aviation Smoke Oil - 5 Gallon ..... P/N 05-04975..... $105.75
Super-Dri Aviation Smoke Oil - 55 Gallon..... P/N 05-04976..... $837.00

55 GALLON IS DROP SHIP ONLY.

SMOKE OIL PUMP ONLY

The kit includes: • 1 Smoke Oil Pump • 1 Molex Quick Disconnect Wire Harness • 1 Instructions • 1 90 Degree AN-6 Fitting • 2 Straight AN-6 Fittings • 2 14 Gauge Wire Butt Connectors • Screws, Nuts Washers – Mounting Hardware • Customer Must Specify 12 Volt DC or 24 Volt DC.

12V ..... P/N 05-04477 ..... $290.95
24V ..... P/N 05-07814 ..... $290.95

SMOKE OIL TRANSFER PUMP KIT

No more spills! Fill your smoke oil tank quickly and cleanly with this 8 gallon per minute smoke oil transfer pump kit. Made with high quality components including Goodyear rubber hose, heavy duty pump, dispensing nozzle with built in swivel and aluminum hose connection fittings with filter screen and clamps! All you will need to complete the kit is any automotive (or aircraft) type 12 Volt DC battery, and your container of smoke oil! The step by step instruction manual makes set up and use safe and easy. This kit will work with any smoke oil supply container. Included: Dispensing nozzle with built in swivel and ¾" barb fitting, Oil pump with built in on/off switch and 6 foot cable with clamps for connection to battery, 18 foot x ¾" id delivery hose and 13 foot x ¾" id suction hose, Suction screen barb fitting and oil pump barb fittings with clamps.

P/N 05-04971 ..... $309.00

SMOKING AIRPLANES HATS

Your headset will fit great with these low profile, unstructured, deluxe, normal dyed cotton and stone washed hats! Features: Embroidered company name and logo, contrasting grey under bill & sweatband, self-fabric sweatband, & strap with brass buckle.

Khaki .....P/N 05-04480 ..... $12.99
Forest Green .....P/N 05-06951 ..... $12.95
Brown.....P/N 05-06952 ..... $19.95

COPPER STATE AVIATION SMOKE OIL

Copper State Petroleum's Aviation Smoke Oil is a low viscosity, amber colored petroleum base oil for many aviation smoke applications. It is non-toxic and specially formulated to produce a brilliant white smoke trail with incredible hang time.
Features: • Made from highly refined base stocks and contains no additives that can harm smoke systems. • Its low viscosity and ability to produce billowing white smoke clouds that are reluctant to dissipate make it the perfect choice for professionals looking to impress a crowd. • Its non-flammable formulation makes it an extremely safe and superior alternative to dangerously ignitable home-made oil and fuel mixtures.

1 Gallon Bottle.....P/N 05-06946 ..... $20.75
5 Gallon Pail.....P/N 05-06947 ..... $88.50
55 Gallon Drum.....P/N 05-06948 ..... $756.00
16 oz. Single .....P/N 05-07447 ..... $7.50
16 oz. 4 Pack.....P/N 05-07449 ..... $24.85

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SEAT BELTS & SHOULDER HARNESSES

FAA CERTIFIED PERSONAL RESTRAINTS

These are top quality, new manufactured assemblies. They are designed, manufactured, and proof tested to rigid FAA standards. All belts use proven lift to release style Davis metal to metal buckles. Push-to-release buckles are not used due to difficulties in releasing under emergency conditions. Aircraft quality alloys and 2-inch nylon webbing are used throughout. Belts are certified to FAA TSO-C22f.

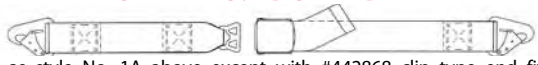
STYLE NO. 1A SEAT BELT

Most popular metal-to-metal seat belt. This 56" adjustable seat belt offers a heavy-duty combination of an all-nylon 2" wide herringbone webbing and a metal-to-metal "quick release" buckle. Buckle mates with harness adapters (Shoulder Harness Items 3B or 3C) for safety belt/harness set or use belt alone. The end fittings for each side of the lap belt have a .325 in. dia. hole which allows for a fastener/bolt to slide through, depending on the design of the aircraft/aircraft seat is where it attaches.

P/N	Color	Price
13-00201	Black	$49.75
13-00202	Brown	$49.75
13-00203	Tan	$49.75
13-00204	Navy Blue	$49.75

P/N	Color	Price
13-00205	Royal Blue	$49.75
13-00206	Gray	$49.75
13-00207	Red	$49.75
13-00210	Green	$49.75

STYLE NO. 1B SEAT BELT

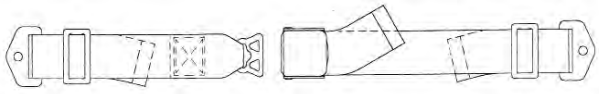


Same as style No. 1A above except with #442868 clip type end fittings. The end fitting hooks have spring loaded clips that allows each side of the lap belt to clip on to an existing fastener or rod. When the clip is closed the effective hole dia. for both these belts is .37 in.

P/N	Color	Price
13-00301	Black	$56.75
13-00302	Brown	$56.75
13-00303	Tan	$56.75
13-00304	Navy Blue	$56.75

P/N	Color	Price
13-00305	Royal Blue	$59.75
13-00306	Gray	$56.75
13-00307	Red	$56.75
13-00310	Green	$56.75

STYLE NO. 2A SEAT BELT

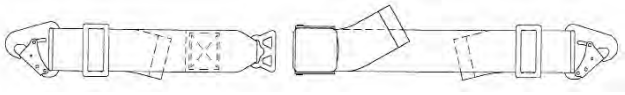


If belts are needed to replace worn ones in an aircraft in which the attachment fittings have been installed and approved, it is customary to install belts with a slide adjustment bar which permits weaving webbing through existing fitting and through bar for secure installation. Drawing shows correct method of lacing the webbing through bar. Belt is 56" long x 2" wide.The end fittings for each side of the lap belt have a .325 in. dia. hole which allows for a fastener/bolt to slide through, depending on the design of the aircraft/aircraft seat is where it attaches.

P/N	Color	Price
13-00401	Black	$59.75
13-00402	Brown	$59.75
13-00403	Tan	$59.75
13-00404	Navy Blue	$59.75

P/N	Color	Price
13-00405	Royal Blue	$59.75
13-00406	Gray	$59.75
13-00407	Red	$59.75
13-00410	Green	$59.75

STYLE NO. 2B SEAT BELT



Same as style No. 2A above except with #442868 clip type end fittings. Standard equipment in White Lightning aircraft. Black only.

P/N 13-19601.....$59.75

SEAT BELT HARDWARE

CLIP TYPE
END FITTING
P/N 442868 (Steel)
$22.70 Ea.

SLIDE
ADJUSTER
P/N 442663
$5.70 Ea.

TRIANGULAR
END FITTING
P/N 13-04101
$14.80 Ea.

STYLE NO. 2C TWO PERSON SEAT BELT

Two Person Seat Belt - Although FAA requires that each person be provided an individual seat belt, some early aircraft were licensed using an extra-long belt in the rear seat to accommodate two people. If it is not possible to modify the aircraft to accept two belts, a two person belt is permissible. Same metal-to-metal belt as illustrated in Figure 1 but rated at 3000 lbs. test. Length 60". Advise if different length is required. Two-person belts with slide bars not acceptable by FAA. The 3" wide belt and 2" wide harness are of heavy-duty nylon webbing.

P/N	Color	Price
13-00501	Black	$56.75
13-00502	Brown	$58.50
13-00503	Tan	$58.50
13-00504	Navy Blue	$58.50
13-00505	Royal Blue	$58.50
13-00506	Gray	$58.50
13-00507	Red	$49.50
13-00510	Green	$58.50

STYLE NO. 4 – MILITARY STYLE SEAT BELT AND SHOULDER HARNESS COMBINATION

Harness has forged steel belt buckles permitting "one-stroke" release from both belt and harness. Stocked in Black.

Complete Set(Black)..... P/N 13-01000 .....$233.95
Certified Belt Only ..... P/N 13-01100 .....$166.90
Harness Only(Black) ..... P/N 13-01200 ..... $67.85

OTHER COLORS

	Olive Green	Price	Royal Blue	Price	Neutral	Price
Set Kit	13-04105	$229.95	13-04124	$233.95	13-04118	$262.95
Belt	13-04106	$164.95	13-04125	$164.95	13-04119	$189.99
Harness	13-04107	$65.75	13-04126	$69.85	13-04120	$73.75
	Silver Grey	Price	Brown	Price	Navy Blue	Price
Set Kit	13-04108	$231.95	13-04127	$239.95	13-04130	$239.95
Belt	13-04109	$164.95	13-04128	$167.95	13-04131	$167.95
Harness	13-04110	$67.85	13-04129	$73.75	13-04132	$79.95
	Red	Price	Tan	Price		
Set Kit	13-04121	$230.95	13-04133	$229.95		
Belt	13-04122	$164.95	13-04134	$164.95		
Harness	13-04123	$66.90	13-04135	$65.75		

STYLE NO. 5 SEAT BELT/HARNESS SET FOR HOMEBUILTS

Specially designed for the VariEze, this popular combination is also used in the Long-EZ, Quickie, Q2, Cozy, Sea Hawk and several other homebuilts. The belts are made to fit snugly, and the aluminum end fittings save weight. Order two sets for all above aircraft except Quickie which uses one set. Not FAA approved for certificated aircraft.

P/N 13-01300 ..... $106.85 Set

PIPER SEAT BELT DECAL SETS

This is a beautiful decal set for all the Piper Seat Belt Buckles. The seat belt buckles on Piper's are always being dinged and pitted and nothing looks worse than to have a beautiful interior with ugly belt buckles. With our new decals, the ugly belt buckles become an attraction instead of an eyesore.

Four Place Piper Set P/N 05-02448.....$22.70 Set
Six Place Piper Set .....P/N 05-02449.....$33.50 Set

NOTE: SEE NEXT PAGE FOR SHOULDER HARNESSES COMPATIBLE WITH THESE SEAT BELTS.

AP

SEAT BELTS & SHOULDER HARNESSES

AP

STYLE NO. 3A "Y" SHOULDER HARNESS

Harness with stitched-in webbing loops for use with any 2" wide seat belt. Belt simply slides through loops and secures. Harness is "Y" type with one attachment fitting furnished.

Black Only ..... P/N 13-00601 ..... $54.50

STYLE NO. 3B "Y" SHOULDER HARNESS

Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness is "Y" type with one attachment fitting furnished. Lift buckle to release belt and harness. Order belt separately.

P/N	Color	Price
13-00701	Black	$86.75
13-00702	Brown	$84.75
13-00703	Tan	$84.75
13-00704	Navy Blue	$84.75

P/N	Color	Price
13-00705	Royal Blue	$84.75
13-00706	Gray	$84.75
13-00707	Red	$84.75
13-00710	Green	$84.75

STYLE NO. 3C TWO STRAP SHOULDER HARNESS

Harness with two chrome-plated steel adapters on front webbing extensions which mate with metal-to-metal buckle for safety belt/harness set. Harness has two separate straps with two attachment fittings furnished. Lift buckle to release belt and harness. Order belt separately.

P/N	Color	Price
13-00801	Black	$81.65
13-00802	Brown	$86.80
13-00803	Tan	$81.65
13-00804	Navy Blue	$81.65

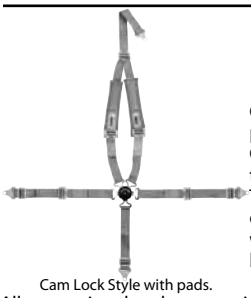
P/N	Color	Price
13-00805	Royal Blue	$86.75
13-00806	Gray	$81.65
13-00807	Red	$81.65
13-00810	Green	$81.65

CS-647 Fittings - Left & Right (As used on 3B & 3C harnesses)
P/N 13-03957 ..... $46.50 /set

PLEASE VISIT OUR WEBSITE FOR A DETAILED DRAWING OF THESE SHOULDER HARNESSES.

NOTE: These shoulder harnesses mate with #1 and #2 seat belts on the previous page but the harnesses are not FAA approved for certificated aircraft. Only the seat bellts carry FAA approval.

CROW RESTRAINT SYSTEMS FOR RV AIRCRAFT


Cam Lock Style with pads.

Crow restraint systems feature 5 attach points and are available in Latch & Link or Cam Lock versions. For RV series aircraft, the Cam Lock version is most popular. These restraint systems are available with or without 2 inch sewn-on shoulder pads, which are the same color as the rest of the belts and harness.

All mounting brackets require 7/16" bolts for installation Available in black, grey, blue, or red. Specify aircraft model (RV-7, 7A, etc.) and tandem or side-by-side seating when ordering. Not FAA approved. For experimental aircraft only

Crow Cam Lock Restraint RV-6A with Shoulder Pads

Our Part #	Part #	Color	RV-6A RV-7A RV-9A	Seat Belt	Harness	Price
05-04951	40002P	Red	5-Way Restraint 50" Seat Belt Pull Up Adj. With Y-Type Harness & Anti Submarine belt	Bolt-in	Bolt-in	$174.75
05-04950	40003P	Blue		Bolt-in	Bolt-in	$174.75
05-04948	40004P	Black		Bolt-in	Bolt-in	$174.75
05-04949	40007P	Gray		Bolt-in	Bolt-in	$174.75

Crow Cam Lock Restraint RV-8A with Shoulder Pads

Our Part #	Part #	Color	RV-8A	Seat Belt	Harness	Price
05-06422	40012P	Red	5-Way Restraint 50" Seat Belt Pull Up Adj. Individual Harness & Anti-Submarine Belt Front Seat Harness Wrap Around Back Seat Harness Bolt-in	Bolt-in	Bolt-in	$174.75
05-06423	40013P	Blue		Bolt-in	Bolt-in	$174.75
05-06424	40014P	Black		Bolt-in	W/A	$174.75
05-06425	40017P	Gray		Bolt-in	Bolt-in	$174.75

Crow Cam Lock Restraint RV-10A with Shoulder Pads

Our Part #	Part #	Color	RV-10A	Seat Belt	Harness	Price
05-06430	40022P	Red	5-Way Restraint 50" Seat Belt Pull Up Adj. Individual Harness & Anti-Submarine Belt Front Seat Harness Mount on Canopy with bent 45 degree bolt in ends.	Bolt-in	Bolt-in	$174.75
05-06431	40023P	Blue		Bolt-in	Bolt-in	$174.75
05-06432	40024P	Black		Bolt-in	Bolt-in	$174.75
05-06433	40027P	Gray		Bolt-in	Bolt-in	$174.75

CHRISTEN 820 AEROBATIC SEAT BELT/HARNESS SYSTEM

The Christen 820 Seat Belt/Harness System was designed specifically for use in unlimited-class competition aerobatic flying. The System holds the pilot firmly in the aircraft seat during high negative-g maneuvers and supports the body laterally against side forces during tumbling, slipping or knife-edge flight. Although of extremely light-weight design, all components are of the highest aviation quality, and the system is manufactured in full compliance with the requirements of FAA TSO C22f. The basic Christen 820 System consists of a black shoulder harness, lap belt and crotch strap. Also available are a lap pad, a secondary seat belt for back-up safety, and accessory hardware to facilitate installation in a variety of aircraft. The lap belt, crotch strap, and shoulder harness are locked in a single buckle with flush latch which provides positive retention. All belts are released quickly and simultaneously by simply lifting the edge of the buckle latch. Standard end fittings attach to airframe brackets using 5/16 inch bolts (not included). All metal components bright chrome plated. All webbing 2 inches wide, black color. Includes detailed product manual. Meets FAA TSO C22f, 180 lb. Tensile. Maximum extended lengths of belt assemblies from end fitting to connector are: shoulder harness 50 inches, buckle lap belt 30 inches, connector lap belt 32 inches, crotch strap 26 inches. Weight 2.9 lb.

Seat Belt/Harness System ..... P/N 05-01133 ..... $1,025.00
Lap Pad (Black) ..... P/N 05-01134 ..... $199.95
Crotch Strap Connector for 7/8" Tubing ..... P/N 05-01135 ..... $77.75
Crotch Strap Connector for 1" Tubing ..... P/N 05-01136 ..... $83.75
Seat Belt Brochure ..... P/N 05-01137 ..... $0.95

CESSNA APPLIQUES

P/N 09-03759 P/N 09-03762 P/N 09-03763 P/N 09-03764

Cessna Seatbelt Buckle Applique ..... P/N 09-03759 ..... $9.80
Cessna SkyHawk II Yoke Button ..... P/N 09-03762 ..... $20.95
Cessna Skyhawk Yoke Button ..... P/N 09-03763 ..... $20.85
Cessna Yoke Button ..... P/N 09-03764 ..... $21.70

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Prices Subject to Change Without Notice

SEAT BELTS & SHOULDER HARNESSES

AERO-TUFF BELT & HARNESSES

H Loop Style

Y Fit Style

Aero-Tuff lap belts and shoulder harnesses are made from certified two inch wide webbing, all steel hardware pieces are chrome or cadmium plated. The end fitting have 5/16" bolt holes. Aero-Tuff restraint systems comply with ASTM Light Sport Aircraft standards. The units are for use in Light Sport, experimental and ultralight aircraft. These restraint systems shall not be used in certified aircraft.

Description	Part No.	Price
H Loop Black	05-04694	$102.75
H Loop Grey	05-04695	$100.85
H Fit Black	05-04696	$111.75
H Fit Grey	05-04697	$118.75
Y Fit Black	05-04698	$107.75
Y Fit Grey	05-04699	$107.75

SPECIAL ORDER COLORS ARE AVAILABLE. Use the part numbers listed below and specify color choice of: Red, Tan, Brown, Dark Brown, Dark Blue, Military Green, Charcoal, or White.

Description	Part No.	Price
H Loop Special Color	05-04746	$154.75
H Fit Special Color	05-04747	$166.75
Y Fit Speical Color	05-04748	$157.75

SEAT BELTS FOR VANS RV AIRCRAFT

The Aero-Tuff restraint system for the RV 3, 4,6,7, 8, 9, 10 and 12 features adjustable web straps and a rotary buckle for one twist release. Each unit is custom fit for the specific model of RV aircraft. Each strap is adjustable with an end fitting. The strap permanently attached to the rotary buckle is on the crotch belt. The restraint units comply with ASTM light sport aircraft standards. The five-point restraint system is rated at 1800 lbs. The units are not for use in type certified aircraft.

Description	Part No.	Price
RV 4 8 Seat Belt Front Crotch Black	13-07029	$257.95
RV 3 Seat Belt Crotch Black	13-07030	$258.95
RV 3 Seat Belt Crotch Gray	13-07031	$258.95
RV 4 Rear Seat Belt Crotch Black	13-07032	$258.95
RV 4 Rear Seat Belt Crotch Gray	13-07033	$258.95
RV 8 Rear Seat Belt Crotch Black	13-07034	$259.95
RV 8 Rear Seat Belt Crotch Gray	13-07035	$258.95
RV-4 Front Seat Belt Crotch Black	13-07087	$257.95
RV-4 Front Seat Belt Crotch Gray	13-07088	$257.95
RV-8 Front Seat Belt Crotch Black	13-07089	$257.95
RV-8 Front Seat Belt Crotch Gray	13-07090	$257.95
RV-6 Seat Belt Crotch Gray	13-07091	$273.95
RV-6 Seat Belt Crotch Black	13-07092	$273.95
RV-7 Seat Belt Crotch Black	13-07093	$285.95
RV-7 Seat Belt Crotch Gray	13-07094	$285.95
RV-9 12 Seat Belt Crotch Gray	13-07095	$298.95
RV-9 12 Seat Belt Crotch Black	13-07096	$273.95
RV-10 Rear Seat Belt Crotch Black	13-07097	$275.95
RV-10 Rear Seat Belt Crotch Gray	13-07098	$273.95
RV-10 Front Seat Belt Crotch Gray	13-07099	$273.95
RV-10 Front Seat Belt Crotch Black	13-07101	$273.95

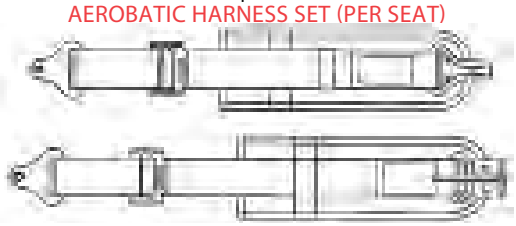
HOOKER CUSTOM HARNESSES

SPORT HARNESS SET (PER SEAT)

The popular Sport Harness kit from Hooker is ideal for a wide variety of experimental aircraft. The set includes one 1-3/4" military style seat belt, one 1-3/4" military style shoulder harness, one 1-3/4" crotch strap, one pad set and yoke assembly for front seat.

With pad set ..... P/N 13-00925 ..... $273.95
With pad rear ..... P/N 13-08054 ..... $249.95
Without crotch strap ..... P/N 13-00930 ..... $224.95

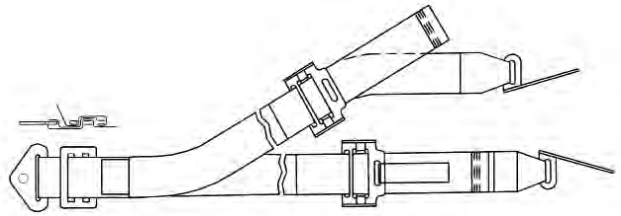
AEROBATIC HARNESS SET (PER SEAT)



The Hooker Aerobatic Harness kit is very popular with sport and competitive aerobatic pilots. The set includes two 1-3/4" military style seat belt, one 1-3/4" military style shoulder harness, one 1-3/4" crotch strap, one pad set and yoke assembly for front seat.
Note: The aerobatic is the same with the exception of the ratchet being replaced with a standard adjuster.

With one pad set ..... P/N 13-00935 ..... $332.95
With stainless ratchet tightener ..... P/N 13-00950 ..... $442.00

HOOKER CESSNA FIXED SHOULDER HARNESS KIT (PER SEAT)



This set includes new double adjustable seat belt, shoulder harness, installation kit with necessary hardware, brackets and the STC paperwork. The STC currently covers installation in Cessna models 120, 140, 140A, 150, 152, 170, 172, 175, 180, 182 (except R182 and TR 182), 185, 205, 206, and 210 (through F model). Installation of this set does not require drilling holes in the external skin or the removal of the wings. The installation is accomplished from within the airplane and installation time usually runs 60-90 minutes with the headliner removed. Pads are not included. ..... P/N 13-00955 ..... $244.95

NOT AVAILABLE IN THE REAR. SPECIFY AIRCRAFT TYPE & COLORS OF WEBBING WHEN ORDERING.

COLORS AVAILABLE (HOOKER)

2" Webbing: Red, Dragon Red, Burgundy, Orange, Air Force Gold, Olive Drab, Sage Green, Baby Blue, Royal Blue, Navy Blue, Tan, Beige, Silver Gray, Dark Gray, Black
1-3/4" Webbing: Red, Air Force Gold, Kelly Green, Olive Drab, Sage Green, Jade Green, Royal Blue, Navy Blue, Purple, Silver Gray, Dark Gray, Tan, Black
Pad Fabric: Red, Burgundy, Navy Blue, Royal Blue, Lemon Yellow, Air Force Gold, Dark Gray, Olive Drab, Sage Green, Silver Gray, Pink, Turquoise, Orange, Green, Jade, Lavender, Purple, Tan, Brown, Black
Trim: Red, Burgundy, Navy Blue, Royal Blue, Lemon Yellow, Air Force Gold, Dark Gray, Olive Drab, Sage Green, Silver Gray, Pink, Turquoise, Orange, Green, Jade, Brown, Lavender, Purple, Tan, Black

SPECIFY WEBBING,(PAD TRIM AND PAD COLORS WHERE APPLICABLE) WHEN ORDERING ALL HOOKER HARNESS PRODUCTS

PIPER SEATBELT BUCKLE PLACARD

This set of two beautiful seat belt placards installs on the buckle to add beauty and class to your seat belts. Each placard is silk-screened on chrome metallic Mylar and coated in a hard scratch-resistant clear epoxy that looks like crystal glass. They install quickly and easily with a special pressure-sensitive bonding adhesive.

Piper Seatbelt Buckle Placard (Qty. 2) ..... P/N 05-03638 ..... $8.95
Piper Seatbelt Buckle Placard (Qty. 4) ..... P/N 05-03639 ..... $18.75
Piper Seatbelt Buckle Placard (Qty. 6) ..... P/N 05-03640 ..... $27.75

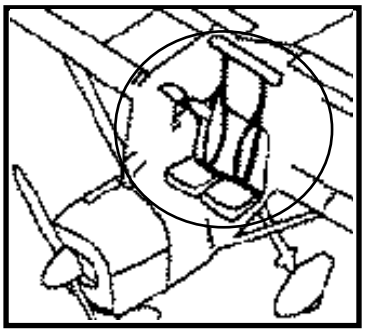
AP

CESSNA & PIPER SEAT BELTS & HARNESSES

BECAUSE WE KNOW SAFETY IS A PRIORITY IN YOUR AIRPLANE!

FAA Approved shoulder restraint systems in your aircraft provide the best possible safety for your crew and passengers. We developed these affordable systems for production aircraft in cooperation with the FAA, therefore each H-600 series
comes with an FAA STC/PMA. Our high quality belts come in a full array of colors. The kits include one standard belt with a 3-bar slide (retain your present fitting), one "Y" style shoulder harness (with attaching hardware) and installation instructions.
Our line of seat belts and harnesses is constructed with the highest quality materials and with careful attention to workmanship. Each installation kit shown includes one belt, one harness, attaching hardware and installation instructions. The standard seat belt with 3-bar slide and the Y-style shoulder harness included is shown and described further on page 179.

CESSNA HARNESS KITS



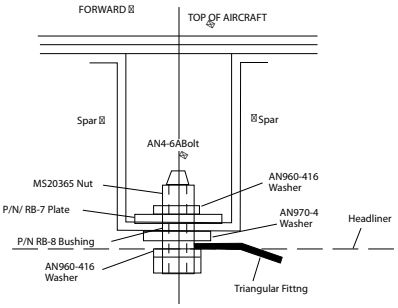
Harness/Seat Belt Installation Kits

Only $169.95 each

FAA Approved

FAA Approved

Typical Installation for Cessna Aircraft



Choose from the following kits for your FAA/STC/PMA approved installation For Cessnas!

Color	CESSNA 120/140	CESSNA 150A-H, J-M A152/152	CESSNA 170A & B	CESSNA 172, A-I,K,L-N, P F172N, P	CESSNA 175A,B,C	CESSNA 180 A-H, J, K	182, A-H J-N, P-R T,TR182	CESSNA 185A-E A185E	CESSNA 206, U206A-F TU206A-F	CESSNA 207, 207A T207, T207A
Black	13-00901-1	13-00902-1	13-00903-1	13-00904-1	13-00905-1	13-00906-1	13-00907-1	13-00908-1	13-00909-1	13-00910-1
Brown	13-00901-3	13-00902-3	13-00903-3	13-00904-3	13-00905-3	13-00906-3	13-00907-3	13-00908-3	13-00909-3	13-00910-3
Red	13-00901-5	13-00902-5	13-00903-5	13-00904-5	13-00905-5	13-00906-5	13-00907-5	13-00908-5	13-00909-5	13-00910-5
Navy	13-00901-2	13-00902-2	13-00903-2	13-00904-2	13-00905-2	13-00906-2	13-00907-2	13-00908-2	13-00909-2	13-00910-2
Royal Blue	13-00901-4	13-00902-4	13-00903-4	13-00904-4	13-00905-4	13-00906-4	13-00907-4	13-00908-4	13-00909-4	13-00910-4
Tan	13-00901-6	13-00902-6	13-00903-6	13-00904-6	13-00905-6	13-00906-6	13-00907-6	13-00908-6	13-00909-6	13-00910-6
Silver Gray	13-00901-8	13-00902-8	13-00903-8	13-00904-8	13-00905-8	13-00906-8	13-00907-8	13-00908-8	13-00909-8	13-00910-8
Olive Green	13-00901-7	13-00902-7	13-00903-7	13-00904-7	13-00905-7	13-00906-7	13-00907-7	13-00908-7	13-00909-7	13-00910-7

PIPER HARNESS KITS

FAA Approved!

PA-11 Harness Kits

	Front $169.95 ea.	Rear $186.95 ea.
Black	13-00913-1	13-00914-1
Navy	13-00913-2	13-00914-2
Brown	13-00913-3	13-00914-3
Royal Blue	13-00913-4	13-00914-4
Red	13-00913-5	13-00914-5
Tan	13-00913-6	13-00914-6
Olive Green	13-00913-7	13-00914-7
Silver Gray	13-00913-8	13-00914-8

PA-18 Harness Kits

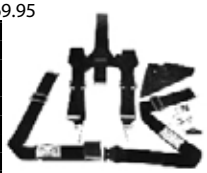
	Front $169.95 ea.	Rear $229.95 ea.
Black	13-00921-1	13-00922-1
Navy	13-00921-2	13-00922-2
Brown	13-00921-3	13-00922-3
Royal Blue	13-00921-4	13-00922-4
Red	13-00921-5	13-00922-5
Tan	13-00921-6	13-00922-6
Olive Green	13-00921-7	13-00922-7
Silver Gray	13-00921-8	13-00922-8

PA-20 Front Seat Harness Kits ea.$169.95

Black	13-00915-1
Brown	13-00915-3
Red	13-00915-5
Navy	13-00915-2
Royal Blue	13-00915-4
Tan	13-00915-6
Silver Gray	13-00915-8
Olive Green	13-00915-7

PA-22 S-150, 160, PA-22/22-108, 135, 150, 160,
Front Seat Harness Kits ea.$169.95

Black	13-00916-1
Brown	13-00916-3
Red	13-00916-5
Navy	13-00916-2
Royal Blue	13-00916-4
Tan	13-00916-6
Silver Gray	13-00916-8
Olive Green	13-00916-7



PA-28 Front Seat Harness Kits pr. $497.00
Includes seat belts, harnesses and hardware for front seats.

Black	13-00917-1
Navy	13-00917-2
Brown	13-00917-3
Royal Blue	13-00917-4
Red	13-00917-5
Tan	13-00917-6
Olive Green	13-00917-7
Silver Gray	13-00917-8

For ceiling vent system, modification may be needed to the existing system for our seat belt/shoulder harness installation. Drawings & instructions are unavailable for this modification.

AERONCA HARNESS KITS

Front $169.95 ea.

Black	13-00918-1
Navy	13-00918-2
Brown	13-00918-3
Royal Blue	13-00918-4
Red	13-00918-5
Tan	13-00918-6
Olive Green	13-00918-7
Silver Gray	13-00918-8

FAA Approved!

Rear $219.95 ea.

Black	13-00919-1
Navy	13-00919-2
Brown	13-00919-3
Royal Blue	13-00919-4
Red	13-00919-5
Tan	13-00919-6
Olive Green	13-00919-7
Silver Gray	13-00919-8

Note: Not approved for AC15 Aeronca

BEECH HARNESS KITS

35 Series A-G, R

Pilot $196.95 ea.

Black	13-00911-1
Navy	13-00911-2
Brown	13-00911-3
Royal Blue	13-00911-4
Red	13-00911-5
Tan	13-00911-6
Olive Green	13-00911-7
Silver Gray	13-00911-8

FAA Approved!

Co - Pilot $249.95 ea.

Black	13-00912-1
Navy	13-00912-2
Brown	13-00912-3
Royal Blue	13-00912-4
Red	13-00912-5
Tan	13-00912-6
Olive Green	13-00912-7
Silver Gray	13-00912-8

FAA Approved!

STINSON HARNESS KITS

Stinson 108-1, 2, 3 $169.95 each

Black	13-00920-1
Navy	13-00920-2
Brown	13-00920-3
Royal Blue	13-00920-4
Red	13-00920-5
Tan	13-00920-6
Olive Green	13-00920-7
Silver Gray	13-00920-8

FAA Approved!

SEAT BELTS

FAA Approved!

Standard TSO'd. Standard metal to metal seat belt retrofits most popular production aircraft. High-strength nylon webbing, fully tested belt is rated at 1500 lbs. Belt features standard metal to metal type buckle and meets the latest FAA requirements. Adjusts from 13" to 62" in length.

Color	3-BAR SLIDE (Retain your present end fittings.) ea. $76.00	TRIANGULAR & 3-BAR SLIDE ea. $68.75	QUICK DISCONNECT & 3-BAR SLIDE ea. $93.75
Black	05-06225-2	05-06226-2	05-06227-2
Navy	05-06225-8	05-06226-8	05-06227-8
Brown	05-06225-7	05-06226-7	05-06227-7
Royal Blue	05-06225-6	05-06226-6	05-06227-6
Red	05-06225-5	05-06226-5	05-06227-5
Tan	05-06225-9	05-06226-9	05-06227-9
Olive Green	05-06225-3	05-06226-3	05-06227-3
Silver Gray	05-06225-4	05-06226-4	05-06227-4

Y-TYPE SHOULDER HARNESS

FAA Approved!

Hardware mates to buckle of model Cat. No. H-701 Series and most American Safety models. Retain your own aircraft fittings. Longest length, 79"; Shortest length, 29".1 lb. ea. ..... $79.95 ea.

Color	Part No.
Black	05-06228-2
Navy	05-06228-8
Brown	05-06228-7
Royal Blue	05-06228-6
Red	05-06228-5
Tan	05-06228-9
Olive Green	05-06228-3
Silver Gray	05-06228-4

TSO'd SEATBELTS PMA'd SHOULDER HARNESSES

SEAT BELTS & "Y" HARNESS COMBINATION

Set includes one Cat. No. H-701 series seat belt with 3 bar slide and one Cat. No. H-702 series "Y" type shoulder harness with metal to metal hardware. Hardware not included. Retain your own aircraft fittings..... $169.95 each set

Color	Part No.
Black	05-06236-2
Navy	05-06236-8
Brown	05-06236-7
Royal Blue	05-06236-6
Red	05-06236-5
Tan	05-06236-9
Olive Green	05-06236-3
Silver Gray	05-06236-4

END FITTINGS

Experimental Only.

P/N 05-06239

P/N 05-06237

P/N 05-06240

P/N 05-06241

Description	Part No.	Price
3-Bar Slide	05-06239	$6.60
Quick Disconnect Fitting	05-06237	$10.50
Triangular End Fitting	05-06240	$11.70
2" Chrome Seat Belt Tip Ends	05-06241	$4.35

2" SEAT BELT EXTENSIONS

Mates with Wag-Aero's seat belts only. 24" long. Experimental Only.

$39.90 ea.	Part No.	$39.90 ea.	Part No.
Black	05-06230-2	Red	05-06230-5
Navy	05-06230-8	Tan	05-06230-9
Brown	05-06230-7	Olive Green	05-06230-3
Royal Blue	05-06230-6	Silver Gray	05-06230-4

Hardware Not Included

PIPER SEAT BELT DECAL

The placard is silk-screened on chrome metallic Mylar and coated in a hard, scratch-resistant clear epoxy that looks like crystal glass. Easy to install with a special pressure-sensitive bonding adhesive. Once installed, they will not come off.

P/N 05-06242..... $12.50 pr.

AEROBATIC/MILITARY

FULL RESTRAINT

The ultimate for aerobatic competition consists of 3" TSO'd lap belt with lap restraint pads, 2" shoulder harness with shoulder harness restraint pads, plus a fully adjustable crotch strap. Unique features allow for quick comfort adjustment. Positive lock buckle with quick release. Safety and comfort primary in design. Retain your own aircraft fittings. Black. 1500 lb. rating. Experimental Only.

Complete System

P/N 05-06238 ..... $366.00

FAA Approved!

MILITARY STYLE SEAT BELT

TSO'd. 3" metal to metal, heavy duty construction with military style quick release buckle for convenience. Extra strength webbing provides increased durability. Complete with triangle end fittings to accommodate most aircraft. Retain your own aircraft fittings. Adjusts from 33-1/2" to 49-1/2" in length..... $164.95 ea.

Color	Part No.
Black	13-01100
Olive Green	13-04106
Neutral	13-04119
Silver Gray	13-04109

Color	Part No.
Red	13-04122
Royal Blue	13-04125
Brown	13-04128
Navy	13-04131
Tan	13-04134

AEROBATIC SHOULDER HARNESSES

Metal fitting for attachment to seat belt buckle. Easily adjustable, harness combines with the 3" aerobatic seat belt for a matched set. Retain your own aircraft fittings. Experimental Only.

Divided Harnesses	Part No.
Black	05-06232-2
Olive Green	05-06232-3
Neutral	05-06232-1
Silver Gray	05-06232-4
Red	05-06232-5
Royal Blue	05-06232-6
Brown	05-06232-7
Navy	05-06232-8
Tan	05-06232-9

Y-Style Harnesses	Part No.
Black	13-01200
Olive Green	13-04107
Neutral	05-06234-1
Silver Gray	13-04110
Red	13-04123
Royal Blue	05-06234-6
Brown	13-04129
Navy	13-04132
Tan	13-04135

ADJUSTABLE CROTCH STRAP

Experimental Only

Color	Part No.	Price
Black	05-06233-2	$34.65
Navy	05-06233-8	$34.65
Brown	05-06233-7	$34.65
Royal Blue	05-06233-6	$34.65
Red	05-06233-8	$34.65
Tan	05-06233-9	$46.25
Silver Gray	05-06233-4	$46.25
Neutral	05-06233-1	$34.65
Lap Restraint Pads (Black)	13-10271	$26.75/pr.
Shoulder G-Restraint Pads (Black)	13-10272	$26.75/pr.

SEAT BELT WEBBING

Minimum order: 5 yards.

Meets AN, MS, NAS, or Mil. Spec.

	2" Webbing		3" Webbing	
Color	Part No.	Price/yd	Part No.	Price/yd
Black	05-06224-2	$7.95	05-06223-2	$9.70
Navy	05-06224-8	$7.75	05-06223-8	$9.70
Brown	05-06224-7	$7.95	05-06223-7	$9.70
Royal Blue	05-06224-6	$8.00	05-06223-6	$9.70
Red	05-06224-5	$7.85	05-06223-5	$9.70
Tan	05-06224-9	$7.95	05-06223-9	$9.70
Olive Green	05-06224-3	$7.95	05-06223-3	$9.70
Silver Gray	05-06224-4	$7.95	05-06223-4	$9.70
Neutral	---	---	05-06223-1	$9.70

AP

STC'D SEAT BELTS & SHOULDER HARNESSES

ALPHA AVIATION RESTRAINT SYSTEMS

Note: FAA/ STC/ PMA Installation kits include complete new TSO-C114 belt assemblies for each pilot position. FAA/ STC/ PMA Installation kits include all hardware to upgrade both pilot positions. OEM quality, AMSAFE Incorporated belt assemblies meeting TSO-C114. Standard colors are black, gray & fawn. For custom colors, please order the color swatches (P/N 05-03146). STC sets are for two seats; OEM sets are for one seat..

BEECHCRAFT STC SHOULDER HARNESS KITS

3 Point Diagonal Systems

* Complete New Belt Assemblies
* Shoulder and Lap Belts for 2 Seats-Pilot & Co-Pilot
* All Required Hardware
* Instruction Manual
* Supplemental Type Certificate

STC, 3RS-114FS Fixed Restraint, Kit ..... P/N 05-03127 ..... $839.00
STC, 3RS-114IR Inertial Reel, Kit ..... P/N 05-03128 ..... $1,139.00
Beechcraft Replacement Rear Lap Belt ..... P/N 05-06886 ..... $169.90

BEECHCRAFT APPROVED MODEL GUIDE							
35	H35	36	35-33	95	B95	A56TC	58
35R	J35	A36	35-A33	95-5	B95A		58A
A35	K35		35-B33	95-A55	D95A		
B35	M35		35-C33	95-B55			
C35	N35		35-C33A	95-B55A	D55		
D35	P35			95-B55B	D55A		
E35	S35		E33	95-C55			
F35	V35		E33A	95-C55A	E55		
G35	V35A		E33C		E55A		
	V35B				E95		
			F33				
			F33A				
			F33C				
			G33				

CESSNA STC SHOULDER HARNESS KITS

Cessna Shoulder Harness Kits

* New Belt Assemblies -Shoulder & Lap Belts for Pilot & Co-Pilot
* All Required Hardware
* Instruction Manual
* Supplemental Type Certificate

STC, C100-114IR, Front Inertial Reel, Kit ..... P/N 05-03131 ..... $939.00
Cessna STC, C100-114FS,
Front Fix Strap, Kit ..... P/N 05-04193 ..... $739.00

CESSNA OEM REPLACEMENT BELTS

* Replace Your Existing Shoulder Harnesses
* Complete New Belt Assemblies - Shoulder and Lap Belts

Cessna 100/200 OEM Replacement
Front, Fixed Strap (Sold as each) ..... P/N 05-03132 ..... $294.95
Cessna 100/200 OEM
Replacement Inertial Reel, Upgrade ..... P/N 05-03133 ..... $389.00
Cessna OEM Replacement (all models)
Rear Lap Belts (Sold as each) ..... P/N 05-06887 ..... $84.95

Cessna 100 Model List						
Original Type Certificate #	Aircraft Models					
A-799	170	170A	170B			
3A12	172	172A	172B	172C	172D	172E
	172F	172G	172H*	172I	172K	
*172F (USAFT41A) *172H (USAFT41A)						
3A17	175	175A	175B	175C	P172D	
5A6	180	180S	180B	180C	180D	180E
	180F	180G	180H			
3A13	182	182A	182B	182C	182D	182E
	182F	182G	182H	185J	182K	182L
	182M	182N	182P			
3A24	185	185A	185B	185C	185D	185E
	A185E	A185F				

177, 177A NEEDING SHOULDER HARNESS INSTALLATION KIT

177B Replacement Belt Assemblies OEM Replacement, 3-Point Restraint Systems

* Replace Your Existing Shoulder Harnesses
* Complete New Belt Assemblies - Shoulder and Lap Belts

Cessna 177/177A Minor Change Kit ..... P/N 05-03135 ..... $20.00

PA 23 STC APPROVED MODELS		
PA-23	PA-23-160	PA23-235
PA-23-250	PA-E23-250	
PA28/32 STC APPROVED MODELS		
PA28-140	PA28R-180	PA32-260
PA28-150	PA28R-200	PA-32-300
PA28-160		
PA28-180	PA28S-160	PA32S-300
PA28-235	PA28S-180	

MOONEY SHOULDER HARNESS INSTALLATION

3 Point Diagonal Systems

* M20, A, B, C, D, E, F, G 3 Point Diagonal Harness Installation
* M20J Replacement Seat Belts
* Complete New Belt Assemblies - Shoulder and Lap Belts

3-Point System "Minor Change Kit" M20 A-G (Includes the Required Hardware for Two Pilot Positions) ..... P/N 05-03139 ..... $35.00
Mooney M20 Inertial Reel Upgrade
Front Inertial Reel 1 ..... P/N 05-06891 ..... $389.00
Mooney M20 Replacement
Front Fixed Strap ..... P/N 05-06890 ..... $290.95
Mooney Replacement Rear Lap Belt ..... P/N 05-06888 ..... $84.95

PIPER STC SHOULDER HARNESS KITS

3 Point Diagonal Systems

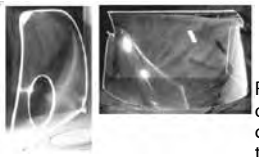
* Complete New Belt Assemblies
* Shoulder and Lap Belts for 2 Seats - Pilot & Co-Pilot
* All Required Hardware
* Instruction Manual
* Supplemental Type Certificate

STC, PA23-114IR Front Inertial Reel, Kit ..... P/N 05-03141 ..... $939.00
Piper STC, PA28-1141R Front
Inertial Reel, Kit ..... P/N 05-03143 ..... $1,039.00
Piper OEM Replacement Front Inertial Reel ..... P/N 05-04194 ..... $389.00
Piper Replacement All Model Rear Lap Belt ..... P/N 05-03134 ..... $84.95
Piper STC, PA23-114FS Front Fixed Strap, Kit ..... P/N 05-03140 ..... $739.00
Piper STC, PA24-114FS Front Fixed Strap, Kit ..... P/N 05-04928 ..... $839.00
Piper STC, PA24-114IR Front Inertial Reel, Kit ..... P/N 05-04929 ..... $1,039.00
Piper STC, PA28-114FS Front Fixed Strap, Kit ..... P/N 05-04930 ..... $839.00

COLOR SWATCHES

Color swatches for your desired color group are available to be shipped to you via priority mail. When you have chosen your color, you can place your order by phone (1-877-4-SPRUCE) or order online. Then return the color swatches to Aircraft Spruce and we will credit you the $25.00 charge when you place your order for seatbelts/harnesses. For domestic orders only. International customers, please call for pricing. Custom color belts/ harnesses are special order and are non-returnable. Lead time is three weeks for a custom color order.

P/N 05-03146 ..... $25.00



L&P AERO WINDSHIELDS
COMPLETE WINDOW SETS - SKYLIGHTS -LANDING LIGHT LENSES

Replacement glass for over 350 different aircraft models from the oldest to the latest production - both domestic and foreign. Each can be confirmed with serial and model number, year of manufacture, thickness of material and cross-referenced with OEM part number. Manufactured of high optic quality acrylics. Available in clear, green and solar gray tints. For ease of installation, they are trimmed to OEM specifications with instructions furnished. Our manufacturer's quality control systems are approved by both the FAA and the Department of Defense. To assure quick delivery at minimum cost, orders are shipped directly from our manufacturer's warehouse in Pennsylvania or California. Extensive inventories on hand in both locations making shipment possible in 24 hours in most cases. Generally speaking, one-piece windshields require shipment by motor freight, two-piece windshields can be shipped by United Parcel Service. Windshields requiring motor freight shipment on the following list are marked with an asterisk. Attractive Air Freight rates All windshields/windows are special order, they are non-cancelable and non-returnable. Only a few models are listed - over 35 available. Advise complete aircraft model and serial number, Leave the rest to us!

VISIT WWW.AIRCRAFTSPRUCE.COM FOR MORE INFORMATION AND MODELS AVAILABLE.

FLY COOLER, HEALTHIER AND SMARTER

with UV-SG and UV-GT tint windshields and windows from LP Aero Plastics

Say so long to sun damage. Blocking the sun's damaging rays benefits you, your passengers and your aircraft. With far less UV and IR radiation entering the cabin, occupants are less likely to suffer sun-related skin and eye damage - and they'll enjoy cooler cabin temperatures to boot. UV-SG Solar Gray and UV-GT Green tints can reduce interior temperatures by as much as 20 degrees. While you and your passengers bask in greater comfort, you'll also reduce the workload on the air conditioning systems. UV and IR radiation can also wreak havoc on avionics and interior components, such as plastic panels and seat materials. That damage is significantly reduced with the UV-SG and UV-GT tints.

Aircraft	Clear PN	Clear Price	Smoke PN	Smoke Price	Green PN	Green Price
192 Aeronca Citabria 7ECA, 7GC4A, 7GCBC, 7KCAB	192C	$225.95	192SG	$225.95	192C	$225.95
Aeronca Chief 11AC, BC, CC	05-02177	$205.95	05-02229	$248.95	05-02228	$247.95
Bellanca Viking	05-02188	$325.00	05-02231	$389.00	05-02330	$389.00
Beech Bonanza Lft. 187 thru G-35	250C	$117.75	05-02227	$140.75	05-02226	$140.75
Beech Bonanza Rt. 187 thru G-35	251C	$117.75	05-02233	$141.75	05-02232	$141.75
Beech Bonanza Lft. 250 H-35-V-35, Baron 55	280C	$217.95	05-02235	$259.95	05-02234	$259.95
Beech Bonanza Rt. 250 H-35-V-35, Baron 55	281C	$217.95	05-02237	$259.95	05-02236	$269.95
Cessna 120-140 S/N 8001 to 8799	301C	$224.95	05-02239	$269.95	05-02238	$269.95
Cessna 120-140 S/N 8800+up	300C	$224.95	300SG	$269.95	05-02240	$276.95
Cessna 140A, 150, 152	303C	$219.95	303SG	$264.95	303G	$251.95
Cessna 170 1948-49 to S/N 18728	310C	$222.95	05-02242	$266.95	--	--
Cessna 170A S/N 18729 to 20676	306C	$233.95	05-02243	$279.95	05-02244	$279.95
Cessna 172 S/N 47747 to 49544	05-02178	$298.95	05-02245	$359.00	05-02246	$358.00
Cessna 170B S/N 20267+up 1952 to 1955	312C	$242.95	05-02247	$288.95	312G	$288.95
Cessna 172 S/N 28000 to 47746	312C	$242.95	05-02247	$288.95	312G	$288.95
Cessna 172 S/N49545 to 50572	313C	$311.00	05-02250	$371.00	05-02249	$371.00
Cessna 172 S/N 50573 to 72884	345C	$309.00	345SG	$371.00	345G	$371.00
Cessna 172 S/N 72885 & up	337C	$287.95	05-02251	$348.00	337G	$346.00
Cessna R172K S/N R2000 to R3199	05-02179	$419.00	05-02252	$502.00	05-02179	$419.00
Cessna 177, 177RG	329C	$349.00	05-02253	$419.00	05-02254	$419.00
Cessna 180 S/N 30000 to 31260	309C	$284.95	05-02255	$342.00	05-02256	$343.00
Cessna 180 S/N 31261 to 50355	315C	$337.00	05-02257	$404.00	05-02258	$405.00
Cessna 180 S/N 50356 to 51183	316C	$337.00	316SG	$404.00	05-02259	$403.00
Cessna 182 S/N 33000-51556	315C	$337.00	05-02257	$404.00	05-02258	$405.00
Cessna 182 S/N 52556-53598	316C	$337.00	316SG	$404.00	05-02259	$403.00
Cessna 182 S/N 53599 to 55844	338C	$369.00	05-02262	$443.00	05-02261	$443.00
Cessna 182 S/N 55845 to 64296	339C	$395.00	339SG	$473.00	339G	$473.00
Cessna 205	325C	$334.00	05-02263	$401.00	05-02264	$401.00
Cessna 206 S/N U206-0001 thru U206-0437	325C	$334.00	05-02263	$401.00	05-02264	$401.00
Cessna P206 S/N 0001 thru 0160	325C	$334.00	05-02263	$401.00	05-02264	$401.00
Cessna U206 S/N 0438+up	326C	$397.00	05-02265	$473.00	326G	$473.00
Cessna P206 S/N 0161+up	326C	$397.00	05-02265	$473.00	326G	$473.00
Cessna 207	05-02180	$395.00	05-02269	$473.00	05-02268	$473.00
Cessna 210 S/N 57841 to 58220	325C	$334.00	05-02263	$401.00	05-02264	$401.00
Cessna 210 S/N 58221 to 58510	05-02182	$334.00	05-02266	$401.00	05-02267	$401.00
Cessna 210 S/N 58511 to 58715	325C	$334.00	05-02263	$401.00	05-02264	$401.00
Cessna 210 S/N 58716 to 58818	326C	$397.00	05-02265	$473.00	326G	$473.00
Cessna 210 S/N 58937 + up	05-02183	$367.00	05-02271	$442.00	05-02270	$441.00
Cessna 310 S/N 35000 to 35546	05-02184	$353.00	05-02272	$423.00	05-02273	$423.00
Cessna 310 S/N 35547 to 39299	05-02187	$344.00	05-02275	$413.00	05-02274	$413.00
Cessna 310 S/N 310-0001 to 310 K-0245	05-02187	$344.00	05-02275	$413.00	05-02274	$413.00
Cessna 310 S/N Looo1 to 310Q0400	05-02185	$513.00	05-02277	$615.00	05-02276	$616.00
Cessna 310 S/N Q0401+up	05-02186	$569.00	05-02280	$682.00	05-02281	$682.00

Aircraft	Clear PN	Clear Price	Smoke PN	Smoke Price	Green PN	Green Price
Ercoupe 415 or G-Bubble	351C	$337.00	05-02283	$317.00	05-02285	$316.00
Grumman AA1, AA1A, AA1B	657C	$282.95	05-02286	$340.00	05-02287	$340.00
Grumman AA1,AAA-1A, AA-1B Canopy	658C	$319.00	05-02288	$475.00	05-02289	$475.00
Grumman AA5, AA-5A, AA5B	05-02189	$470.00	05-02290	$563.00	05-02291	$564.00
Luscombe 8 Series	400C	$174.75	400SG	$209.95	--	--
Mooney MK20-21,1959-64 Lft.	100C	$126.75	05-02292	$133.75	05-02293	$133.75
Mooney MK 20-21,1959-64 Rt.	101C	$126.75	05-02294	$133.75	05-02295	$133.75
Mooney 1965-1969 (4 cabin Windows) Lft.	133C	$119.75	05-02296	$142.75	05-02297	$142.75
Mooney 1965-1969 (4 cabin Windows) Rt	134C	$119.75	05-02298	$142.75	05-02299	$142.75
Mooney 1967-1969 (6 cabin Windows 1 pc.)	05-02190	$191.75	05-02301	$185.80	05-02302	$186.85
Mooney M20J and M20K	05-02192	$263.95	05-02303	$318.00	05-02304	$318.00
Piper J-3	450C	$131.75	450SG	$154.75	05-02278	$154.75
Piper PA-12-Round Top	455C	$182.80	05-02305	$219.95	05-02306	$219.95
Piper PA-12 Square Top	456C	$208.95	456SG	$219.95	05-02352	$219.95
Piper PA-15, 16, 17	459C	$221.95	05-02308	$265.95	05-06842	$265.95
Piper PA-22 Tripacer, 108 Colt, Bubble	463C	$220.95	463SG	$265.95	463G	$221.95
Piper PA-23 Apache S/N 1502 + up Rt.	05-02193	$241.95	05-02310	$290.95	05-02311	$290.95
Piper PA-23-250 S/N 27-2000 +up Lft.	421C	$249.95	05-02312	$299.95	05-02313	$299.95
Piper PA-23-250 S/N 27-2000 + up Rt.	422C	$249.95	05-02314	$299.95	05-02315	$299.95
Piper PA-24 Comanche Lft.	05-02194	$154.75	05-02316	$183.85	05-02317	$183.85
Piper PA-24 Comanche Rt.	05-02195	$152.85	05-02320	$183.85	05-02321	$183.85
Piper PA-25 Pawnee S/N 1-655	485C	$123.75	05-02318	$145.75	05-02319	$146.75
Piper PA-25 Pawnee S/N 656 + up	486C	$121.99	05-02322	$145.75	05-02323	$146.75
Piper PA-28 Cherokee S/N 1 + up Lft. (.125)	490C	$123.99	490SG	$149.75	490G	$148.75
Piper 28 Cherokee S/N 1 + up Rt. (.125)	491C	$123.99	491SG	$148.75	491G	$148.75
Piper PA-28 Cherokee (.250) Lft.	905C	$146.75	905SG	$174.75	05-02324	$174.75
Piper PA-28 Cherokee (.250) Rt.	907C	$146.75	907SG	$174.75	05-02325	$174.75
Piper PA-32-260 S/N 1-7300076 Lft.	492C	$137.75	05-02326	$161.75	05-02327	$161.75
Piper PA-32-260 S/N 1-7300076 Rt.	493C	$136.75	05-02328	$161.75	05-02329	$161.75
Piper PA-38-112 Tomahawk S/N 78A0001 to 82A0122	795C	$425.00	05-02330	$509.00	05-02331	$509.00
Rockwell 112, 114	508C	$360.00	05-02332	$430.00	05-02333	$430.00
Stinson 108 Lft.	552C	$137.75	05-02334	$163.80	05-02335	$163.80
Stinson 108 Rt.	553C	$137.75	05-02336	$163.80	05-02337	$163.80
T/Craft BC-12d,1946+up	650C	$205.95	05-02338	$246.95	05-02339	$245.95
T/Craft BC-1940-41, Pre-war BC-65	651C	$208.95	05-02340	$208.95	05-02341	----
Piper PA-28 Cherokee A-28, -140, -150, -160, -180, -235	055C	$46.50	05-02346	$69.75	05-02347	$69.75
Cessna 152, A152, F152, FA152	303/302C	$245.95	303/302SG	$295.95	303/302G	$294.95
Cessna 152, A152, F152, FA152	312/CMB	$446.00	05-02353	$420.00	05-02354	$420.00
Cessna 170B S/N 20267+up 1952 to 1955	312/CON	$346.00	05-02359	$403.00	05-02360	$403.00
Cessna 150, A150, F150, FA150	360C	$173.75	05-02348	$206.95	05-02349	$206.95
PA-18,PA-19(L-18C)	464C	$180.85	05-02356	$216.95	05-02350	$216.95
PA-20,PA-22	05-02357	$221.95	462SG	$265.95	462G	$265.95
Cessna 172,P172,F172	05-02358	$162.75	05-02351	$194.75	389G	$194.75

HEAVY THICKNESS WINDSHIELDS

STC Conversions

We now carry these STC Conversion extra thick windshields which are FAA approved for the following aircraft and which install as easily as the standard .250 thick windshields. Available in 3 thicknesses.

Available In Three Thicknesses

Part No.	Thickness	Price
269.312	.312	$869.00
269.375	.375	948.00
269.500	.500	1,098.00

Note: Verify that your serial number is eligible before ordering.

FAA APPROVAL LIST

Beech Bonanza F33
s/n CD-1235 – CD 1254
Beech Bonanza G33
s/n CD-1255 – CD 1304
Beech Bonanza F33A
s/n CE-290 and up
Beech Bonanza F33C
s/n CJ-26 and up
Beech Bonanza 33 thru E33A
s/n CD-1 – CD-1234,CE-1 - CE-289, CJ-1 – CJ-25
Beech Bonanza H35 thru V35A-TC
s/n D4866 – D9068
Beech Bonanza V35B thru V-35B-TC
s/n D9069 and up
Beech Bonanza 36 & A36
s/n E-1 and up
Beech Bonanza A36TC & B36TC
s/n EA-1 and up
Beech Baron 58 & 58A
s/n TH-1 and up
Beech Baron TC58 & 58TCA
s/n TK-1 and up
Beech Travelair 95 thru E95
s/n TD-1 – TD-721

CESSNA 150/152/172/177/182/210 WINDOWS

Aircraft Spruce stocks replacement windows for Cessna single and twin engine aircraft as well as all windshields and windows manufactured by LP Aero Plastics. Call or email Aircraft Spruce for quotation and specify year, serial number of aircraft and windows required.

Call: 1-877-4SPRUCE • Email: info@aircraftspruce.com

WINDSHIELD INSTALLATION ACCESSORIES

This is an adhesive backed, closed cell foam tape which is available as a 100' roll. This tape can be wrapped around the edges of the windows to both cushion and seal. DO NOT STRETCH DURING APPLICATION, IT WILL PULL BACK AND LEAVE GAPS. Piper used this extensively in their window installations.

1/4"x1/16" x 100' roll.....P/N 05-99100.....$29.85/rl
1-1/4" x 1/16" x 25" roll.....P/N 05-04864.....$20.99/rl
1-1/4" X 1/16".....P/N 05-02132.....$0.54/ft
Felt – Adhesive-backed 3/32"x1-1/2".....P/N 05-99110.....$3.75/ft

FOAM TAPE

An adhesive backed, closed cell foam tapel. Can be wrapped around the edges of the windows to both cushion and seal. Do not stretch during application, it will pull back and leave gaps. Piper used this extensively in their window installations. The 1/4" tape IS used mainly for vent window gaskets. 1/4" x 1/8" x 10' Roll..... P/N 05-04754..... $10.50

INDIVIDUAL WINDOWS

Window Model No.	Aircraft	Description	Each
231	Aeronca	Left front sliding-forward	$32.95
232	7AC	Left front sliding-rearward	$27.95
233		Left or Right rear	$44.95
234		Right front door	$37.95
225	Aeronca	Left or Right front door (sliding)	$28.95
226	11AC	Left or Right rear (Door) (sliding)	$28.95
227		Left or Right rear	$31.95
342	Cessna	Left or Right door	$43.50
343	120/140	Left or Right rear	$31.50
344		Left or Right skylight	$33.50
370	Cessna	Left or Right rear	$38.00
374	170	Left or Right door	$52.00
362	Cessna	Left or Right rear	$31.50
369	180	Left or Right door	$62.50
006	J-3	Skylight	$34.95
008		Left front triangle	$23.95
009		Left pilot sliding	$34.95
010		Left rear	$33.95
011		Right rear	$27.95
012		Right door	$45.95
436	PA-12	Left front (sliding)	$28.00
437		Left rear	$29.00
438		Door	$28.00
439		Right rear	$24.50
015	PA-16,20	Right door	$31.95
016	22	Right rear	$17.95
021		Left front stationary	$27.95
017		Left front sliding	$27.00
019		Left rear door	$17.95
465	PA-18	Right door	$47.75
466		Right or Left rear	$24.50
467		Rear sliding	$36.50
468		Front sliding (left)	$36.50
469		Left pilot	$22.95
020	Late PA-20	Left or Right square (rear)	$22.95
021		Left front pilot	$26.95
023		pilot-vented	$13.00

TODD'S CANOPIES

These optically perfect canopies are the very best quality available. They are superior in quality and less expensive than other sources. The Cozy and AeroCanard canopies include the windows, and the Berkut includes front and rear canopy. Prices include crating, and freight averages $70 to $100.

Aircraft	Clear P/N	Price	Tinted P/N	Price
AeroCanard	05-01145	$400.00	05-01146	$450.00
Berkut	05-01147	$500.00	05-01148	$500.00
Cozy III	05-01149	$400.00	05-01151	$500.00
Cozy Mark IV	05-00437	$532.00	05-00438	$532.00
ERacer	05-01152	$375.00	05-01153	$425.00
Long EZ	05-00439	$532.00	05-00440	$580.95
Varieze	05-01154	$701.00	05-01155	$534.00
Christian Eagle	05-01156	$466.95	05-01157	$450.00
Harmon Rocket	05-01158	$425.00	05-01159	$475.00
KR2S	05-01160	$489.00	05-01161	$489.00
Osprey	05-01162	$513.00	05-01163	$425.00
RV-3	05-01164	$458.00	05-01165	$425.00
RV-4	05-01166	$455.95	05-01167	$524.00
RV-8	05-01168	$506.00	05-01169	$472.00

ASHBY AIRCRAFT GLARESHIELDS

ASHBY AIRCRAFT GLARESHIELDS

Produced from 100% fiberglass that is hand-laminated to form a one-piece structure. They are manufactured out of fire retardant resin that meets Federal Aviation Regulations (FAR) parts 23 and 25. Prevent sun from reflecting in your instruments, allowing you to read them clearly. It will also protect sensitive instruments from heat and is impervious to damage from the sun's rays. Molded with a rich leather texture, which is pleasing to the eye, and has a semi-gloss black finish. On most models it fits flush with the windshield, and extending 3" past the front of the panel. A reinforced lip for mounting optional lights to illuminate the instrument panel, which also serves as hand-holds when entering and exiting the cockpit, or when adjusting your seats. There is also space for switches and annunciator lights. STC is pending for use on US type certificated aircraft. This part can be manufactured under contract with the owner operator under FAR 21.303b2. It is the owner operator's responsibility ti determine airworthiness and applicability.

CESSNA

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
120, 140, 150 (thru F, 1959-1966),	05-03871	$325.00	05-03908	$375.00	05-03945	$395.00
150G thru L (1967-1977), 152 (1978-1986)	05-03872	$325.00	05-03909	$375.00	05-03946	$395.00
170, 170A (1948-1951), 172 (1956-1958)	05-03873	$325.00	05-03910	$426.95	05-03947	$442.95
170B, 1952-1956	05-03874	$325.00	05-03911	$426.95	05-03948	$442.95
172A thru D(1960-1963), 175 (all)	05-03876	$325.00	05-03913	$426.95	05-03950	$442.95
172 1959 only	05-03875	$325.00	05-03912	$426.95	05-03949	$442.95
172E thru N, 172P, 172Q, 172XP, 172RG 1974-1986 (all)	05-03877 Stc'd	$325.00	05-03914	$426.95	05-03951	$442.95
180A thru H, 182 thru D, 185 thru E, F Models Prior to 1974	05-03878 Stc'd	$325.00	05-03915	$426.95	05-03952	$442.95
180J, 185 (1974-1986)	05-03879	$325.00	05-03916	$426.95	05-03953	$442.95
182 (1962-1963)	05-03880	$325.00	05-03917	$426.95	05-03954	$442.95
182 1964-1965 (EarlySlightRadius on Top.)	05-03881	$335.00	05-03920	$426.95	05-03957	$442.95
182 (1969-1974)	05-03884	$325.00	05-03921	$426.95	05-03958	$442.95
182 (1975 only)	05-03885	$408.00	05-03922	$509.00	05-03959	$525.00
182 1976-1986, 182R	05-03886	$325.00	05-03923	$426.95	05-03960	$442.95
205 (1963-1965 early)	05-03887	$325.00	05-03924	$426.95	05-03961	$442.95
206 1965 (Late) -1967 Not avail. for 1968-1969,2101965 (Late) -1967 Not avail.for1968-1969.	05-03888	$325.00	05-03925	$426.95	05-03962	$442.95
206 (1970-1986), 210 (1970-1986)	05-03889	$325.00	05-03926	$426.95	05-03963	$442.95
210 (1960-1961)	05-03890	$335.00	05-03927	$436.95	05-03964	$452.95
210 (1962 only)	05-03891	$335.00	05-03928	$436.95	05-03965	$452.95
XP210	05-04096	$325.00	05-04097	$428.95	05-04098	$442.95
336 (all), 337 (all)	05-03892	$285.00	05-03929	$386.95	05-03966	$402.95

PIPER

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
PA-23(1956-1963)	05-03893	$335.00	05-03930	$436.95	05-03967	$452.95
PA-24, PA24-250, 260,400,PA-30(all)	05-03894 Stc'd	$325.00	05-03931	$426.95	05-03969	$442.95
PA-28-140, 150, 151, 160, 161, 181, 201T, 235,236,PA-28S-160, 180, PA-28R-180, 200, 201, 201T, PA-28RT-201, 201T, PA-44-180, 180T	05-03895 Stc'd	$325.00	05-03932	$426.95	05-03970	$442.95

PIPER CONT.

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
PA-28(1964-1967), PA-28-150,160,180, 235 (Large Hump over Radio Stack)	05-03896 Stc'd	$325.00	05-03933	$426.95	05-03971	$442.95
PA-32-260, 300, 301, 301T, 301FT, 301XTC,PA-32S-300, PA-32R-300, 301T, 301(SP), 301(HP), PA-32RT-300, 300T PA-34-200,200T,220T	05-03897 Stc'd	$325.00	05-03934	$426.95	05-03972	$442.95
PA-38 (all)	05-03898	$325.00	05-03935	$426.95	05-03973	$442.95

BEECHCRAFT

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
BE-23	05-04093	$325.00	05-04094	$428.95	05-04095	$442.95
BE-33 1947-1961, BE-35 1947-1961	05-03899	$325.00	05-03936	$426.95	05-03974	$442.95
BE-33 1962-1971, BE-35 1962-1971, BE-55 1962-1971, BE-95 1962-1971	05-03901	$325.00	---	---	---	---
BE-33 1962-1971, BE-351962-1971,BE-55 1962-1971, BE-95 1962-1971	05-03903 With Plenum	$365.00	05-03940	$466.95	05-03977	$482.95
BE-33 1972-1983, BE-351972-1983,BE-36 1971-1983, BE-58 1971- 1983	05-03905 With Plenum	$395.00	05-03942	$496.95	05-03979	$512.00
BE-33 1962-1983, BE-35 1962-1983	05-03904	$395.00	---	---	---	---

MOONEY

For Model	Glareshield		w/ 12V Lights		w/24V Lights	
	Part No/	Price	Part No/	Price	Part No/	Price
201 (1977-1983)	05-03907	$325.00	05-03944	$426.95	05-03981	$442.95

LIGHTS

PMA Approved Panel Rope Lights, 12 or 24 Volts DC, 18" or 34" Long. Illuminates instruments with 8 or 12 2000+ hour bulbs, respectively.

Lights	Part No.	Price
12 Volts, 8 Bulbs, 18"	05-03998	$66.75
24 Volts, 8 Bulbs, 18"	05-03999	$122.95
12 Volts, 12 Bulbs, 34"	05-03994	$102.75
24 Volts, 12 Bulbs, 34"	05-03995	$118.75

GLARE SHIELD KIT

This Glare Shield kit provides the materials to produce a professional custom padded glare shield. The composite lay-up of material has passed the FAR 25.853 burn requirements and a burn certificate is provided with each kit. Kit includes 1.5 linear yards x 54" wide black SPT Leather-Like Vinyl, 1.5 linear yards x 48" wide 1/8" SPT open cell foam cushioning, two 1/16" x 8" x 50" ABS base material aluminum stiffener, bull nose material, template foam and cardboard template material. Complete easy to follow instruction sheet is provided to help you produce a professional looking padded glare shield that has the look and feel of leather. The electroluminescent Glow Strip Glare Shield Lighting (P/N 11-00848) fits nicely under this Glare Shield.

P/N 11-06324.....$239.95

AP

WINDSHIELDS – VORTEX GENERATOR KITS

CEE BAILEY AIRCRAFT WINDSHIELDS

Cee Bailey's Aircraft Plastics has been producing superior replacement windows and windshields for light aircraft since 1955. These windshields are custom built to fit your aircraft's serial number. This handcrafting insures a perfect, distortion-free windshield, trimmed and ground to fit your aircraft with little or no modification. Optical qualities, contour, shape and fit are exceptional. All windshields and windows are FAA/PMA approved. Cee Most windows and windshields are available in clear, green, and solar grey. Prices are for clear. Add 15% to prices for green or grey tints. When ordering, specify model number, year, and serial number of the aircraft.
See www.aircraftspruce.com for unlisted windshields and windows for Beechcraft Bonanza, Deobonair, Baron, Musketer, Travelair, Bellanca, Cruisair, Aeronca Champion, Aeronca Sedan, and Aerocommander.

Make/Model	Price
Aero Commander 2pc w/s Left	$183.00
500, 520, 560, 680 Right	$183.00
Aero Commander 100 Darter-Lark Volaire 10 or Volaire 10A	$373.00
Aeronca Citabria	$260.00
Aeronca Chief	$299.00
Beechcraft Musketeer, Sundowner, Sierra, Sport (.125)	$338.00
Musketeer, Sundowner, Sierra, Sport (.187)	$391.00
Bonanza 33/35, 2pc w/s (per side)	$178.00
Bonanza 33/35/36/55/58/95 1pc w/s (must check s/n carefully)	$500.00
Bellanca Cruismaster models 14-19, 14-19-2, 14-19-3	$367.00
Viking, Super Viking 14-19-3A,17-30 17-30A, 17-31A, 17-31ATC	$296.00
Cessna 120-140 (S/N 8800 & up)	$251.00
140A, 150, 152	$251.00
152	$281.00

Make/Model	Price
172 (S/N50573 to 72884)	$365.00
180,182 (S/N52556 to 53598)	$393.00
182 (S/N 53599 to 55844)	$400.00
182 (S/N 55845 to 64296)	$450.00
205, 206, U206, P206	$400.00
207	$460.00
210 (S/N 58716 to 58818)	$454.00
Ercoupe - Fornair (bubble type w/s)	$245.00
Grumman - AA1, AA1A, AA1B	$302.00
GrummanCanopy-AA1,AA1A,AA1B	$328.00
Luscombe 8 series	$230.00
Mooney M20, M20a/b/c/d/e prior to 1965 (2pc w/s)	$176.00 per side
Mark21,M20c,Super21,M20e,Master M20d, Executive21 M20f, after 1965	$118.00 per side
Ranger M20c, Chaparral M20e, Executive M20f, Statesman M20g	$230.00
Navion A/B/D/E/F Std. or flush type (2pc w/s)	$137.00 per side
Navion Rangemaster G&H 2pc w/s	$137.00

Make/Model	Price
Piper J-3 Cub	$158.00
PA-12 square top (late model)	$261.00
PA-12 square top (early model)	$282.00
PA-15/16/17/22 108 colt bubble	$285.00*
Apache 23 (S/N 1502 & up) RorL	$250/side
Pawnee 25 (S/N 656 & up)	$130.00
Cherokee PA-28 (.125) RorL	$142./side
Cherokee PA-28 (.250) RorL	$172./side
Stinson HW-75 2pc	$176./side
Stinson Voyager108, 108-1/2/3 2pc w/s	$171./side
Taylorcraft BC-12D, 1946 & up	$229.00
Taylorcraft B 1940–41	$229.00
Yak 52 Windshield (4 sections) *all windows available canopy, side windows, center fixed, aft siding, rear fixed	$395.00
Yak CJ69 (*all windows available canopy, fwd sliding,center fixed,aft siding,rear fixed)	$360.00

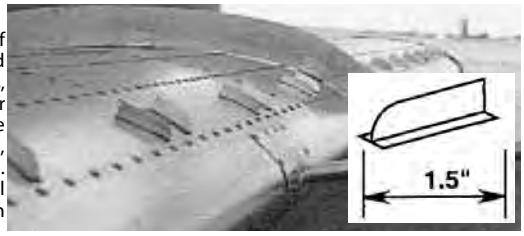
RV WINDSHIELD FAIRING

* A one-piece fiberglass fairing for Van's Aircraft RV6, RV7, RV9 series aircraft (Slider option)
* Designed with generous overlap areas to fit any installation
* Built from 4-layers of 8.8oz cloth and epoxy resin. Fully primed and ready for trimming/installation
* Save 25+ hours and lots of mess versus the traditional build-up method
* Large box is 30"x30"28", but just 8lbs.

P/N 05-03664.....$495.00

MICRO VORTEX GENERATOR KITS

Micro Vortex Generators from Micro Aerodynamics, Inc. are available for a wide range of aircraft and can reduce stall speed, improve aileron response, improve cross wind control, and reduce landing and takeoff roll. The kits consist of vortex generators mounted on the wings, the horizontal stabilizer, and the vertical stabilizer. The generators are manufactured under FAA/PMA from 6063T6 aluminum and are curved to fit the contour of the wing. Included in the kits are installation tools, detailed drawings and instructions, templates for positioning VG's, spares, Loctite Depend adhesive and all the materials needed for the easy one-day installation. When ordering, specify aircraft, serial number, N number, paint name and number (additional $200.00 to match), make and model, and any modifications to aircraft. Generic VG kit used on LongEZ, RV-4/6/8, Rans, Murphy Rebel and others. Specify Aircraft make and model.



Make/Model	Part No.	Price
CESSNA TWINS 310G thru 310Q	05-00602	$1,950.00
310R & T310R (ZFW & GWI - 180 lbs)	05-00604	$2,450.00
320B/C/D/E/F	05-00605	$1,950.00
310I & 310J	05-04258	$1,950.00
336 & 337	05-04404	$1,950.00
340A, 340, 335 (GWI 300 lbs)	05-00606	$2,950.00
401, 401A, 401B	05-00607	$1,950.00
402, 402A, 402B	05-00608	$1,950.00
402C (ZFW & GWI - 360 lbs)	05-00609	$2,950.00
411, 411A	05-00610	$2,450.00
414	05-00611	$1,950.00
414A, 414AW (ZFW & GWI - 350 lbs)	05-00613	$2,950.00
421, 421A	05-00614	$1,950.00
421B & 421C (GWI - 129 lbs)	05-00615	$2,950.00
CESSNA SINGLES		
120, 140 Series	05-04393	$695.00
150, 152 (all models)	05-04394	$695.00
170 "Rag Wing"	05-04189	$950.00
170A, 170B	05-00616	$1,450.00
172, 175 Series	05-00618	$1,450.00
177, 177A, 177B, 177RG, F177RG	05-04397	$1,450.00
180, 185 Series	05-00617	$1,450.00
180, 185 Vertical Tail Upgrade	05-04396	$150.00
182 Series	05-04469	$1,450.00
205, 206, 207 Series	05-00619	$1,450.00
210 (all models)	05-04470	$1,450.00
BEECHCRAFT TWIN		
Baron 55 A/B/C/D/E	05-00621	$2,450.00
Baron 58, 58A	05-00623	$2,950.00
Hawker Beechcraft G58 Baron	05-04471	$2,950.00
Baron 58TC, 58P	05-00624	$2,450.00
Baron 55 Upgrade kit (w/older VG system)	05-00625	$950.00
Duke 60, A60, B60	05-00626	$2,450.00
Twin Bonanza	05-00627	$1,950.00
Travel Air	05-00628	$1,950.00
BEECH SINGLES		
Musketeer, Sierra, Sundowner	05-04391	$1,450.00
Bonanza 35 Series	05-00629	$1,450.00
Bonanza 33, 36, A36, A36TC, B36TC	05-00630	$1,450.00

Make/Model	Part No.	Price
Beechcraft Debonair 33	05-04392	$1,450.00
Hawker Beechcraft G36 Bonanza	05-04192	$1,450.00
PIPER TWINS		
Aztec PA-23-250	05-00633	$1,950.00
Geronimo PA-23-180	05-00634	$1,950.00
Twin Comanche PA-30, PA-39	05-00635	$1,950.00
Seneca II (ZFWI - 168 lbs)	05-04472	$1,950.00
Seneca I, III, IV, V	05-04398	$1,950.00
Seminole PA-44-180, PA-44-180T	05-00636	$1,950.00
PIPER SINGLE		
J-3, J-4, J-5, PA-11 (includes the horizontal stabilizer)	05-00640	$695.00
J-3 Upgrade Kit - Tail VGs on underside of stabilizer provide full-span elevator authority and improve controllability.	10-04227	$150.00
PA-12/PA-18	05-00639	$695.00
PA-15, PA-16, PA-17	05-04399	$695.00
PA-22, PA-20	05-00641	$695.00
PA-24 Comanche	05-04401	$1,450.00
PA-28 All Models	05-00642	$1,450.00
PA-32 Cherokee Six, Lance (except T-Tail)	05-00939	$1,658.00
PA-32 Saratoga	05-00938	$1,450.00
MOONEY		
M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20L, M20M, M20R, M20S	05-04402	$1,450.00
ROCKWELL COMMANDER		
112, 112TC, 112TCA, 114, 114A, 114B, 114TC, 115TC	05-00646	$1,450.00
LAKE		
LA-4, LA-4A, LA-4P LA-4-200, Model 250	05-00647	$1,950.00
AMERICAN CHAMPION		
Aeronca Champ, Scout Citabria: 7AC, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7JC, 7KC, 7KCAB, 8KCAB, 8GCBC	05-00644	$695.00
Aeronca Chief: 11AC, S11AC, 11BC, S11BC, 11CC, S11CC	05-04473	$695.00
Aeronca Sedan: 15AC, S15AC	05-04190	$950.00
AVIAT Husky A-1, A-1A, A-1B	05-00643	$695.00
MAULE M-4, M-5, M-6, M-7 MT-7, MX-7, MXT-7, M-8	05-00645	$695.00
STINSON 108, 108-1, 108-2, 108-3, 108-5	05-04403	$695.00
TAYLORCRAFT Taylorcraft Series	05-01208	$695.00
AGRICULTURAL Air Tractor, Ayres Thrush, Brave, Cessna 188, Dromader, Weatherly	05-00648	$1,450.00
KIT PLANES RV, Murphy Rebel, Long EZ	05-00001	$493.95

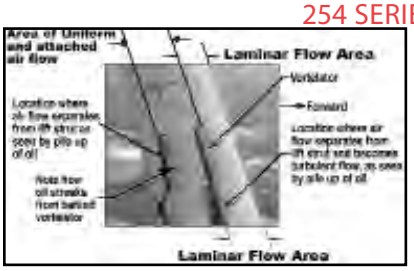
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

VORTELATOR KITS

254 SERIES VORTELATOR KITS FOR HOMEBUILT AIRCRAFT



Can increase your homebuilt aircraft speed by 4 to 7.5 mph. This is accomplished by placing vortelators at certain critical locations which will cause the boundary layer to stay attached to flying surfaces for a greater distance, and to keep the boundary layer thinner. The net result of these two actions is that it reduces both the profile drag and skin friction drag components of the parasite drag. Contains a 100 foot roll of vortelator, more than enough for most homebuilts, plus clear instructions with pictures on how to determine where to, and how to, place the vortelators to increase your aircraft's speed. Though it's not a requirement for homebuilt aircraft these vortelators are FAA STC'd and manufactured under a FAA PMA because they are also approved for certified aircraft. That means you get the benefit of FAA certified aircraft parts. The booklet 120-1 "Fly to use less fuel" (PN 08-00732) includes an adhesive backed aluminum placard to list the working airspeeds of your aircraft.

Kit Number	Description or Effect of Installing Vortelator Kit
254-AD	Delineates a procedure for determining where vortelators should be placed on an aircraft, for increased speed, by visualizing surface air flow through simple flight tests at straight and level flight at cruising speed. This kit is ideal for those aircraft models that do not have enough aircraft out in the field for Aircraft Development to economically warrant the time and expense of developing kits for.
254-RV3 254-RV4 254-RV6/6A 254-RV7/7A 254-RV8/8A	The vortelating of the airframes of these RV aircraft will give about a 4 to 5 MPH increase in speed and a decrease in the stalling of about 2 MPH. The vortelating of the propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used. The vortelator kit for the RV6A takes about 8 hours to install on the aircraft. Between the decrease in stall speed and the increase in the aircraft's speed one gets about 7 MPH or more of additional MPH usage.
254-LANCAIR	The vortelating of the airframes of the Lancair 235, 320, 360 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.
254-T18	The vortelating of the airframes of the T-18 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of the aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.

Description	Part No.	Price
Vortelator Kit 254-AD	05-00851	$250.00
Vortelator RV3 Kit 254-RV3	05-00852	$219.00
Vortelator RV4 Kit 254-RV4	05-00853	$219.00
Vortelator RV6/6A Kit	05-00854	$219.00

Description	Part No.	Price
Vortelator RV7/7A kit	05-00855	$219.00
Vortelator RV8/8A kit	05-00856	$219.00
Vortelator Kit for Lancair	05-00857	$219.00
Vortelator kit for T18 254-T18	05-00858	$219.00

246-100 CESSNA VORTELATOR KIT - can increase Cessna speeds by up to 6 MPH. This is accomplished by placing vortelators at certain critical locations which cause the boundary layer to stay attached to flying surfaces for a greater distance, and to keep the boundary layer thinner. The basic procedure for installing the kit is to prepare the surface to which the vortelator is going to be applied by thoroughly cleaning the surface. Then simply peel the liner backing off the adhesive back vortelator and apply it to the cleaned surface. The vortelator is clear and therefore takes on the color of the surface to which it is applied. This vortelator kit is FAA STCd and manufactured under a FAA PMA approval. The kit comes with 200 feet of vortelator, more than enough for one airplane, and clear simple instructions on how to install the kit. The kit can easily be installed in one day and will add about 5 ounces of weight to the aircraft and not change the handling qualities of the aircraft. Please visit our website for a list of FAA approved Cessna models. ..... P/N 08-00731 ..... $750.00

FLY TO USE LESS FUEL - Explains the working speeds of the aircraft such as, steepest climb speed, best rate of climb speed from 0 to 5,000 ft., best rate of climb speed from 5,000 to 10,000 ft., speed of most flight time per gallon of fuel, speed of most miles per gallon of fuel, speed of slowest decent power off, speed of shallowest glide. It explains these working speeds of the aircraft in simple to understand graphics, no complicated mathematical formulas used. And what's even better there's no need to do a time consuming flight test program to determine the working speeds of your aircraft. Or for that matter any type certified aircraft. This booklet gives simple multiplication factors, based on cruising speed, to determine the working speeds for your homebuilt aircraft. Knowing the speed to fly at to go the greatest distance or stay up the greatest amount of time can be critical under certain conditions. Flying your aircraft using the techniques described in this booklet will save on the cost of gasoline an item that will only continue to escalate in cost as time goes by. This booklet comes with an adhesive backed aluminum placard to list the working airspeeds of your aircraft Fly To Use Less Fuel booklet ..... P/N 08-00732 ..... $19.95

PROPELLER VORTELATOR KITS FOR ULTRALIGHT, HOMEBUILT AND CERTIFIED AIRCRAFT

Capable of increasing your aircraft speed and RPMs. This is accomplished by placing vortelators at certain critical locations on the propeller's most inefficient highest air drag areas. The vortelators will cause the boundary layer to stay attached to the propeller surface for a greater distance, and to keep the boundary layer thinner. Though it's not a requirement for ultralight or homebuilt aircraft these vortelators are FAA STC'd and manufactured under a FAA PMA because they are also approved for certified aircraft. Contains a three foot strip of vortelator, more than enough to vortelate up to a three bladed propeller. Plus clear instructions with pictures on where to place the vortelators on the propeller. The vortelator kit weighs less than .05 ounces and takes less than a half hour to install. The vortelators have a pressure sensitive adhesive backing so the installation process is simply to clean the area of the propeller where the vortelators will be placed and stick them on to the propeller. Can be used on virtually all propellers that are attached to engines of less than 500 HP be they metal, composite, or wood are approved for the installation of vortelator kits. This kit is not recommended for propellers that are equipped with anti-icing devices.

259-100 Propeller Vortelator Kit for Ultralight Aircraft - Capable of INCREASING Your ultralight aircraft speed by 2 to 5 mph and increasing your engine speed by up to 150 rpm. P/N 05-01465 ..... $33.75

259-200 Propeller Vortelator Kit for Homebuilt Aircraft - Capable of Increasing your homebuilt aircraft speed by 2 to 4 mph and your rpm by 20 to 50 rpm. That's if you have a fixed pitch propeller. If you have a constant speed propeller, for a given RPM and manifold pressure the propeller will be at a slightly larger pitch giving you more speed. P/N 05-01466 ..... $33.75

260-100 Propeller Vortelator Kit for Certified Aircraft - Of increasing your aircraft speed by 2 to 4 mph and your rpm by 20 to 50 rpm. That's if you have a fixed pitch propeller. If you have a constant speed propeller, for a given RPM and manifold pressure the propeller will be at a slightly larger pitch giving you more speed. Please visit our website for a list of FAA approved propeller models P/N 05-01467 ..... $104.95

VORTEX GENERATOR STOL KIT

The vortex generators are precision injected molded and made from UV stabilized clear polycarbonate material. This material is extremely strong and lightweight. 100 vortex generators will weigh approximately 1 ounce. The bottom of the vortex generator has a slight curve to match the wings airfoil. They have a full sweeping sail which wind tunnel testing has shown to be superior to those with a flat top. The vortex generator has a base of 1.0" X .40". There are many advantages to this kit: 1) increased lift, 2) slower stall speed by 4 to 6 MPH, 3) shorter landing distances, 4) shorter takeoff distances, 5) higher angle of climb, 6) tighter turns, 7) gentler stalls, 8) better aileron authority at slow speed, 9) aircraft is more controllable at slow speed, 10) in general increased total performance and safety. These kits come with clearly written installations instructions that allow you to determine where on the aircraft to install the vortex generators. also includes the number of vortex generators (VG's) listed in the table below for the kit selected. Plus a 3M very high bond adhesive tape.

Kit No.	Description of Vortex Generator Kit	No. of VG's	Part No.	Price
261-AD1	Deluxe generic vortex generator STOL kit for homebuilt aircraft	150	05-01776	$438.00
261-AD2	Generic Vortex Generator STOL Kit for Homebuilt Aircraft	65	05-01780	$197.75
261-RV1	Vortex Generator STOL Kit for the RV-3 Aircraft	65	05-01777	$262.95
261-RV1	Vortex Generator STOL Kit for the RV-4 Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-6/6A Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-7/7A Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-8/8A Aircraft			

AIRCRAFT SPEED BRAKES

SPEEDBRAKES FOR EXPERIMENTAL AIRCRAFT

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility. Kit will arrive complete with cockpit switch, all installation hardware and documentation. Average installation time is 35-45 hours with an installed weight of 9 pounds.

12V..... P/N 05-07198.....$4,595.00
24V..... P/N 05-07199.....$4,595.00

SPEEDBRAKES FOR LANCAIR LEGACY AIRCRAFT

Deployable at any speed below Vne (175 Knot limit if you have tip tanks. Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility. Kit will arrive complete with cockpit switch, all installation hardware and documentation. Average installation time is 35-45 hours with an installed weight of 9 pounds.

12V..... P/N 05-07201.....$4,295.00
24V..... P/N 05-07202.....$4,295.00

SPEEDBRAKES FOR PIPER PA 28 AND PA 32 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Piper PA28/32 Series Aircraft, STC SA00762SE. Available for both 12 or 24 volt aircraft

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 25-35 hours with an installed weight of 9 pounds.

STC'd For: PA28R-201, PA28-201T, PA28RT-201, PA28R-201T, PA32-260, PA32-300, PA32S-300, PA32R-300, PA32RT-300, PA32R-301, PA32R-301T, PA32-301, PA32-301T

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07203.....$4,995.00
24V..... P/N 05-07204.....$4,995.00

SPEEDBRAKES FOR PIPER PA 30 AND PA 39 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Piper PA30, PA39 Series Aircraft, STC SA0107SE. Available for both 12 or 24 volt aircraft

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 25-35 hours with an installed weight of 9 pounds.

STC'd For: PA-30, PA39

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07206.....$4,995.00
24V..... P/N 05-07207.....$4,995.00

SPEEDBRAKES FOR PIPER PA 46 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Piper PA46 Malibu/Mirage Series Aircraft (STC SA00520SE).

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 25-35 hours with an installed weight of 9 pounds.

STC'd For: PA46-310P & PA46-350P

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07208.....$4,995.00
24V..... P/N 05-07209.....$4,995.00

SPEEDBRAKES FOR MOONEY M20 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Mooney M20 Series, STC SA4342NM. Available for both 12 or 24 volt aircraft.

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 25-35 hours with an installed weight of 9 pounds.

STC'd For: M20 Series Mooney

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07211.....$4,995.00
24V..... P/N 05-07212.....$4,995.00

SPEEDBRAKES FOR BEECH 33 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Beechcraft Bonanza Model 33 Series, STC SA0107SE. Available for both 12 or 24 volt aircraft.

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 35-45 hours with an installed weight of 9 pounds.

STC'd For: 35-33, 35-A33, 35-B33, 35-C33, 35-C33A, E33, E33A, F33, F33A, F33C & G33

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07213.....$4,995.00
24V..... P/N 05-07214.....$4,995.00

SPEEDBRAKES FOR BEECH 36 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Beechcraft Bonanza Model 36 Series, STC SA0107SE. Available for both 12 or 24 volt aircraft.

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 25-35 hours with an installed weight of 9 pounds.

STC'd For: 36, A36 & A36TC

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07216.....$4,995.00
24V..... P/N 05-07217.....$4,995.00

SPEEDBRAKES FOR BEECH 35 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Beechcraft Bonanza Model 35 Series, STC SA0107SE. Available for both 12 or 24 volt aircraft.

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 35-45 hours with an installed weight of 9 pounds.

STC'd For: A35, B35, C35, D35, E35, F35, G35, 35R, H35, J35, K35, M35, N35, P35, S35, V35, V35A & V35B

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft dra. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07218.....$4,995.00
24V..... P/N 05-07219.....$4,995.00

SPEEDBRAKES FOR CESSNA 210 AIRCRAFT

2000 Series Aftermarket SpeedBrake Kit For Cessna 210 Series, STC SA2602NM. Available for both 12 or 24 Volt aircraft.

Kit will arrive complete with STC, cockpit switch, all installation hardware and documentation. Average installation time is 25-35 hours with an installed weight of 9 pounds.

STC'd For: 210G, T210G, 210H, 210J, T210K, T210J, 210L, T210L, 210M, T210M, 210N, P210N, T210N, P210R, T210R, T210H

Deployable at any speed below Vne (175 Knot limit if you have tip tanks). Doubles aircraft drag. Doubles normal rate of descent. Helps prevent engine shock cooling. Improves aircraft value and utility.

12V..... P/N 05-07221.....$4,995.00
24V..... P/N 05-07222.....$4,995.00

VIEW 1 VIEW 2

ALUMINUM EYEBALL AIR VENTS

Aluminum airline style "eyeball" air vent swivels to direct air where needed.Knurled collar of outlet rotates to control air volume. Mounts in 1-7/8" dia. hole.

P/N 05-04065 ..... $211.95

WEMAC AIRCRAFT LIGHT & EYEBALL AIR VENT REMOVAL TOOL

The WEMAC Aircraft Overhead Cabin Light & Air Vent Removal Tool quickly and safely removes WEMAC cabin light and air vent housings for servicing.

Features:

- Does not damage the housing when removing
- Manufactured with high friction elastomer tip for maximum grip.
- Made of high quality durable material and will not break or crack
- Saves time and money on airplane technician labor costs

Specifications:

- 3 5/8" High x 2 1/8" Diameter

P/N 06-01565 ..... $29.85

EYEBALL AIR VENT ADAPTER

The extension on the back of these aluminum eyeball air vents is very narrow and allows little room to attach SCAT ducting. This adapter enables the user to attach 2" diameter SCAT ducting to the back of the vent using a stainless steep clamp. P/N 05-04067 ..... $21.70

Front Back

P/N 05-00779

EYEBALL SWIVEL VENT

This high quality, economical swivel air vent is made from 2024T351 aluminum and is available anodized black or grey. Diameter of the flange is 2.75" and the vent is designed to attach with a standard 2" air duct flange. The vent hole of this eyeball swivel vent is 7/8". The knurled collar on the vent swivels 60° to adjust air volume anddirect air flow as desired. The vent features 4 mounting holes (1/8" dia.) which are spaced 2-3/8" apart or a mounting plate with a thickness of .71". Made in USA

Eyeball Swivel Vent - Black ..... P/N 05-00779 ..... $59.75
Eyeball Swivel Vent - Grey ..... P/N 05-00787 ..... $59.75
2" Flange Adapter ..... P/N 10350-8 ..... $7.50

PLASTIC EYEBALL AIR VENTS

These ball and socket air vents are injection molded T grade ABS. The vent orifice is 1" dia., and the ball swivels 45°. The mounting flange is 2-1/8" square, and the distance between mounting hold centers is 1-11/16". Mounts in 1.75" dia. hole & uses 1-3/4" ducting. Wt: 1.25 oz. ea.

Gray ..... P/N 05-04082 ..... $17.95
Black ..... P/N 05-04079 ..... $17.95
White ..... P/N 13-01943 ..... $17.95
Beige ..... P/N 05-04081 ..... $17.95

CESSNA 210 FRESH AIR VENT SYSTEM

Replaces the forward cabin vent. Features durable Wemac air vents, full/partial closure, directional control, and positive shut-off. All metal construction. Completely replaces the old style, plastic overhead fresh air vents in most Cessna 210 aircraft. Full system includes the forward center, and aft systems. STC approved.

Full system ..... P/N 05-04092 ..... $1,538.00
Pilot & Co-Pilot ..... P/N 05-04083 ..... $993.00
Center Vents (total of 2 units) ..... P/N 05-04085 ..... $297.95
Rear Vents (total of 2 units) ..... P/N 05-04087 ..... $490.95

ACTIVENT ACV-100 COCKPIT VENTILATOR

Solar Powered Cockpit ventilator installs in place of the normal can type vent while the aircraft is parked. An 8ft cord allows use with the panel on the glare shield or outside the aircraft when an outsidecover is used. The system provides a minimum of 7CFM airflow through the cabin per vent. The fan is a ball bearing design with a 10,000 hr design life. Made from aircraft grade aluminum. The Solar Panel is injection molded acrylic with an integral lens system.

Standard ..... P/N 05-04072 ..... $129.95
For Cessnas with ventubes ..... P/N 05-04074 ..... $113.95

CABIN WINDOW VENTILATOR

Plexiglass cabin ventilator. Mounts firmly at four points. Closes tight for winter flying. Uses 2-1/2" dia. hole.

P/N 05-08078 ..... $18.65

VENTUBE FOR CESSNAS

The Ventube is a plastic unit that consists of an exterior tube and a lockable interior tube with a cap. Air flow control is accomplished by extending or retracting the interior tube. Ventube enhances pilot and passenger comfort, allows reliable closure of the air vent, controls vent direction and flow, and reduces air vent noise and leakage. FAA approved for Cessna 120, 140, 150, 152, 170, 172, 175, 180, 182, 185, 190, 195, 205, 206, 207, 210-210F, and 305. Detailed instructions, STC, FAA Form 337, etc. are enclosed with each pair. P/N 05-04091 ..... $94.65/pr.

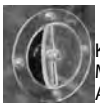
AIRFLOW ENHANCEMENT KIT

Improves the cabin airflow in General Aviation aircraft, specifically Cessnas. Combined with Ventubes they enhance the pilot and passengers comfort (cooling & heating), allow reliable closure of the inlet air vents, control cabin air direction, increase cabin air flow, and reduce inlet air noise and leakage. The kit consists of two cabin exit vents, CEV, to allow the cabin air to exit into the aft fuselage and the fuselage exit vent, FEV in the modified inspection plate, to allow the cabin air to exit the fuselage of the aircraft. P/N 05-04080 ..... $78.75

THE COMPLETE AIRFLOW KIT

Ventubes™ (pair) - controls air flow into the cabin. Cabin Exit Vents - allows air to exit to fuselage. Fuselage Exit Vent - allows air to exit the aircraft.

P/N 13-03577 ..... $172.95



VISTA-VENTS

Knob adjustment permits complete control of cabin air. Mounts at four points in 2-1/2" dia. hole. Cessna Supplemental Approval available online. P/N 13-03500 ..... $19.75

CABIN AIR VENTILATOR

Aluminum 90° elbow type. Knurled collar rotates to control air volume. Mounts to a 2 1/2 in. Dia flange. For 1-1/4 Id scat ducting. Also good for cabin heat vents.

P/N 05-04075 ..... $79.50

"WHISPERFLO" VENTILATORS

Large molded plastic vent with 40° swivel. Thumb operated closure controls degree of opening. Mounts in 2-1/2" dia. hole. Large orifice (1-3/4") provides maximum cooling. Mounting in floor of aircraft assures full cabin ventilation. Use with SCAT-11 ducting.

Black ..... P/N 05-04073 ..... $18.50
Ivory P/N 05-04071 ..... $18.50

ULTIMATE VENTILATOR

The Ultimate Ventilator is machined from aluminum block and comes with holes tapped for 4-40 screws. 1.75" disk articulates out into airstream and does not leak when closed. Very popular with T-18 & RV builders. P/N 05-04090 ..... $93.50

SNAPVENT™ AIR VENTS

Adjustable plastic ventilators for use as fresh air intakes or air exhausts. Easily installed in plastic windshield or metal cowling. Two sizes:

MODEL A-2-100 Mounts in a 2" dia. opening. Can be turned to provide any degree of ventilation. The "Off" position is with the opening downward. P/N 05-01178 ..... $15.65/pr.

MODEL CC3251 Mounts in 31/4" dia. opening. Rotates to provide any degree of ventilation. Retracts to a closed position nearly flush with the mounting surface. P/N 05-01179 ..... $17.75/pr.

MODEL F325A Large tabs on lower flange and tapered profile make this vent ideal for higher airspeeds. Mounts in 3-1/4" opening in plastic windshield or metal cowling. P/N 05-04088 ..... $14.85/pr.

MODEL F318 Tapered in profile in back provides a more direct flow of air. Mounted in 3-3/16" opening in plastic windshields or metal cowling. P/N 05-04089 ..... $17.50pr.

MODEL CC3251F - This Snapvent is a custom hand manufactured part. It has two tabs welded opposite each other on the outer ring to better facilitate holding itself in the window and in addition, it also has a custom made thicker wire inserted internally to give great support laterally.

P/N 05-01253 ..... $25.85

PIPER FAA / PMA ORIGINAL STYLE AIR VENT

PA-22 Style Air Vent. Can be installed in side window, door skin or side skin. 2-3/4" square with 1-1/2" square opening.

P/N 05-08093 ..... $74.95

AP

NACA INLETS - AIR VENTS

LARGE ROUND FLANGE EYEBALL VENT

This The round flange version of our large square-flange eyeball vent. Fits in a 2-3/4" hole, and has a 3" outside flange diameter.

w/ 2" Scat Adptr., Black.....P/N 05-04064.....$163.50
w/ 2" Scat Adptr., Clear.....P/N 05-04066.....$163.50
w/ Plenum Nut, Clear.....P/N 05-04414.....$161.95
w/ Plenum Nut, Black.....P/N 05-04415.....$161.95

STEINAIR AV125B EYEBALL VENT

These high quality vents have a nylon/ delrin bushing encapsulated between the eyeball and the flange to protect the aluminum! With these vents you simply cut a hole, install the vent and tighten the plenum or retaining nut behind it and hook up the tubing! The vents include everything needed for install. On the small vents you can just directly attach a 2" scat tube to the vent - and on the large vents they have 2" plenums. These will come with a "BAC" part number on them, but that's because they are normally for the cockpits of fighters.

Description	PN	Price
1 1/4" Aluminum Eyeball Vent - (Air outlet size). Anodized BLACK. OD is 2" and allows for direct connection of a 2" scat tube. AV125B	05-04061	$114.95
1 1/4" Aluminum Eyeball Vent - (Air outlet size). Anodized CLEAR. OD is 2" and allows for direct connection of a 2" scat tube. AV125C	05-04063	$118.75
1 3/4" Aluminum Eyeball Vent - (Air outlet size). Anodized BLACK. OD is 2 3/4" (hole size required for mounting). INCLUDES 2" Plenum Cup. AV1625B	05-04084	$128.75
1 3/4" Aluminum Eyeball Vent - (Air outlet size). Anodized CLEAR. OD is 2 3/4" (hole size required for mounting). INCLUDES 2" Plenum Cup. AV1625C	05-04086	$128.75

NACA INLETS

These are in two half pieces. Assembly is required.

Part No.	Model No.	0° Axes or air flow	Maximum width of aft opening at 90° to airflow.	Outlet Size Openings	Price
05-00859	904 MI	11.75"	8.25"	4"	$74.50
05-00862	001 HE	7.75"	4"	2.5"	$48.75
05-00863	903 DA-A	7.5"	3.125"	2.5"	$36.45
05-00864	903 DA-B	7.5"	4"	2.5"	$38.60
05-00865	007 JO	5.75"	2.75"	2"	$34.50
05-04250	009 MU-B	3"	2.75"	N/A	$14.75
05-04249	009 MU-A	6.5"	3.5"	N/A	$15.85

LARGE NACA SCOOP

This large NACA scoop is the largest inlet available anywhere. 0° axes of air flow 17", 90° axes total width, 10 inches with a 9" x 2" outlet or 18 square inches. A separate two-part duct can be purchased separately. This allows the user to take the air directly into a 2" or 4" hose connection. These parts are made with a high impact polycarbonate, formed at 375° F. They will remain stable and not delaminate at a high temperature, like the gel-coated fiberglass inlets.

Cameron NACA inlet 006-TR-A (Scoop Only).....P/N 05-01701..... $78.85
Cameron NACA inlet 006-TR-B (2 Req. for ea.).....P/N 05-01702..... $44.50

DEFROST VENT ASSEMBLY

Defrost vents designed to fit in AA series Grumman airplanes and can also be used in Experimentals. They will fit the original hole pattern on the Grummans, but the area where the scat tube is attached has been changed to a full round 1 1⁄2 dia. These parts have passed FAA burn tests. A sliding piece can be adjusted to vary the amount of air being used to defrost. The mounting area is 2 1⁄4 x 3 3⁄4, with six 6-32 attaching screws, not provided. Comes as a pair.

P/N 05-04062.....$60.00

KOOL SCOOP VENTS

Very popular with Piper owners who need quick, high volume ventilation during ground operations on hot days. Kool Scoop is very easy to mount; simply peel off the adhesive backing sealer and stick it in place on the side window. It will fit any side window vent that does not have a thick frame. Made of top quality plexiglass. Really "scoops" the air from the outside to keep the pilot and passengers comfortable. Window frame not included.

Left hand (Pilot Side).....P/N 05-04076.....$28.75
Right hand (Co-Pilot Side).....P/N 05-04078.....$28.75

AVEOAIR™ - BALL VENTS

AveoAir™ Ball Vents are machined from 2024 aluminium alloy, and these lightweight vents are anodized in your choice of 2 color finishes: Silver or Black.

Installation is simple with 2-piece design, no screws are required as they simple thread together to hold securely.

ONLY AVEO VENTS come with a choice of 3 rear standard SCAT tube coupler diameters so you can optimize your air flow. Choose from 1.5", 1.75" or 2.0" diameters (38 mm, 44 mm, 50 mm).

1.5 Inch			1.75 Inch			2.0 Inch		
Black	05-04198	$102.75	Black	05-04459	$102.75	Black	05-04464	$102.75
Silver	05-04199	$106.50	Silver	05-04460	$99.85	Silver	05-04465	$102.75

AVEOAIR™ - MAXI VENTS

AveoAir™ vents line is the Maxi version. At 44% larger outlet diameter nowyou can get greater air flow in low speed aircraft and low-flow situations. Available with 1.5" or 2.0" diameter rear SCAT adapters and made to the same fine standards as the standard AveoAir™ vents. Features: • CNC machined from 2024 aluminum • Anodized in matte silver or matte black • Single-hand operation • Easy install • Fits all SCAT tubing • Adjustable air flow.

Matte Black 1.5".....P/N 05-04649.....$124.75
Matte Black 1.75".....P/N 05-04935.....$124.00
Matte Black 2".....P/N 05-04650.....$124.00
Matte Silver 1.5".....P/N 05-04651.....$124.00
Matte Silver 1.75".....P/N 05-04936.....$124.00
Matte Silver 2".....P/N 05-04652.....$124.75

AVEOAIR FOR PIPER AIRCRAFT

AveoAir Vents for Piper - the identical top quality air vent from Aveo but with a square mounting plate that is a drop-in replacement for standard plastic Piper aircraft vents.

Features: • CNC machined from 2024 aluminum • Single-hand operation • Easy install • Adjustable air flow

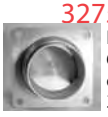
Silver.....P/N 05-05170..... $96.75
Black.....P/N 05-05171..... $96.75

ROUND ALUMINUM EYEBALL AIR VENT (SMALL)

Small round-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 3 oz. and mounts in a 2" round hole. Outside flange diameter is 2-1/4", and has 25 degrees of freedom from the vent centerline. The vent is secured with a mounting ring that will accept a 1-1/2" or 2" scat hose OR a plenum mounting nut. This vent has an opening of 1.2" which is larger then competitive vents that mount in the same size hole.

w/ 1-1/2" Scat Adptr., Aluminum.....P/N 05-04410.....$159.75
w/ 1-1/2" Scat Adptr., Black.....P/N 05-04411.....$154.50
w/ 2" Scat Adptr., Aluminum.....P/N 05-01903.....$168.95
w/ 2" Scat Adptr., Black.....P/N 05-01904.....$168.95
w/ Plenum Nut, Aluminum.....P/N 05-04412.....$151.95
w/ Plenum Nut, Black.....P/N 05-04413.....$168.95

3275 LARGE SQUARE EYEBALL AIR VENTS



Large square-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 5 oz. and mounts in a 2-3/4" hole. The mounting flange is 3" square with a 2-1/2" mounting hole pattern, and has 25 degrees of freedom from the vent centerline (50% more than in our first generation vents.) This is a direct replacement for the "whisperflo" black plastic vents. Flows 30% more air and eliminates 99% of the leakage associated with the plastic vents when closed.

Aluminum ... P/N 05-04068 .....$159.75 Black..... P/N 05-04070.....$153.95

22167 SMALL SQUARE FLANGED EYEBALL VENT

Small square-flange eyeball vent. Made from aircraft-grade 6061-T6 aluminum and hard anodized, it weighs just 3 oz. Mounting flange is 2.20" square, with a hole mounting pattern of 1.70". Vent adjustment is 25 degrees of freedom from the vent centerline, amd has an opening of 1.2" which is much larger than vents typical of this size.

Aluminum.....P/N 05-01905 .....$159.75
Black.....P/N 05-01906 .....$159.75

REPLACEMENT VENTS FOR CESSNA 172

This vent will replace both the upper and lower vent in most Cessna 172. It is available in Black Anodized or Clear Coat Anodized and will attach to a 2" hose or the plastic cup that fit's the lower vent with 1" hose (Adapter cup not included. Reuse the cup off old OEM vent).

Black.....P/N 05-08323 .....$168.00
Clear.....P/N 05-10785 .....$168.75

DOOR LATCHES - BALLISTIC PARACHUTES

UNIVERSAL SPRING LOADED LATCHES

These universal spring loaded latches are designed for aircraft canopies, cockpit doors, and baggage doors. They are available in right hand and left hand models with different striker angle lock pins on the two models. These latches work great on a wide variety of experimental aircraft.

Left hand latch (Lock Pin)
P/N 05-04520 ..... $33.95
Right hand latch (Lock Pin)
P/N 05-04521 ..... $33.95
Also available in retracted bolt lock type latch with blunt striker (left hand and right hand).
Left hand latch (Retracted Bolt Lock)
P/N 05-00895 ..... $35.65
Right hand latch (Retracted Bolt Lock)
P/N 05-00896 ..... $35.65

SLIDING CANOPY RAILS

2 heavy-duty channels of 2014T6 anodized aluminum provide smooth sliding tracks for canopy installations. Length 23" fully retracted, 45" fully extended. 22" travel. Wt:3.5 lbs./pair. Used on Pazmany 1 & 2, Skybolts & others. Instructions for installing these rails in the Pazmany PL-2 are available for $50 from Pazmany Aircraft Corp., P.O. Box 80051, San Diego, CA 92138. These instructions are a useful reference for installing channels in any homebuilt aircraft. P/N 03-49300 ..... $694.00/ea.

BALLISTIC PARACHUTES FOR ULTRALIGHTS AND KIT PLANES

CANISTER - The BRS Canister is waterproof when the original factory seal remains intact, making it the perfect design for exterior installations. With a six year repack schedule and versatile mounting hardware, it is one of the most popular systems.

SOFTPACK - The BRS Softpack is best suited for aircraft manufacturers that require a ballistic parachute mounted inside their aircraft. When mounted internally, this system also has a six year repack schedule..

VLS - Built specifically for aircraft with limited interior space, the VLS (Vertical Launch System) installs on top of the wing or fuselage. Upward firing works well with pusher designed aircraft.

BRS-6 System	Maximum Weight (lbs./kg)	System Weight (lbs./kg)	Dimension L x W x D	Part No.	Price
600 Canister	600/272	22/10	8 x 7 round	13-04071	$3,494.00
600 Softpack	600/272	18/9	10 x10 x5.5	13-04072	$3,413.00
600 VLS	600/272	23/11	18 x 11.5 x7.5	13-04073	$3,687.00
800 Canister	800/363	23/11	21.5 x 7 round	13-04075	$3,999.00
800 Softpack HD	800/363	19/10	10 x 11 x5.5	13-04076	$3,481.00
800 VLS	800/363	25/12	18 x 11.5 x 5.5	13-04077	$3,954.00
1050 Canister	1,050/475	28/13	21.5 x 7 round	13-32445	$4,362.00
1050 Softpack HD	1,050/475	24/11	10 x 11 x5.5	13-32446	$4,132.00
1050 VLS	1,050/475	29/13	18 x 11 x 5.5	13-32445-VLS	$4,486.00
1350 Softpack LSA	1,350/612	29/13	15 x 10.5 x 6	13-04079	$5,077.00
1350 VLS	1,350/612	34/15	18 x 11.5 x 5.5	13-04080	$5,314.00
1350 High Speed	1,350/612	33/15	-	13-04081	$7,095.00
1600 Softpack HD	1,600/726	35/16	20 x 8.5 x 9	13-04082	$6,968.00
RV-7/RV-9	----	44	----	13-14785	$10,247.00

EXPERIMENTAL AIRCRAFT DOOR LATCH

3D view Opening from Exterior Interior View Open Position This door latch was originally designed for a gull wing door with linkage rods extending both forward and aft, however it can be adapted to virtually any style door with appropriately designed linkage rods. The linkage rods are not included.
Features: • Identically keyed locks for set • Armrest flush mount interior handle • Spring loaded, flush mount exterior handle • Spring ball detent for positive open/ closed stop action
Specifications: • Made from 2024-T3 aluminum • Each latch weighs approx. 10 ounces • Dimensions for applicability pictured below • Driver travel approx. 1.25" forward and aft
For linkage rods the following aluminum is recommended: 1/4" x 1/2" 2024T3 ..... P/N 03-00104 ..... $1.65
Left Hand Door Latch ..... P/N 05-01415 ..... $265.00
Right Hand Door Latch ..... P/N 05-01416 ..... $265.00
Set of Left/Right Latches ..... P/N 05-01420 ..... $530.00

RV SLIDING CANOPY LOCK

Lock your RV with confidence. Finally, a lock for your sliding canopy that installs in minutes. Tools required are one 1/4" drill bit and a drill. All you have to do is drill a hole, deburr and start using your lock. No more worries about having your avionics or your personables in someone elses aircraft. P/N 05-01414 ..... $133.95

THE GAS SPRING

The gas spring is a self-contained counterbalance unit consisting of a piston and piston rod in a hermetically closed cylinder. The cylinder is factory-loaded with an inert gas at a given pressure. The outward force generated is continuous and linear at 45 lbs. Ideal for a canopy closure on homebuilts, as designed for George Meads Adventure. Stroke 3.15".

P/N 05-01177 ..... $22.85

DOOR STEWARD™

The Door Steward is an STC and FAA-PMA approved modification for aircraft doors. The modern gas spring greatly improves and replaces easily broken, malfunctioning mechanical type door stops and restraints that become ineffectual with repeated use and age. Pilots enjoy the fact that the Door Steward gently opens and firmly holds the door open. The Door Steward consists of a modern inert gas spring with all the necessary brackets and hardware. Detailed installation instructions are included and make it easy to install and requires virtually no maintenance. Model 200C10
Features: With the Door Steward the door will open and stay open when needed. No more door flopping around in wind gusts or prop wash from taxiing aircraft. The cost is usually much less than repairing or replacing existing OEM door stops. Great on float equipped aircraft when water taxiing.. FAA Approved on many single and light twins.

Application	Part No.	Price
Cessna 170,172, 175, 180, 182, 185, 205, 206, 207 and 210(nonpressurized)	05-00922 Pair	$347.00
Cessna Left Hand Only	05-11841	$175.00
Cessna Right Hand Only	05-11842	$175.00
Beech model Series 33, 35, 36, 55, 56, 58 and 95 Piper Model Series 23, 24, 28, 30, 32, 34, 39, 40 and 44	05-03574	$210.00
Fwd Utility Door Cessna 206, 206H, U206, TU206 and 207	05-03575	$150.00
Cessna 177, 177A, 177B and 177RG	05-04251	$428.00

AP

FIBERGLASS PARTS – COWLING KITS

AP

ULTRALIGHT BUCKET SEAT

Bucket seat for Ultralight aircraft.

Description	Part No.	Price
Bucket Seat Only	15-06383	$61.75
Bucket Seat Kit with Cover and Hardware	15-05070	$195.95
Accessories		
Bucket Seat Bracket 17.25"	15-05066	$9.95
Bucket Seat Bracket 18.5"	15-05067	$10.75
Bucket Seat Cover Only	15-05068	$58.95
Bucket Seat Hardware Bracket Kit	15-05069	$62.80
Bucket Seat Expanding Anchor (Anchor Only)	15-08284	$1.80
Bucket Seat Clamp (Clamp Only)	15-08285	$0.72

HALL BROTHERS VORTEX GENERATORS FOR HOMEBUILTS

These Vortex Generators can be temporarily attached to the wing with tape for testing without harming the wing surface and then moved or attached permanently. This temporary attachment capability allows the pilot to prove out their effectiveness before permanent attachment. The design also gives a generous surface area for bonding.The Vortex Generators are made from .025" 6061-T6 aluminum for maximum durability. Hall Brothers Vortex Generators are not just used for lowering the stall speed. The stall characteristics are normally improved as well as aileron response. Some pilots have reported an increase in the rate of climb of their airplane. Many pilots say that the overall "feel" and handling of their airplane has improved throughout its speed range. The Hall Brothers Vortex Generator Kit includes enough Vortex Generators for a typical homebuilt wing (46 pairs) and stabilizer (16 pairs), tape for temporary attachment, adhesive for permanent attachment and instructions.

P/N 05-01480..... $184.50

VORTEX GENERATORS FOR CESSNA AIRCRAFT

Manufactured under our FAA PMA from aircraft grade aluminum and are alodined to a mil-spec, ready to accept paint before installation. Included in each kit are installation tools, computer cut templates, detailed illustrated drawings and instructions, and Loctite Depend ™Adhesive for installing the vortex generators on your airplane.

Description	Part No.	Price
Cessna 310I/310J	05-04258	$1,950.00
Cessna 402B	05-04259	$1,950.00
Cessna 421C	05-04261	$2,950.00
Cessna (T)210 SER	05-04264	$1,450.00
Cessna P210N	05-04265	$1,450.00
Cessna P210R	05-04266	$1,450.00

STOLSPEED VORTEX GENERATORS

Stolspeed VGs are streamlined for less drag and better appearance than other VGs. Stolspeed VGs have no sharp points and are flexible, so it's easier to wash or cover the wings. The special 3M adhesive is removable without damaging aircraft paint. Stolspeed VGs have a very slim rounded fin to give them good flexibility, and a rounded, tapered base that 'flows' into the wing surface. In clear material they're almost invisible.

80 (Enough for the tail)..... P/N 05-04458..... $64.50
120 (Enough for the main wing plus spares)..... P/N 05-04457..... $96.50

AIR WAVE VORTEX GENERATOR

As air normally flows over the wing of an aircraft in flight, the air "sticks" to the surface of the wing. This adherence to the wing's surface produces lift. If the airflow loses its adherence and separates from the wing, aircraft performance can suffer in the form of increased drag, loss of lift and higher fuel consumption. The kit contains 100pcs which is enough to do the wings. They are made from a durable poly carbonate clear material with UV protective additive. The kit comes with the instructions of where and how to attach them. The only other thing you will need is the glue. ..... P/N 05-04662..... $59.75

COWLING/HOOD SCOOPS INLET/EXIT SCOOPS

BLI-16.9A..... 05-04306 ..... $69.85

BLI-16.9B..... 05-04308 ..... $56.75

BLI-24.1A ..... 05-04305 ..... $69.85

BLI-24.1B ..... 05-04304 ..... $56.75

CARBON FIBER FARING

This light weight, infused aerospace carbon fiber fairing is perfect for finishing off those items that protrude from your airframe. Clean up the air flow and be pleasing to the eye. Perfect to clean up: cables; trim control rods; overflow hoses; general aerodynamic cover. This product is now supplied in a black carbon finish - NOT white gel coat as shown. Sizes: 1-5/8" plus flange. Length 2-5/8" plus flange. Depth 7/8" 22mm. P/N 05-04863..... $23.90

CARBON FIBER REPLACEMENT COWLINGS FOR CESSNAS

This line of carbon fiber cowlings are a part for part replacement for Cessna cowlings. These cowlings install just like the original Cessna parts, however no hardware is provided. North Central Aircraft Products are made of the finest quality carbon fiber and resin. Complete cowls are available on request.

Cessna 172 products are STC-PMA pending as of Sept. 2012.
Cessna 182 products are STC-PMA approved.

172 Series - Upper Nose Cap - 300				
Year	Serial No.	Description	Part No.	Price
56-58	28000-36965	Std. Nose Cap	05-04664	$850.00
59-60	36966-47746	Elliptical Nose Cap	05-04665	$815.00
61-65	47747-53392	1/4 Nose Cap-Cont.	05-04666	$270.95
77-81	67585-75034	Std. Nose Cap - Lyc. Single Light	05-04667	$760.00
75-76	63459-67584	Std. Nose Cap - Lyc. Dual Light	05-04668	$760.00
82-86	75035-76673	Std. Nose Cap- Camloc-Lyc.	05-04669	$760.00
83-85Q	75869-76516	Std. Nose Cap- Camloc-Lyc.	05-04670	$760.00

172 Series - Lower Nose Cap - 600				
Year	Serial No.	Description	Part No.	Price
56-58	28000-36965	Std. Center Piece Nose Cap	05-04671	$850.00
59-60	36966-477-46	Elliptical Nose Cap	05-04672	$815.00
61-65	47747-53392	Cont. 3/4 Nose Cap	05-04673	$730.00
66-67	53393-67584	Cont. Standard Nose Cap	05-04674	$730.00
68-81	56513-75034	Std. Nose Cap - Lyc. No Light	05-04675	$730.00
82-86	75035-76673	Std. Nose Cap - Lyc. No Light	05-04676	$730.00
71-74	59224-63458	Std. Nose Cap - Lyc. Single Light	05-04677	$730.00
75-81	63459-75034	Std. Nose Cap - Lyc. Single Light	05-04678	$730.00
74	61899-63458	Std. Nose Cap - Lyc. Dual Light	05-04679	$730.00
75-76	63459-67584	Std. Nose Cap - Lyc. Dual Light	05-04680	$730.00
83-85	75869-76516	Std. Nose Cap - Lyc. No Light	05-04681	$730.00

180/182 Series - Upper Nose Cap - 300				
Year	Serial No.	Description	Part No.	Price
53-56	30000-32661	Upper Nose Cap- Ctr. Nose- Screws	05-04682	$790.00
57-59 C182 56-58	32662-50661 33000-51556	Upper Nose Cap- Elliptical Nose- Screws	05-04683	$790.00
60 C182 59-60	50662-50911 51557-53007	Upper Nose Cap - 185 Style - Screws	05-04684	$990.00
61-68	50912-51980	Upper Nose Cap - 185 Style - Camloc	05-04685	$990.00
68-81	51981-53203	Upper Nose Cap - Rev. CL Nose RH to Dzus	05-04686	$990.00

180/182 Series - Lower Nose Cap - 600				
Year	Serial No.	Description	Part No.	Price
53-56	3000-32661	Lower Nose Cap- Ctr. Nose- Screws	05-04687	$930.00
57-59 C182 56-58	62662-50661 33000-51556	Lower Nose Cap- Elliptical Nose- Screws	05-04688	$810.00
60 C182 59-60	50662-50911 51557-53007	Lower Nose Cap - 185 Style - Screws	05-04689	$1,040.00
61-68	50912-51980	185 Style - Camloc	05-04690	$1,040.00
68-73	51981-52284	Lower Nose Cap - Rev. CL Nose RH to Dzus	05-04691	$1,040.00
73-81	52285-53203	Lower Nose Cap - Addes Landing Lights	05-04692	$1,350.00

Please provide aircraft N number and serial number when ordering.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FIBERGLASS COWLINGS

All parts are aircraft quality, hand layed for uniform thickness and light weight. Items are finished with grey primer gel coat which minimizes sanding and eliminates the need for primer paint.
Note: Light sanding is required to remove mold release wax residue from surface of all fiberglass items prior to painting.

MC-1A NOSE COWL

Styled after the Piper Comanche, this cowl can be used on just about any homebuilt powered by the Lycoming engine. It is made in two parts, allowing the easy removal of the cowl without having to remove the prop. Used on the following airplanes: Starduster I and II, Playboy, EAA Bipe, Jodel D-11, Tailwind, Tempete & the Skybolt. Measures 35" wide by 21" high. Will accommodate a spinner approx. 12" in dia. P/N 05-01180.....$92.00

MC-1B NOSE COWL

Similar in shape and dimensions as the MC-1A cowl except, it is manufactured as a one piece unit for those who prefer a cleaner front end. The MC-1B is a few inches larger than the MC-1A.
P/N 05-01181..... $112.95

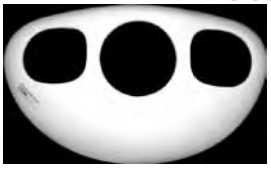
MC-2 NOSE COWL

This design can be used with most any Continental or Lycoming engine. Used on the original Smith Miniplane but has been installed on the Pitts, EAA Bipe, Playboy, Flybaby & Baby Great Lakes. Measures 35"wide by 19.5" high.Face of center opening 8-1/2" O.D.
P/N 05-01182..... $114.95

MC-3A NOSE COWL

Suitable for just about any Lycoming powered aircraft, this cowl comes equipped with a bump that conceals the starter motor. It is the standard Pitts Special cowl but has been installed on these aircraft: Mong, Miniplane, Playboy, Emeraude, Playmate, Baby Ace, Junior Ace, EAA Bipe, Baby Great Lakes, Skyhopper and the Falconar F-11 & 12 series. Measures 35-1/2" wide and 22-1/2" high. Center opening 8-1/ 2" dia. P/N 05-01183..... $114.95

MC-3B NOSE COWL



Same shape and size as used on the Piper PA-14. Can be used on the same aircraft as listed for the MC-3A design. For builders not wishing to use an electrical system and is seen on most Pitts Specials built for competitive aerobatics. 35" wide x 21" high. Center opening 9-1/4" dia. P/N 05-01184 ..... $114.95

MC-10 NOSE COWL

For installation on Tailwind or Cougar. Used with 4" prop extension. Shape rounds out the boxy appearance of the standard design. Size: 35"w x 22.5"h. Has been installed on Starduster I and various Lycoming powered homebuilts. Face of center opening 11-3/4" O.D.
P/N 05-01185 ..... $124.95

QUICK RELEASE PINS

These pins of stainless steel, are made to exacting standards. Pushing the button on top, it contracts and releases two (or four) balls at the end of the shank. These balls lock onto and release from the part for fast removal. The following types and sizes are most commonly used for hang gliders and not for structural aircraft. Request quote on special sizes (25 piece minimum).
Less 10% for 12, Less 15% for 25, Less 20% for 50. May be assorted.

Part No.	Alternate Part No.	MS Part No.	Head Type	Shank Dia.	Leng.	Price
04-01486	LG4C-T-0.343	---	TEE	1/4"	0.343"	$17.75
04-01473	LG4C-T-1.40	MS17985-414	TEE	1/4"	1.400"	$14.50
04-01487	LG4C-T-2.10	MS17985-421	TEE	1/4"	2.080"	$21.50

MC-3C NOSE COWL

Identical to the MC-3B, but, has an opening for an oil cooler. Measures 35" wide by 21" high.
P/N 05-01186 ..... $114.95

MC-4 NOSE COWL

This nose cowl was designed for the T-18 pressure cowl system. A 4-inch prop extension is required and it is generally used with the MC-5 Bottom Cowl. Measures 36" wide by 20"high. Face of center opening 12-1/2" O.D.
P/N 05-00551 ..... $114.95

MC-7 NOSE COWL

Originally made for the Thorp T-18, this cowl has been used on several other types. The starter ring is enclosed when used with the Lycoming. Makes a nice front end on the CA-61 & CA-65. Measures 35"W by 19.5" high. Face of center opening 13-3/8" O.D.
P/N 05-01176 ..... $114.95

CAMLOC ACCESS DOORS FOR WHEEL PANTS

These 1" diameter spring loaded access doors can be riveted into your wheel pants. They open inward, so that using an appropriate tool, you can check pressure or inflate your tires easily without removing the wheel pants. Made of stainless steel which can be polished if desired. P/N 05-02124..... $22.75 ea.

DZUS COWL LATCHES

These Dzus "over the center" type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts. Available in 2 styles as shown.

MODEL #1

These Dzus over the center type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts.
Model I latch: This latch provides 700 lbs. Ultimate strength and 100 lbs. Working strength. Pull up ability is 0.6 inch. Mounting holes will accept .156 in. diameter rivets or #6 round head screws. Order strikes separately.

Part No.	Description Dimensions (closed)	Price Ea.
05-01187	Cowl Latch Model I	$2.90
05-01188	Latch Strike C8	$0.65
05-01189	Latch Strike C7	$0.57

MODEL #2

These Dzus over the center type latches are used extensively on cowl doors and other applications on aircraft such as Cessna, Piper, Grumman, and many homebuilts.
Model II latch: This latch provides 220 lbs. of ultimate strength and 45 lbs. of working strength. Pull up ability is .2 inch. Mounting holes will accept .156 in. diameter rivets or #6 round head screws. Order strikes separately.

Part No.	Description Dimensions (closed)	Price Ea.
05-01190	Cowl Latch Model II	$3.95
05-04183	Latch Strike C9	$0.95
05-04184	Latch Strike C2	$0.63

FLUSH LATCH

The H-5000-2 style latch is a unique spring-loaded, trigger action latch for cowling and access doors. Made of corrosion resistant steel. Rivet or spot weld to structure. Bolt Offset: .132. Trigger Offset: .102. Max. Depth: 1.23
H-5000-2 P/N 05-11830 ..... $117.65
New Surplus H5000-2
P/N 05-01017 ..... $49.50

AP

FIBERGLASS COMPONENTS

AP

MC-6 NOSE CHEEKS

From the latest design of John Thorp, this is a 2 piece cowl used on the T-18. Can be adapted to most homebuilts where the builder wishes to use cheeks. They have been installed on the Midget Mustang as well as the Miniplane. Makes a fine nose section.

P/N 05-01213 ..... $69.75

MT-1 WING TIPS

Manufactured from the original T-18 plans and come ready to slip over the ends of the wing. Nav. lights are normally installed by notching the leading edge corner of these fairings and installing Plexiglass.

P/N 05-01214 ..... $198.50

MC-5 BELLY PAN

Designed to work in conjunction with the MC4 Nose Cowl. This is the most popular combination being used today and it gives your T-18 all the compound curves and beauty it deserves. P/N 05-00025 ..... $106.75

CARBURETOR INTAKE SCOOP

Carburetor intake scoop with 4-1/4" x 8" rectangular opening. P/N 05-22500 ..... $49.85

HEAD REST

Originally designed for the Smith Miniplane but can be used on other bipes.

P/N 05-22100 ..... $31.75

BABY GREAT LAKES COWL

Fiberglass Cowl set fits Baby Great Lakes, Super Baby Great Lakes, and Buddy Great Lakes. Top and Bottom Cowl halves sold separately.

Dimensions:

33"x29"x9-1/2" (PN 05-02883) 33"x33"x19" (PN 05-02884)

Top Nose Cowl

P/N 05-02883 ..... $349.00

Bottom Nose Cowl

P/N 05-02884 ..... $398.00

BUDDY BABY GREAT LAKES SEAT

This fiberglass seat was designed to fit the Baby Great Lakes aircraft and is recommended by the designer. Dimension: 26"x30"x19"

P/N 05-02885 ..... $250.00

GEL-COATED FIBERGLASS WHEEL PANTS

Keep gravel, mud, dew and grass out of your prop, off your wings and off your face with these easy-to repair fiberglass reinforced polyester wheel pants. Supplied in gel-coated finish, they have a small seam along the top edge, easily removed by sanding, if desired. Sorry, no mounting hardware is included. Easy to cut and customize. White, red, black.

Wheel Pant Dimensions					
Size	Width	Height	Length	Opening	Weight
4"	5	9	22	4.4X12	1
5"	7	9	23	5.5X13.75	1.3
6"	8	9	28	8X15.75	11.5

Description	Part No.	Price
4" White Flat	06-01298	$109.95
5" White Flat	06-01293	$116.95
6" White Flat	06-01294	$125.95
4" White Aero	06-01299	$109.95
5" White Aero	06-01296	$125.75
6" White Aero	06-01295	$125.95
4" Red Flat	06-01601	$109.95
6" Red Flat	06-01304	$125.95
4" Red Aero	06-01602	$109.95
5" Red Aero	06-01603	$116.95
6" Red Aero	06-01604	$125.95
4" Black Flat	06-01605	$109.95
5" Black Flat	06-01606	$116.95
6" Black Flat	06-01607	$125.95
4" Black Aero	06-01302	$150.95
5" Black Aero	06-01297	$158.95
6" Black Aero	06-01301	$167.95

BUCKET SEATS

For Starduster or Skybolt. Flat Gray finish, 18" wide. Can be upholstered or used plain. Contoured bottom for parachute. These are not chopped glass seats. Hand layed up for extreme lightness. Wt. 3 lbs. 10 oz.

Note: This oversized item ships in a 21 x 21 x 21 box with a dimensional weight of 48 lbs. (56 lbs internationally)

P/N 05-22600 ..... $73.25

TURTLE DECK

Fits the Acroduster or Skybolt. With flat mounting pad to accommodate a VHF antenna. Approx. Height 19" at front, 13" at back. Overall length, approximately 57".

P/N 05-22200 ..... $124.95

HOERNER DESIGN WING TIPS

These wing tips are constructed of hand laid-up fiberglass which is extremely strong, has great impact strength, and is resistant to chemicals. The Hoerner design of these wing tips reduce the vortex that emanates from the trailing edge of the wing tip thereby reducing drag on the aircraft, leaving more energy available for lift and speed. Stall speed is decreased and lateral stability is improved. You will see increased cruise speed, more positive aileron control, increased rate of climb, decreased take-off distance, and improved appearance with these tips. All STC and approval data is furnished.

Cherokee Straight Wing Tips
PA-28 140 thru 200R models.
P/N 05-90000 ..... $783.00 pr.

Cherokee Taper Wing Tips
PA-28 151 thru 236 models
P/N 05-91000 ..... $572.00 pr.

Cessna Wing Tips
140A, 150, 170B, 172, 175, 180, 182,185,210 (pre 1974 models only)
P/N 05-94000 ..... $617.00 pr.

Comanche Wing Tips
All singles and PA-30 twins.
P/N 05-92000 ..... $625.00 pr.

Cherokee Stabilator Tips
PA-28 taper and straight wings
P/N 05-93000 ..... $388.95 pr.

Bonanza Wing Tips
35 series thru P models
P/N 05-95000 ..... $821.00 pr.

Other Products:		
DESCRIPTION	PART NO.	PRICE
Aztec & Apache Wing Tips (PA-23 all models)	05-96000	$2,875.00
Apache Dorsal Fin (PA-23 150&160)	05-97000	$795.00
Beech Wing Tips	05-00769	$623.00
Piper Tailcone (PA-28 & PA-32)	05-98000	Call for Price
Piper Dorsal Fin (PA-28 & PA-32)	05-99000	Call for Price
Cherokee Taper Wing Tips C/W Replacement	05-02599	$573.00
Cherokee Dorsal Fin Fwd.	05-02601	$186.95
Cherokee Dorsal Fin Aft.	05-02602	$212.95
Cherokee Tail Cone Upper	05-02603	$219.95
Cherokee Tail Cone Lower	05-02604	$239.95
Cessna Wing Tips	05-02605	$514.00
Aztec/Apache Tip Tanks Hoerner Style	05-02606	$9,997.00
Apache Windshied	05-02607	$1,469.95
Seneca Wing Tips	05-02608	$703.00
Seneca Stabilator Tips	05-02609	$394.95

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Prices Subject to Change Without Notice

WHEEL FAIRINGS

All wheel fairings furnished with reinforcing bulkheads for added stability and cleanliness.

MF-1A - 5:00 X 5 fairing that is small and compact. The same shape and size as the early model Cessna 150 & measures 26" long by 7" wide. Has been used on the CA-61, Tailwind, T-18, Baby Ace, Cougar, or any homebuilt that requires this size.
P/N 05-01215 .....$198.50 Pair

MF-2 - 5:00 X 5 teardrop style as used on the later model Cessna 150. Measuring 36" by 7", it has been installed on Tailwinds, Smyth Sidewinder, Cougar or any wheel this size.
Overall size: 35"L x 7-1/2"W
Opening Size:7.5"W x 151/2"L
P/N 05-01216 .....$204.95 Pair

MF-3 - 5:00 X 5 with the long, narrow profile. A standard on Pitts Specials, Acro Sport, T-l 8, Cassutt & Midget Mustang. Truly a universal shape.
Overall size: 39"l x 7.5"w Opening Size:4-3/4"W x 101/2"L
P/N 05-01217 .....$198.50 Pair

MF-4 - 5:00 X 5 Thorp T-18 fairing. This style was one of our original developments specifically for the T-18 and has proven to be very popular. Like all other listed pants, it will fit any wheel this size.
Overall size: 31.5"L x 7-1/2"w
Opening Size:14.75"wx 7"L
P/N 05-01218 .....$198.50 Pair

MF-5 - 6:00 X 6 wheel fairing in the same shape as the J-3 Cub but, scaled down to fit this size wheel. Popular on the bi-planes, Spezio and the parasols. Gives a very classic look to your airplane.
Overall size: 30"L x 9-1/2"W
Opening Size: 7-1/2"W x 18-1/2"L
P/N 05-01219 .....$198.50 Pair

MF-6 - 6:00 X 6 fairing styled after the late model Cessna 172 and is used on just about any designed aircraft. Measure 42" by 8" and are very pretty.
Overall size: 44"L x 8-1/4"W.
Opening Size: 8-1/4"W x 23-1/4"L
P/N 05-01220 .....$198.95 Pair

MF-7 - 6:00 X 6. Same size and shape as the Piper Cherokee fairings. A standard on the Stardusters, Skybolt and used on m any other designs.
Overall size: 37"L x 8"W
Opening Size: 13-1/2"W x 7"L
P/N 05-01221 .....$198.50 Pair

MF-8 - 5:00 X 5 pant. Almost the same dimension as the MF-3 however, has more of a point on the tip. Also popular on the Pitts, Cassutt, T-18 and Midget Mustang.
Overall size: 37-1/2"L x 8"W
Opening Size: 14-3/4"W x 6"L
P/N 05-01222 .....$198.50 Pair

MF-9 - J-3 Cub design for any biplane or parasol using the larger size wheels.
Overall size: 29"L x101/2"W
Opening Size:8-1/4"Wx10"L
P/N 05-01223 .....$199.75 Pair

MF-10 - 7:00 X 6. For aircraft using the larger wheels and also for the Stinson or Funk. Much lighter than the factory originals.
Overall size: 31"L x 11"W
Opening Size: 19"L x 10"W
P/N 05-01224 .....$198.50 Pair

MF-11 - 6:00 X 6 wheel fairings. Same size and shape as used on the Tripacer, Pacer or Colt. More streamlined design than the MF-9. A nice installation on the Super Cub w/ 8.00 x 4 wheels.
Overall size: 43"L x 9-1/2"w
Opening Size: 9.5"w x 18.5"L
P/N 05-01225 .....$198.50 Pair

MF-12 - 5:00 X 5 RACING FAIRINGS. Fits the V-Witt, Cassutt, Owl or any Formula One, Formula V or Bi-plane using this size wheel. Race proven.
Overall size: 40"L x 7-1/2"W
Opening Size: 4.5"W x10-3/4"L
P/N 05-01226 .....$198.50 Pair

WHEEL PANT COVERS

Stop tow-bar wheel pant scuffing. & Avoid costly wheel pant repainting. Available in standard black, navy or burgundy. Fits models: Cessna 172 | 182 | 206 Cherokee

- Made from heavy-duty vinyl
- Padded backing
- Attaches quickly using Velcro(tm)
- Stores easily
- Personalization available

Cover Navy.....P/N 05-03048.....$74.85
Cover Black.....P/N 05-03049.....$78.95
Cover Burgundy.....P/N 05-03050.....$69.95

PA28/PA32 REFINED SPEED PANTS

FAA approved Laminar Flow Speed Pants will add up to 10.5 mph over bare wheels and up to 8 mph over stock wheel pants for all Piper PA-28 and PA-32 aircraft models. A special pressure recovery design improves rate of climb with most installations.
At 10 pounds, these second generation Speed Pants are lighter and up to 5 times stronger than conventional Piper wheel pants. They are made of three layers of hand-laid, 10 ounce fiberglass which is oven cured with a high strength resin. Additional layers of cloth are applied to stress areas. A removable panel allows easy access to brakes. Wing to wheel fairing improve the aesthetics of the main gear.
P/N 05-03627.....$3,731.00

F. ATLEE DODGE REPLACEMENT PARTS

F. Atlee Dodge has been providing quality aviation services since 1957, known for modifications to Super Cubs and many other types of aircraft, along with supplying a wide selection of general aviation aircraft parts. Products such as: Engine Cowlings, Exhaust Systems, Heaters, Folding Seats, Long Range Fuel Tanks, Float Fittings, Skis & Ski Rigging Parts, Enclosed Baggage Compartments, Shoulder Harnesses & Attach Mounts, Custom Steps & Stainless Steel Handles, Super Cub Landing Gear Components, Super Cub Tailfeathers, Standard & oversize, and External Load Modification. It is emphasize that some of these products are intended to provide components primarily for non-certificated/experimental aircraft, and other possible non-aviation uses. Just because it fits doesn't make it appropriate for aircraft, please be sure to check with the FAA if using outside the parameters of experimental aircraft. When requesting STC Documents an additional charge may apply. STC Documents must be requested at time of order and may not be cancelled or returned.

A/C Type	Description	FAA PMA	STC	OEM Part No.	Part No.	Price
150	RH Tailpipe			K0450338-66	05-07837	$126.75
150	LH Tailpipe			K0450338-67	05-07839	$126.75
150	RH Muffler			K0450400-26	05-07841	$416.00
150	RH Muffler			K0450400-26M	05-07843	$416.00
150	LH Muffler			K0450400-3	05-07844	$416.00
150	LH Riser			K0450400-69	05-07847	$126.75
150	RH Riser			K0450400-70	05-07849	$74.75
150	RH Riser			K0450400-74	05-07851	$74.75
150	152 MUFFLER			K0454009-6	05-07852	$626.00
170	Muffler			KAVCON-01	05-07853	$689.00
172	Right Rear Riser			K1754007-1	05-07861	$234.95
172	Left Rear Riser			K1754008-1	05-07862	$239.95
172	Left Front Riser			K1754009-1	05-07863	$239.95
172	Right Front Riser			K1754010-1	05-07864	$239.95
180	Left hand collector	N	Y	0750290-23	05-07866	$830.00
170, 180, 185, 206	Water Rudder - Lift Handle	N	N	3359-1	05-07797	$95.80
170/172	Right hand muffler			K0550157-32	05-07858	$651.00
170/172	Riser			K0550157-7	05-07857	$74.75
170/172	Riser			K0550157-8	05-07856	$126.75
170/172	Left hand muffler			K0550157-9	05-07854	$651.00
170/172	172/175 MUFFLER			K0550176-59	05-07859	$626.00
180, 185, 206, 207	Heat Shields Intake Hose	Y	N	3274	05-07623	$22.50
180/182	Muffler			K0750130-12	05-07873	$530.00
180/182	Muffler			K0750130-9	05-07874	$543.00
180/182	Collector STC'd			K0750130M-48	05-07871	$963.00
180/182	Collector 12.5"			K0750161-67A	05-07868	$785.00
180/182	Collector 13"			K0750161-67B	05-07869	$785.00
180HP	Fuel Caps	N	N	3267-180	05-03458	$126.75
206/207/210	Muffler RH			K1250251-13	05-07878	$524.00
206/207/210	Right Hand Collector			K1250264-2	05-07877	$753.00
28-140/150/160/180	Left Front Stack			K63726-02	05-07894	$505.00
28-140/150/160/180	Right Rear Stack			K63726-03	05-07891	$505.00
28-140/150/160/180	Right Front Stack			K63726-04	05-07892	$252.95
28-140/150/160/180	Left Rear Stack			K63726-05	05-07893	$252.95
28-150/151/160/161/180/181	Left Front Riser			K35300-00	05-07901	$181.75
28-150/151/160/161/180/181	Left Rear Riser			K35301-00	05-07902	$228.95
28-150/151/160/161/180/181	Right Front Stack			K62230-00	05-07898	$228.95
28-150/151/160/161/180/181	Right Rear Stack			K62232-00	05-07899	$181.75
28-150/151/160/161/180/181	Muffler			K66894-00	05-07897	$305.00
28-150/151/160/161/180/181	Piper 28-140 Muffler			K99482-00	05-07904	$683.00
28-150/151/160/161/180/181	Piper 28-180 Muffler			K99482-02	05-07906	$683.00
28-235	Muffler			K65012-00	05-07909	$572.00
28-235	Left hand stack			K65038-00	05-07907	$753.00
28-235	Right hand stack			K65039-00	05-07908	$714.00
28-235	Muffler			K65813-00	05-07912	$651.00
28-235	Muffler			K68718-03	05-07911	$733.00
28R-180	Muffler			K67517-00	05-07918	$483.00
28R-180	Left Front Riser			K67617-00	05-07913	$211.95
28R-180	Left Rear Riser			K67618-00	05-07914	$211.95
28R-180	Right Front Riser			K67619-00	05-07915	$1,098.00
28R-180	Right Rear Riser			K67620-00	05-07916	$211.95
31-300/310/325	Left hand elbow			K16000-11	05-07926	$131.75
31-300/310/325	Left rear elbow			K16000-13	05-07924	$375.00
31-300/310/325	Right hand elbow			K16000-15	05-07926	$131.75
31-300/310/325	Right rear elbow			K16000-17	05-07925	$375.00
31-300/310/325	Left hand tube			K16000-3	05-07922	$185.75
31-300/310/325	Right hand tube			K16000-5	05-07927	$185.75
31-300/310/325	Right hand assembly			K16825A	05-07921	$1,085.00
31-300/310/325	Left hand assembly			K16826A	05-07919	$1,085.00
31-300/310/325	Upper tailpipe			K40310-08	05-07928	$657.00
31-300/310/325	Lower tailpipe			K40310-09	05-07929	$708.00
31-350	Right rear elbow			K16000-7	05-07932	$377.00
31-350	Right hand elbow			K16000-9	05-07931	$131.75
31-350				K40310-09	05-07933	$657.00
31-350	Upper tailpipe			K40310-10	05-07929	$708.00
32-300	Left Rear Stack			K38137-02	05-07939	$242.95
32-300	Left Center Stack			K38137-03	05-07938	$242.95
32-300	Left Front Stack			K38137-04	05-07937	$242.95
32-300	Right Front Stack			K38137-05	05-07941	$242.95
32-300	Right Center Stack			K38137-06	05-07942	$242.95
32-300	Right Rear Stack			K38137-07	05-07943	$242.95
32-300	Muffler			K67517-00	05-07918	$483.00
32-300	Stack			k68793-00	05-07946	$632.00
32-300	Muffler: Listed as "STEERING HORN:			K68796-00	05-07944	$734.00
C-170	Ski Attach Kit Cessna	N	N	3168-170	05-07738	$416.00

A/C Type	Description	FAA PMA	STC	OEM Part No.	Part No.	Price
C-170	Step Kit Replacement - Strut	N	N	3354-11	05-07758	$108.90
C-170, C-180, C-185	Step Kit Replacement - Side Cowl	N	N	3354-S	05-07756	$109.95
C-170, C-180, C-185	Step Kit Replacement - Handle	N	N	3354-H	05-07757	$108.90
C-170, C-180, C-185	Step Powder Coated White	Y	N	8013-01	05-07754	$543.00
C-170, C-182, C-185	V-Brace - CUSTOM FABRICATED				05-07789	$536.00
C-180	Ski Attach Kit Cessna	N	N	3168-180	05-07739	$416.00
C-180	Step Kit Replacement - Strut	N	N	3354-12	05-07759	$108.90
C-180	V-Brace	Y	Y	180-VBE	05-07788	$671.00
C-180, C-185	Shroud - Muffler	Y	N	4236	05-03478	$398.00
C180-C185	Muffler - Seaplane Extended	Y	N	AD750161-89	05-07686	$875.00
C-185	Collectors	N	N	CES0002	05-07552	$1,232.00
C-185	Collector HD	N	N	CES0003(HD)	05-07553	$1,518.00
C-185	Ski Attach Kit Cessna	N	N	3168-206	05-07741	$416.00
C-185	Step Kit Replacement - Strut	N	N	3354-13.5	05-07761	$108.90
C-206	Exhaust Deflector	Y	Y	3238	05-07568	$555.00
C-206	Ladder - Boarding	Y	Y	3193	05-07652	$1,116.00
C-206	Ski Attach Kit Cessna	N	N	3168-185	05-07742	$416.00
C-206	Tail Pipe Deflector	Y	Y	3238	05-07786	$492.00
C-206	TAILPIPE - LANDPLANE	N	N	LH = AD1250256-7	05-07779	$594.00
C-206	TAILPIPE - LANDPLANE	N	N	RH = AD1250264-6	05-07781	$594.00
C-206	TAILPIPE - SEAPLANE	N	N	LH = AD1242013-1	05-07782	$594.00
C-206	TAILPIPE - SEAPLANE	N	N	RH = AD1242013-2	05-07783	$594.00
C-206, C-207	Muffler - 206 Heavy Duty, LH	Y	N	AD1250250-5	05-07679	$696.00
C-206, C-207	Muffler - 206 Heavy Duty, RH	Y	N	AD1250251-16	05-07681	$467.00
C-206, C-207	Seat Back Frame - Heavy Duty	Y	N	3226	05-07714	$620.00
C-206, C-207	Shroud - Muffler, LH, HD	N	N	AD125250-6	05-07731	$594.00
C-206, C-207	V-Brace	Y	N	AD1242001-18	05-07787	$671.00
C-207	TAILPIPE	N	N	LH = AD1254004-3	05-07777	$351.00
C-207	TAILPIPE	N	N	RH = AD1254004-4	05-07778	$351.00
C-208	Seat Removal Tool	N	N	208-SRT	05-07723	$54.85
C-208	Seat Track Tie Downs	Y	Y	TDC-208	05-07724	$111.95
Cessna	Battery Rack Firewall	Y	Y	8008-01	05-03460	$428.00
Cessna	Clamp - Exhaust 206	Y	N	AD1250259-1	05-07539	$371.00
Cessna	DOOR HINGE PINS - LARGE DIA 1/8	N	N	AD0711038-1	05-07563	$34.60
Cessna	DOOR HINGE PINS - SMALL DIA 3/32	N	N	AD0711001-59	05-07562	$32.50
Cessna	Filler Neck Red. Dia (Shaw) W/O CAP	Y	Y	3188	05-07586	$339.00
Cessna	Filler Neck Red. Dia (Wisco) W/O CAP	Y	Y	3189	05-07584	$467.00
Cessna	JACK PAD	N	N	AD180-JP-2	05-07647	$146.75
Cessna	Seat Jump - Folding	Y	Y	3187-L, -R	05-07722	$3,125.00
Cessna	Seat Track Tie Downs	Y	Y	8006	05-03467	$117.75
Citabria/Bellanca	Front stack	N	N	7-1298	05-07949	$804.00
Citabria/Bellanca	Rear stack	N	N	7-1299	05-07947	$804.00
Citabria/Bellanca	Muffler w/ Tailpipe			K3-1493	05-07952	$365.00
Citabria/Bellanca	Muffler w/o Tailpipe			K4-1104	05-07951	$324.00
DHC-2	Beaver Ladder - Boarding	N	N	N/A	05-07508	$849.00
DHC-2	Beaver Floor Tie Down Attach	Y	Y	3181	05-07511	$594.00
DHC-2	Beaver Strut Assy Door Post	Y	Y	3309	05-07509	$734.00
DHC-2	Beaver Tube - Torque; Tail Wheel Steering	N	N	N/A	05-07512	$1,257.00
DHC-2	Front Fuselage Strut Assy	Y	Y	3309	05-07509	$734.00
DHC-2	Gasket - Inspection Cover	N	N	N/A	05-07613	$19.50
DHC-2	Gasket - Sending Unit	N	N	N/A	05-07612	$22.50
DHC-2	Ladder - Boarding	N	N	N/A	05-07653	$849.00
DHC-2	Seat - Center Row Folding Seat	Y	Y	3180	05-07719	$3,156.00
DHC-2	Seat Belt Tie Down	Y	Y	3181	05-07511	$594.00
DHC-2	Water Rudder Tiller	N	N	N/A	05-07802	$140.75
EDO 2000	EDO 2000 Post & Blade Assy	N	N	N/A	05-07564	$989.00
EDO 2000	Float Pulleys	N	N	N/A	05-07598	$12.50
EDO 2000	Rudder Posts	N	N	N/A	05-07699	$702.00
EDO 2000	Splash Rails Kit 89-8000	N	N	N/A	05-07753	$218.95
EDO 2000	Water Rudder - Blade Assy	N	N	N/A	05-07792	$351.00
EDO 2000	Water Rudder - Blade Only	N	N	N/A	05-07793	$159.90
EDO 2000	Water Rudder - Hinge	N	N	N/A	05-07794	$83.75
EDO 2000	Water Rudder - Posts	N	N	N/A	05-07799	$702.00
EDO 89-2000	Float Splash Rails	N	N	N/A	05-07602	$191.75
EDO 89-2000	Water Rudder - Pickup Handle	Y	N	3359-2	05-07798	$95.75
Helio Courier	Right hand stack			K395-061-001-02	05-07953	$755.00
Helio Courier	Left hand tailpipe			K395-061-001-52	05-07956	$208.95
Helio Courier	Right hand tailpipe			K395-061-001-54	05-07957	$208.95
J3	Right Stack			K70671-00	05-07879	$548.00
J3	Muffler			K71053-02	05-07881	$606.00
J3	Left Stack			K71082-00	05-07882	$548.00
J3	Tailpipe			K74501-00	05-07883	$295.95
J3 & PA-11, -18	Float Fittings - Weld On	Y	Y	3143-18	05-02529	$622.00
J-3 thru PA-18	Shoulder Harness Attach Bracket - Front	Y	N	3232-1	05-07728	$100.75
J-3 thru PA-18	Shoulder Harness Attach Bracket - Rear	Y	N	3232-2	05-07729	$162.95
J-3 thru PA-18	Stick Covers	N	N	3343	05-07767	$242.95
J-3 thru PA-18	Stringers, Large or Small	N	N	1232-162	05-07768	$54.85
J3 thru PA-19	Step Main Landing Gear - Long	Y	Y	3195	05-03461	$292.95
J3 thru PA-22	Fuel Caps - VENTED	Y	Y	3267	05-03459	$87.75
J3 thru PA-22	Remote Compass Mount Bracket	Y	Y	1033	05-07694	$223.95
J3 thru PA-22	Step Refueling	Y	Y	3190-10	05-07762	$108.90
J3 thru PA-22	Step Refueling	Y	Y	3190-11	05-07764	$108.90
J3 thru PA-22	Step Refueling	Y	Y	3190-12	05-03462	$116.75
J-3 thru PA-22	Tail Handles - Weld On	N	N	J20652-000	05-07502	$185.75

F. ATLEE DODGE REPLACEMENT PARTS

AP

A/C Type	Description	FAA PMA	STC	OEM Part No.	Part No.	Price
J-3, PA-11, -18	Water Rudder - Pickup Tubes	N	N	3359-6	05-07803	**$86.75**
J3, PA-11, -18, -19	Main Landing Gear - 1 1/4" Std RH or LH	Y	N	3225-1, -2	05-07661	**$594.00**
J-3, PA-11, -18, -19	Safety Cables MLG - STD	Y	Y	2089-18	05-03463	**$233.95**
PA-11 thru -18	Seat Belt Attach Kit Front	Y	Y	3246	05-07716	**$314.00**
PA-12	Boot Cowling Assy	N	N	12-BC	05-07516	**$1,371.00**
PA-12	Bracket - Lift Strut Reinforcing	Y	Y	3192-12	05-07518	**$73.75**
PA-12	Defroster Kit	N	N	3242-12	05-07558	**$683.00**
PA-12	Firewall - SS	N	N	12-SSFW	05-07589	**$530.00**
PA-12	Firewall - Titanium	N	N	12-TFW	05-07592	**$798.00**
PA-12	Float Fittings - Weld On	Y	Y	3143-12	05-03476	**$912.00**
PA-12	Instrument Panel	N	Y	1034	05-07642	**$479.00**
PA-12	Muffler - PA-12 under repair station	N	N	AD10308-002	05-07682	**$748.00**
PA-12 STC ONLY	X Brace Top Deck - SA02379AK	N	Y	8031	05-07812	**$315.00**
PA-12, -14	Cabane	Y	Y	3166-2	05-07523	**$441.00**
PA-12, -14	Cabane Attach Fittings - Weld On	N	N	3166-2AF	05-07526	**$211.95**
PA-12, -14	Fuel Tank 30.5 Gal RH w/ Kit	Y	Y	3140-516	05-07608	**$3,411.00**
PA-12, -14	Fuel Tank 30.5 Gal LH w/ Kit	Y	Y	3140-516	05-11160	**$3,411.00**
PA-12, -14	Muffler - Hot Rod, PA-12	N	Y	AD10308-HR	05-07683	**$1,844.00**
PA-12, -14	Safety Cables MLG - 3X	Y	Y	3344-12	05-03466	**$293.95**
PA-12, -14	Safety Cables MLG - STD	Y	Y	2089-12	05-03465	**$252.95**
PA-12, -14	Tailbrace Beef Up	N	N	1022-12	05-07773	**$211.95**
PA-12, -14, -18	Shock Strut- 3" EXT	Y	Y	3164-3, -4	05-07658	**$151.99**
PA-12, -14, -18	Shock Strut- STD	Y	Y	3164-1, -2	05-07657	**$151.99**
PA-12, -18	Aircraft Tie Down Loop	Y	N	3218	05-07499	**$60.95**
PA-12, -18	Elevator Square	N		Ron Sullivan	05-07548	**$555.00**
PA-12, -18	Lumber Rack	N	N	12-LR, 18-LR	05-07656	**$734.00**
PA-12, -18	Rudder Square	N		Ron Sullivan	05-07551	**$620.00**
PA-12, -18	Shock Strut- 6" EXT	N	N	3164-5, -6	05-07659	**$201.95**
PA-12, -18	Stabilizer Square	N		Ron Sullivan	05-07549	**$555.00**
PA-14	Instrument Panel	N	N	1034-2	05-07644	**$543.00**
PA-18	Aircraft Tie Down Bracket	Y	Y	3197	05-07498	**$149.85**
PA-18	Baggage - Extended	Y	Y	2103	05-07503	**$747.00**
PA-18	Battery Rack Front Seat	Y	Y	3304	05-04766	**$483.00**
PA-18	Battery Strap	Y	N	3278	05-07507	**$47.85**
PA-18	Blank Panel	N	N	1034-B	05-07646	**$172.75**
PA-18	Boot Cowling Assy	N	N	18-BC	05-07514	**$1,512.00**
PA-18	Boot Cowling Assy - Titanium	N	N	N/A	05-07517	**$2,073.00**
PA-18	Bracket - Lift Strut Reinforcing	Y	Y	3192-18	05-07519	**$73.75**
PA-18	Brake Reinforcing Channel	Y	N	4231	05-07521	**$108.90**
PA-18	Bungee Covers	N	N	BUNGEE COVER	05-07522	**$76.75**
PA-18	Cabane	Y	Y	3166-1	05-07524	**$419.00**
PA-18	Cables Push Pull	Y	N	3310	05-07528	**$61.99**
PA-18	Carb Heat Box	N	N	AD15005-00	05-07529	**$1,257.00**
PA-18	Cargo Nets	N	N	3234	05-07531	**$543.00**
PA-18	Channels - Cowling Lower	Y	N	3277	05-07536	**$105.85**
PA-18	Channels - Cowling Upper	Y	N	3276	05-07537	**$105.85**
PA-18	Defroster Kit	N	N	3242-18	05-07559	**$683.00**
PA-18	Exterior Paneling - Boot Cowl L.H. Rear	N	N	N/A	05-07567	**$50.95**
PA-18	Exterior Paneling - Boot Cowl R.H. Rear	N	N	N/A	05-07566	**$50.95**
PA-18	Fairings	Y	N	AD12274-00	05-07572	**$47.85**
PA-18	Fairings	Y	N	AD12274-02	05-07573	**$47.85**
PA-18	Fairings	Y	N	AD12275-00	05-07574	**$76.75**
PA-18	Fairings	Y	N	AD12275-01	05-07576	**$76.75**
PA-18	Fairings	Y	N	AD11523-00	05-07577	**$60.95**
PA-18	Fairings	Y	N	AD12276-00	05-07579	**$86.75**
PA-18	Fairings	Y	N	AD12276-01	05-07581	**$86.75**
PA-18	Fairings	Y	N	AD11719-00	05-07582	**$80.75**
PA-18	Fairings	Y	N	AD11719-01	05-07583	**$80.75**
PA-18	Filler Neck Repair Kit	N	N	3140-60R	05-07587	**$172.75**
PA-18	Firewall - SS	Y	N	8007-01	05-07588	**$467.00**
PA-18	Firewall - Titanium	Y	N	8007-02	05-07591	**$728.00**
PA-18	Firewall - Titanium w/ Boot Cowl	N	N	18-BC-T	05-07593	**$2,037.00**
PA-18	Fuel Tank 30.5 Gal LH w/ Kit	Y	Y	3140-L	05-07609	**$3,411.00**
PA-18	Fuel Tank 30.5 Gal RH w/ Kit	Y	Y	3140-R	05-11161	**$3,411.00**
PA-18	Headliner	N	N	18-HL	05-07622	**$671.00**
PA-18	Hydrasorb units	N	N	12998-S	05-07627	**$1,257.00**
PA-18	Instrument Panel - w/ Insert	N	Y	1034-1	05-07643	**$479.00**
PA-18	Interior Panel Set (Excludes Upper Wing Panels)	N	N		05-07641	**$722.00**
PA-18	Interior Paneling - LH Center	N	N	12308-05	05-07629	**$113.75**
PA-18	Interior Paneling - LH Front, FWD	N	N	10776-02	05-07628	**$76.75**
PA-18	Interior Paneling - LH Rear	N	N	12444-00	05-07631	**$76.75**
PA-18	Interior Paneling - RH Center	N	N	10930-00	05-07633	**$70.75**
PA-18	Interior Paneling - RH Front	N	N	12311-00	05-07632	**$83.75**
PA-18	Interior Paneling - RH Rear	N	N	12445-00	05-07634	**$108.90**
PA-18	Interior Paneling - Throttle Panel FWD	N	N	12309-00	05-07636	**$177.75**
PA-18	Interior Paneling - Throttle Panel Rear	N	N	12314-00	05-07637	**$47.85**
PA-18	Interior Paneling - Upper Wing RH	N	N	12618-00	05-07638	**$70.75**
PA-18	Interior Paneling -Upper Wing Butt LH	N	N	12617-03	05-07639	**$70.75**
PA-18	Knobs - Mixture	Y	N	3312-1	05-07651	**$12.75**
PA-18	Lifting Eyes	N	N	3217	05-07654	**$98.85**
PA-18	Main Landing Gear - 1 1/2" 3" Ext RH or LH	Y	Y	3284-1A, -2A	05-07664	**$620.00**
PA-18	Main Landing Gear - 1 1/2" Std RH or LH	Y	Y	3225-A1, -A2	05-07662	**$594.00**
PA-18	Main Landing Gear - 1 1/4" 3" Ext RH or LH	Y	Y	3284-1, -2	05-07663	**$620.00**
PA-18	Mount - Oil Cooler LH	Y	Y	6018	05-07674	**$492.00**
PA-18	Mount - Oil Cooler RH	Y	Y	6003	05-07673	**$172.75**

F. ATLEE DODGE REPLACEMENT PARTS

A/C Type	Description	FAA PMA	STC	OEM Part No.	Part No.	Price
PA-18	Mounting Brackets - Alternator	Y	Y	6020	05-07672	**$268.95**
PA-18	Muffler - Hot Rod, PA-18	Y	Y	3241-HR	05-07684	**$1,550.00**
PA-18	Muffler - STD - Heavy Duty	Y	Y	3241	05-03425	**$35.75**
PA-18	Oversize Round Elevator	N	N		05-07556	**$594.00**
PA-18	Oversize Round Rudder	N	N		05-07554	**$696.00**
PA-18	Rear Seat Cross Bar	Y	Y	3146	05-07692	**$242.95**
PA-18	Rear Seat Heater w/ Hose	Y	Y	3175	05-07693	**$747.00**
PA-18	Safari Seat	Y	Y	6151	05-07701	**$747.00**
PA-18	Safety Cables - 3X, LOWER ONLY	N	N	3344-18-LOWER	05-07712	**$185.75**
PA-18	Safety Cables MLG - 3X, WIDE BODY	N	N	3344-18-4W	05-07708	**$236.95**
PA-18	Safety Cables MLG - 3X	Y	Y	3344-18	05-03464	**$239.95**
PA-18	Seat - Folding Front Kit	Y	Y	3186	05-03474	**$356.00**
PA-18	SEAT BOTTOM - FOLDING	N	N	3186-SBL	05-07718	**$92.75**
PA-18	Shroud - Muffler, 2 Piece	Y	Y	3236	05-03456	**$545.00**
PA-18	Shroud - Pre-Heat, 2 Piece	Y	Y	3182	05-03457	**$243.95**
PA-18	Sight Gage 30.5	Y	Y	3286-1	05-07737	**$75.75**
PA-18	Ski Spring - Gold	Y	Y	2127	05-07746	**$197.75**
PA-18	Ski Springs - Silver	Y	Y	2097	05-07747	**$197.75**
PA-18	Strobe Light Mouting Bracket	Y	Y	2087	05-07769	**$214.95**
PA-18	Water Rudder Tiller	N	N	PP1023	05-07801	**$57.90**
PA-18	Winter Front	N	N	WINTER FRONT	05-07809	**$83.75**
PA-18	Front Stack			K12457-12	05-07569	**$824.00**
PA-18	Rear Stack			K12457-13	05-07571	**$849.00**
PA-18 STC ONLY	X Brace Top Deck - SA2011AK	N	Y	3261	05-07813	**$287.95**
PA-18, -19	Header Tanks - Front	Y	Y	3169-1	05-07619	**$339.00**
PA-18, -19	Header Tanks - Rear	Y	Y	3169-2	05-03469	**$372.00**
PA-18, -19	Tailbrace Beef Up	N	N	1022-18	05-07774	**$211.95**
PA-18-150	Dome - Carb Air Filter	Y	N	3281	05-07561	**$149.85**
PA-22	Fuel Tank 30.5 Gal LH w/ Kit	Y	Y	3258	05-11162	**$3,411.00**
PA-22	Fuel Tank 30.5 Gal RH w/ Kit	Y	Y	3258	05-07611	**$3,411.00**
PA-22	Front Stack			K12093-23	05-07888	**$722.00**
PA-22	Rear Stack w/shroud			K13238-05	05-07889	**$938.00**
Piper	Cabin Heater Box	N	N	18-CHB	05-07527	**$365.00**
Piper	Seat Track Tie Downs	Y	N	TDP-31	05-07727	**$111.95**
Piper & Husky MLG	Axe - Survival	N	N	AD-18-SA	05-07502	**$185.75**
	6X Safety Cable Kits / Built to Order			3344-12-6X	05-07709	**$236.95**
	6X Safety Cable Kits / Built to Order			3344-18-6X	05-07711	**$236.95**
	Axel Adapter, Pair	N	N	2079	05-07501	**$211.95**
	Belly Pan Clean Out Kit	Y	N	3285	05-07513	**$287.95**
	Cargo Tie Down Bases	N	N	40000-11	05-07532	**$12.50**
	Cargo Tie Down Hooks - Weld On 4130N	N	N	3234-10	05-07534	**$35.50**
	Cargo Tie Down Rings	N	N	40340-20	05-07533	**$12.50**
	Clamps - Heavy Duty 1/2”	N	N	N/A	05-07542	**$12.50**
	Clamps - Heavy Duty 1/4”	N	N	N/A	05-07543	**$12.50**
	Clamps - Heavy Duty 3/8”	N	N	N/A	05-07544	**$12.50**
	Clamps - Heavy Duty 5/8”	N	N	N/A	05-07546	**$12.50**
	Clamps - Muffler	N	N	N/A	05-07547	**$60.95**
	Clamps Umpco Any Size	N	N	N/A	05-07541	**$13.50**
	Cleveland Wheel & Brake - Will Not Work With Cessna Tubular Style Land Gear	N	N	STC Only	05-07538	**$314.00**
	Exhaust Stack - Front	N	N	K12457-12	05-07569	**$824.00**
	Exhaust Stack - Rear	N	N	K12457-13	05-07571	**$849.00**
	Float Pulley w/ Brackets	N	N		05-07599	**$23.99**
	Float Pulleys w/ Eyebolts	N	N		05-07601	**$59.95**
	FUEL CAP KEEPER w/o CAP	N	N	3267-KPR	05-07607	**$30.50**
	Gasket -Stewart Warner Sending Unit	N	N	N/A	05-07614	**$5.80**
	Gaskets - Gas Cap	N	N	4050	05-07616	**$22.50**
	Gaskets - Gas Cap	N	N	4969	05-07617	**$22.50**
	GUST LOCKS	N	N	AD18-GL	05-07618	**$111.95**
	Heat Shield Engine Mount	N	N	3274-8, -10, -12	05-07624	**$47.85**
	Husky Gear	Y	N	AD45017- 501HD, -502HD	05-07626	**$2,226.00**
	Knobs - Push Pull (Plain)	N	N	3311	05-07649	**$12.75**
	Main Landing Gear - 1 1/2” 6” Ext RH or LH / Built to Order				05-07666	**$722.00**
	Main Landing Gear - HD Cabane for 6X MLG / Built to Order				05-07669	**$467.00**
	Main Landing Gear Bolt Kits	N	N	N/A	05-07668	**$67.75**
	MLG 3X3 - Fabricated Per Customer Request/Needs Cabane				05-07671	**$696.00**
	Muffler - Maul	Y	N	AD5266 (LH)	05-07677	**$1,136.00**
	Muffler - Maul	Y	N	AD5267 (RH)	05-07678	**$1,136.00**
	Muffler Clamp	N	N		05-07676	**$60.95**
	Northern Companion Taildragger	N	N	NC5A	05-04767	**$777.00**
	Northern Companion Tricylce	N	N	NC5B	05-04768	**$776.00**
	Reservoir - for Hydraulic Skis	N	N	2080-S1, -H1, -L1	05-07696	**$331.00**
	Rigging - w/ Springs	N	N	2609-S	05-07697	**$810.00**
	Rigging - w/o Springs	N	N	2609-X	05-07698	**$416.00**
	Right hand collector			0750290-24	05-07867	**$830.00**
	Safety Cable Bolt Kit	N	N	N/A	05-07713	**$29.50**
	Ski / Brake Keepers	N	N	2609-BK	05-07743	**$60.95**
	Ski Plates	N	N	VA1013	05-07751	**$27.50**
	Ski Selector Valve	N	N	2609-SV	05-07744	**$223.95**
	Ski Tabs	N	N	2089-6.125	05-07749	**$12.50**
	Ski Washers	N	N	VA1016	05-07752	**$12.50**
	Washer - Axle	N	N	N/A	05-07791	**$12.50**

PMA PRODUCTS REPLACEMENT PARTS

PMA Products, Inc.
"Producer of Quality Aircraft Parts"

For more than 15 years PMA Products, Inc. has been the reliable, affordable alternative for the highest quality FAA/PMA approved parts for Piper, Beech, Cessna, Embraer, and Pratt & Whitney. In 2006 PMA Products, Inc. received the Leadership Award from MARPA, the Modification & Replacement Parts Association. Aircraft Spruce is proud to offer more than 200 PMA Products Inc. parts to the general aviation community.

Oem	Description	Oem Part No.	Spruce Part No.	Price
Beech / Cessna	Fuel Cap Seal	38241	05-07332	$34.70
Cessna	Fuel/alcohol Pump	476411	05-07373	$319.00
Cessna	Fuel/alcohol Pump	6508091-1	05-07419	$278.50
Cessna	Fuel/alcohol Pump	6508092-1	05-07421	$319.00
Embraer	Back Up Ring	Bds3115-026c	05-07493	$5.35
Lear	Bolt, Main Gear	2341114-3	05-07306	$82.75
Lear	Bushing	2341120-1	05-07307	$41.50
Lear	Bushing	2341127-1	05-07308	$19.50
Marvel Sc	Gasket, Fuel Screen	16-a48	08-06629	$4.98
Mccauley	Carbon Block	B5121	05-07492	$106.75
Mooney	Transducer, Fuel Press.	3060-00017	05-07318	$159.85
Mooney	Transducer, Oil Press.	3060-00018	05-07319	$146.75
Mooney	Transducer, Fuel Press.	880007-501	05-07463	$146.75
Mooney	Transducer, Oil Press.	880008-501	05-07464	$146.75
Piper	Bushing, Landing Gear	14843-016	05-07289	$17.50
Piper	Bushing, Landing Gear	14843-018	05-07291	$19.95
Piper	Bushing, Steering	14976-102	05-07292	$26.70
Piper	Cap, Fuel	16097-000	05-07297	$86.75
Piper	Cap, Fuel	17672-000	05-07299	$128.00
Piper	Bushing, Gear Housing	20737-023	05-07301	$26.55
Piper	Bushing, Nose Gear Idler	20737-032	05-07302	$22.70
Piper	Bushing	20737-040	05-07303	$26.70
Piper	Bushings, Door Mech.	20737-044	05-07304	$21.50
Piper	Fastener	26246-000	05-07309	$29.60
Piper	Cap, Fuel	27221-000	05-07311	$97.75
Piper	Axle, Nose Wheel	31797-000	05-07327	$300.95
Piper	Bulkhead	35323-012	05-07328	$247.95
Piper	Fuel Pump	35328-800	05-07329	$232.95
Piper	Hinge, Aileron	35636-000	05-07331	$100.75
Piper	Bushing, Nose Gear Housing	40250-002	05-07333	$60.75
Piper	Bushing, Flap Roller	41413-005	05-07334	$13.50
Piper	Bushing, Seat Roller	41413-038	05-07336	$24.50
Piper	Bushing, Door Mech.	41413-041	05-07337	$22.75
Piper	Bushing, Main Gear Fork	43256-002	05-07339	$24.90
Piper	Bushing, Main Gear Housing	43256-005	05-07341	$29.75
Piper	Bushing, Nose Gear Housing	43256-006	05-07342	$33.50
Piper	Stall Switch Assembly	450-742	05-07344	$575.00
Piper	Bearing, Rod End	452-334	05-07346	$17.50
Piper	Bearing, Rod End	452-335	05-07347	$21.55
Piper	Bearing, Rod End	452-336	05-07348	$22.85
Piper	Bearing, Rod End	452-368	05-07349	$47.55
Piper	Bearing, Flap	452-387	05-07351	$32.50
Piper	Bearing, Stabilator	452-394	05-07352	$53.80
Piper	Bearing, Rod End	452-412	05-07353	$30.60
Piper	Bearing, Rod End	452-439	05-07354	$60.75
Piper	Bearing, Stabilator	452-538	05-07356	$341.00
Piper	Bearing, Landing Gear	452-575	05-07357	$89.75
Piper	Bearing, Aileron	452-584	05-07358	$28.50
Piper	Bearing, Rod End	452-860	05-07359	$23.85
Piper	Bushing	453-903	05-07361	$14.90
Piper	Static Discharger	456-802	05-07362	$15.90
Piper	Universal	46203-002	05-07366	$1,134.00
Piper	Universal	62834-000	05-10890	$309.00
Piper	Pitot Heater Element	464-356	05-07367	$45.50
Piper	Pitot Heater Element	464-357	05-07368	$47.75
Piper	Pitot Heater Element	464-440	05-07369	$52.75
Piper	Pitot Heater Element	464-441	05-07371	$52.75
Piper	Quad Ring	484-769	05-07374	$4.35
Piper	Quad Ring	484-770	05-07377	$5.35
Piper	Ring Scraper	486-188	05-07378	$13.75
Piper	Transducer, Fuel Press.	486-439	05-07379	$158.75
Piper	Transducer, Oil Press.	486-440	05-07381	$158.75
Piper	Bulkhead	587-330	05-07393	$247.95
Piper	Hinge Pin	62002-002	05-07396	$5.35
Piper	Hinge Pin	62002-003	05-07397	$5.95
Piper	Hinge Pin	62002-004	05-07398	$7.70
Piper	Hinge, Aileron	62371-008	05-07399	$86.75
Piper	Universal	62834-802	05-07401	$272.95
Piper	Bushing, Torque Link	63310-000	05-07402	$18.70
Piper	Barrel, Trim	63530-000	05-07403	$86.75
Piper	Hinge, Tab	63560-002	05-07404	$11.90
Piper	Hinge, Tab	63560-003	05-07406	$14.70
Piper	Capacitor, Alternator	63897-006	05-07407	$46.85
Piper	Bushing, Flap Hinge	63900-019	05-07408	$11.90
Piper	Bushing, Landing Gear	63900-089	05-07409	$12.50
Piper	Bushing, Nose Gear	63900-109	05-07411	$16.50
Piper	Bushing, Nose Gear	63900-122	05-07412	$18.85
Piper	Bushing, Main Gear	65003-041	05-07413	$16.50
Piper	Bushing, Main Gear	65003-044	05-07414	$16.50
Piper	Bushing Nse. Gr. Drag Brce.	65003-045	05-07416	$19.85
Piper	Bushing, Nose Gear	65003-046	05-07417	$26.70
Piper	Shaft, Trim	65246-000	05-07422	$86.75
Piper	Shaft, Trim	65246-002	05-07423	$71.85
Piper	Tube, Nose Strut	65280-000	05-07424	$734.00
Piper	Fuel Pump	65628-800	05-07426	$240.95
Piper	Gasket, Fuel Cap	66815-000	05-07427	$7.50
Piper	Bushing, Torque Link	67026-007	05-07428	$17.50
Piper	Bearing	67026-011	05-07429	$10.70
Piper	Bushing, Main Gear	67026-012	05-07431	$45.50
Piper	Switch, Landing Gear	67411-002	05-07432	$109.80
Piper	Switch, Landing Gear	67411-003	05-07433	$109.80
Piper	Switch, Landing Gear	67411-004	05-07434	$109.80
Piper	Switch, Landing Gear	67411-005	05-07436	$109.80
Piper	Switch, Landing Gear	67411-006	05-07437	$109.80
Piper	Switch, Landing Gear	67411-007	05-07438	$109.80
Piper	Switch, Landing Gear	67411-008	05-07439	$109.80
Piper	Switch, Landing Gear	67411-020	05-07441	$109.80
Piper	Switch, Landing Gear	67411-021	05-07442	$105.75
Piper	Down Limit Switch	95232-000	05-10891	$150.00
Piper	Bushing, Teflon	69790-000	05-07443	$9.85
Piper	Plate, Cowl	69791-000	05-07444	$26.70
Piper	Fitting, Swivel	70371-002	05-07446	$4.75
Piper	Stud Swivel	70371-003	05-07448	$21.50
Piper	Gasket, Fuel Bowl	751-871	05-07451	$7.90
Piper	Bushing, Torque Link	77780-005	05-07452	$21.50
Piper	Strut, Alternator Brace	78483-000	05-07453	$32.50
Piper	Bumper, Nose Gear	79072-000	05-07454	$5.65
Piper	Roller, Flap	86102-104	05-07457	$16.50
Piper	Roller, Flap	86102-105	05-07458	$17.50
Piper	Roller, Flap	86102-106	05-07459	$18.85
Piper	Bulkhead, Spinner	87325-010	05-07461	$335.00
Piper	Roller, Seat	87332-002	05-07462	$19.95
Piper	Bushing, Aileron Hinge	95061-108	05-07469	$10.90
Piper	Bushing, Nose Gear	95061-133	05-07471	$27.95
Piper	Hinge,tab	95864-002	05-07472	$14.75
Piper	Hinge,tab	95866-002	05-07473	$13.55
Piper	Barrel, Trim	96596-002	05-07474	$160.75
Pratt & Whitney	Fuel Transfer Tube	3011155	05-07312	$33.50

Oem	Description	Oem Part No.	Spruce Part No.	Price
Pratt & Whitney	Bearing, Rod End	3011587	05-07313	$96.75
Pratt & Whitney	Fuel Transfer Tube	3020030	05-07314	$59.90
Pratt & Whitney	Gasket, Fuel Nozzle	3029566	05-07316	$1.55
Pratt & Whitney	Gasket, Fuel Nozzle	3029678	05-07317	$2.75
Pratt & Whitney	Retainer Plate	3103345-01	05-07321	$89.50
Pratt & Whitney	Diaphragm	3103346-01	05-07322	$180.75
Pratt & Whitney	Diaphragm	3103347-01	05-07323	$180.75
Pratt & Whitney	Shim, Prop Shaft	3110998-01	05-07324	$113.75
Pratt & Whitney	Gasket	3118962-01	05-07326	$14.70
Pratt & Whitney	Gasket, Fuel Nozzle	Ms9371-16	05-07497	$2.11
Raytheon / Beech	Seat Foot	100-530448-5	05-07239	$79.95
Raytheon / Beech	Seat Foot	100-530448-7	05-07242	$79.95
Raytheon / Beech	Bushing, Nose Gear	100-820017-1	05-07243	$14.70
Raytheon / Beech	Bushing, Landing Gear	101-810014-1	05-07244	$53.75
Raytheon / Beech	Bushing	101-810014-3	05-07246	$53.75
Raytheon / Beech	Bushing, M. Torque Link In Gr	101-810024-3	05-07252	$26.70
Raytheon / Beech	Torque Link Bushing	101-810024-5	05-07253	$37.50
Raytheon / Beech	Pin, Torque Link	101-810025-1	05-07254	$199.85
Raytheon / Beech	Bolt	101-810090-1	05-07257	$126.80
Raytheon / Beech	Bolt	101-810090-3	05-07258	$120.75
Raytheon / Beech	Bolt, Main Gear Drag Brace	101-810145-1	05-07261	$227.95
Raytheon / Beech	Bolt, Main Gear Drag Brace	101-810146-1	05-07262	$213.95
Raytheon / Beech	Door Closure Roller	105739x-yn1437	05-07263	$19.90
Raytheon / Beech	Bushing, N. Torque Link Ctr	105740x-ya0630	05-07264	$13.50
Raytheon / Beech	Bushing, M. Torque Link Ctr	105740x-ya1625	05-07266	$29.50
Raytheon / Beech	Bushing	105740x-yd0160	05-07267	$39.90
Raytheon / Beech	Bushing	105740x-yk0563	05-07269	$29.50
Raytheon / Beech	Bushing	105740x-yn0520	05-07271	$46.70
Raytheon / Beech	Bushing, N. Torque Link Ctr	105740x-yn0625	05-07272	$17.50
Raytheon / Beech	Bushing, M. Torque Link Ctr	105740x-yn0677	05-07273	$21.50
Raytheon / Beech	Bushing, Gear Door	105740x-zu0260	05-07274	$18.85
Raytheon / Beech	Bushing, Nose Steering	105740x-zv0312	05-07276	$7.35
Raytheon / Beech	Bushing, Main Drag Link Ctr	114-810038-1	05-07277	$45.50
Raytheon / Beech	Bushing, Mn Drag Link In Gr	114-810042-1	05-07279	$41.50
Raytheon / Beech	Bushing, Mn Drag Link In Gr	114-810049-3	05-07281	$54.75
Raytheon / Beech	Bushing, Nose Attach Lug	114-820113-1	05-07282	$26.70
Raytheon / Beech	Steering Roller	114-820062-1	05-07283	$19.95

Oem	Description	Oem Part No.	Spruce Part No.	Price
Raytheon / Beech	Bushing	115-610019	05-07284	$21.50
Raytheon / Beech	Bushing, Main Gear	115-810064-1	05-07286	$69.75
Raytheon / Beech	Bushing	115-810066-3	05-07287	$38.00
Raytheon / Beech	Thrust Washer	115-810074	05-07288	$21.50
Raytheon / Beech	Switch, Stall	151	05-07294	$534.00
Raytheon / Beech	Fuel Cap Seal	457-98	05-07363	$21.50
Raytheon / Beech	Bushing, Torque Link	45-815013	05-07364	$37.50
Raytheon / Beech	Fuel Pump	476284	05-07372	$306.00
Raytheon / Beech	Washer	50-105000-3	05-07382	$4.65
Raytheon / Beech	Wiper Blade(refill Only)	50-384082-1	05-07383	$22.85
Raytheon / Beech	Bushing	50-524476-1	05-07384	$66.75
Raytheon / Beech	Bushing	50-524476-3	05-07386	$79.80
Raytheon / Beech	Seat Foot	50-534436-5	05-07387	$29.50
Raytheon / Beech	Bushing,n. Upper Torque Lk	50-810034	05-07388	$18.95
Raytheon / Beech	Main Strut Upper Bearing	50-810326	05-07389	$171.99
Raytheon / Beech	Pin	50-810343-5	05-07391	$33.50
Raytheon / Beech	Pin	50-810343-7	05-07392	$33.50
Raytheon / Beech	Switch, Mic	601-4300	05-07394	$53.75
Raytheon / Beech	Bushing, Ns Torque Link Ctr	90-810019-1	05-07466	$56.00
Raytheon / Beech	Bushing, Drag Link	90-820010-1	05-07467	$37.50
Raytheon / Beech	Bolt, Nose Gear	90-820011-1	05-07468	$195.00
Raytheon / Beech	Mic Switch	99-340253-1	05-07476	$63.90
Raytheon / Beech	Bushing, Torque Link	99-810060-1	05-07477	$22.70
Raytheon / Beech	Bushing	99-810064-1	05-07478	$46.70
Raytheon / Beech	Bushing	99-810064-3	05-07479	$66.75
Raytheon / Beech	Bushing, Main Drag Link Ctr	99-810066-1	05-07481	$11.95
Raytheon / Beech	Bearing, Nose Gear	99-820099	05-07482	$239.00
Raytheon / Beech	Yoke	A3025	05-07483	$51.90
Raytheon / Beech	Carbon Block	A3026	05-07484	$56.65
Raytheon / Beech	Carbon Block Assy	A3044	05-07486	$109.75
Raytheon / Beech	Seal, Drain Valve	Cca1269	05-07494	$2.45
Raytheon / Beech	Seal, Drain Valve	Cca1319	05-07496	$2.85
Saab	Bearing	Air130986	05-07488	$439.50
Saab	Bearing	Air130988	05-07489	$494.00
Various	Filter / Gasket	Various	05-07338	$15.85

(FAA/PMA APPROVED)

CESSNA COWL FLAP RIGHT AND LEFT

These cowl flaps feature a replaceable stainless steel hinge that may be removed and replaced using screws. The specific model applicability for these cowl flaps are the C-180C, D, E, F, G, H, J and 180K; the 182B, C and D; 185, 185A, B,C,D, 185E, A185E and A185F. FAA Approved.

Left ..... P/N 05-03393 ..... $1,089.00
Right ..... P/N 05-03394 ..... $1,089.00

HORIZONTAL STABILIZER ADJUSTING SCREW AND BARREL
FOR C-180, 185 AND C-182 THRU C-182D

Screw ..... P/N 05-07000 ..... $291.95
Barrel ..... P/N 05-07005 ..... $111.95

HORIZONTAL STABILIZER ADJUSTING CAM

Cessna Adjusting Cam. - U0712502; Trim screw adjusting cam. FAA/PMA Approved.

P/N 05-07010 ..... $37.50

STABILIZER TRIM SCREW BOOT
FOR C-180, C-185, AND C-182 THRU C-182D

Boot ..... P/N 05-07015 ..... $57.90

CESSNA 120/140 FUEL VALVE KIT

This valve has a very smooth action with positive detents. Like the original valve, it has positions for left-on, right-on and both-off. Unlike the original, it is not prone to sticking or binding. It does not require periodic seal replacement or lubrication. This PMA'd replacement valve will mount almost identically to the original OEM valve. It uses the same tank selector plate and the same mounting hardware as the original. This valve is sold in a kit that includes the handle and installation instructions. The handle has no "pointer." This is in compliance with AD47-43-02. ..... P/N 05-03407 ..... $398.00

C-120, C-140 LIFT STRUT ROD ENDS

Front Rod End ..... P/N 05-07020 ..... $96.75
Rear Rod End ..... P/N 05-07025 ..... $80.75

C-172 OIL DOOR

Applicable on the following models:
(172, 172A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q)

P/N 05-07030 ..... $275.95

C-180, 182, & 185 SERIES COWL OIL DOOR

Applicable on the following models: For 180—180G, 182—182G & 185—185C

P/N 05-07035 ..... $354.00

CESSNA AILERON HINGE

For all C-150, 152, 170A, 170B, 172, 180, 182 & 185 ..... P/N 05-07040 ..... $61.75

CESSNA STYLE TAIL SKID

This easy-to-install tail skid is designed to save the tail feathers on most single engine Cessna's. Made from 4130 aircraft steel, this tail skid fits Cessna 150, 152, 172, 177, and 182.

P/N 13-17010 ..... $14.75

EXHAUST CUFF FOR CESSNA 206, 210 AND 340

The problem * The exhaust pipe creates parasitic drag within the slip stream * Non-laminar flow conditions occur at the opening of the cowl * Aircraft esthetics are affected by the protrusion of the pipe. The exhaust cuff solution eliminates non-laminar airflow about the exhaust port * Reduces cylinder head temperatures * Cruise performance increased * Enhances the esthetics of the aircraft

Cessna Exhaust Cuff 206 & 210 ..... P/N 05-04474 ..... $195.00
Cessna Exhaust Cuff 340 ..... P/N 05-04475 ..... $395.00

C-170 TAILWHEEL SPRINGS

Tailwheel Spring Assembly ..... P/N 06-15000 ..... $224.95
Main Leaf Only ..... P/N 06-15100 ..... $94.75

C-120/140 TAILWHEEL SPRING SETS
(LATER CESSNA SPRING SET SHOWN)

Early 120-140 (single bend, originally on SN 8001-14026) P/N 05-07055 ..... $163.75
120-140 (SN 14027 and up) P/N 06-14800 ..... $198.75
120-140 main leaf only (SN 8001-14026) P/N 05-07065 ..... $60.95
120-140 main leaf only (SN 14072 & up) P/N 06-14900 ..... $66.75

RUDDER BELLCRANK
FOR C-120, 140 & 170

P/N 05-07075 ..... $313.00

WING FABRIC CLIP
FOR C-120/140/170

P/N 09-19900 ..... $0.79

RUDDER & ELEVATOR SKINS

Cessna 180, 185, 182-182B FAA-PMA. Sold in pairs only, includes both Right and Left sides.

P/N 05-07090 ..... $365.00

SK152-24B CESSNA RUDDER STOP FOR SHEET METAL BULKHEAD

P/N 05-04655 ..... $262.95

ALL METAL COWLING PARTS
FOR 120-140

1946 Cowling Items
Lower Cowl Skin, Left P/N 05-07165 ..... $915.00
Lower Cowl Skin, Right P/N 05-07170 ..... $1,014.00
Nose Cowl Only P/N 05-07175 ..... $769.00

C-120/140 COWL GRILLS

FAA/PMA Approved. Also approved for 170, 170A, and 170B thru SN 25372.

Cessna 140/170 left hand grill (U0452207) P/N 05-07180 ..... $219.95
Cessna 40/170 right hand grill (U0452207-1) P/N 05-07185 ..... $193.75

C-120/140 ENGINE MOUNT ASSEMBLY

120-140 ..... P/N 05-07190 ..... $866.00
140A ..... P/N 05-07195 ..... $1,243.00

FLAP TRACK WEAR GAGE

McFarlane Aviation Products has developed a new tool to determine Flap track wear. McFarlane developed this tool to positively indicate when the flap track is worn beyond service limits. Flap Track Wear Gage Use to determine if a Cessna flap track is worn beyond service limits. Flap Track Wear Gage Instructions: Run the gage plug along each slot in each flap track while verifying that the gage will not enter the slot. Reposition the flaps as required to gage the entire length of each slot. If the gage enters a slot at any point the track is worn beyond service limits. The diameter of the gage is .6035 inches (diameter tolerance +.000/-.002)Periodically verify the gage diameter by measuring the age diameter with a calibrated micrometer.

P/N 05-02145 ..... $42.95

VENT TUBE ADAPTER BRACKET CESSNA

CW-172001 replacement for Cessna part #0700325-2 adapter assembly. Eligible for installation on Cessna 172, 172A, 172B, 172C, 172E, 172F, 172G, 172H, 172I, 172K, 172L, 172M, 172N, 172P, 172Q.

P/N 05-04645 ..... $76.80

(FAA/PMA APPROVED)

LEVER TYPE WINDOW LATCHES & COMPONENT PARTS

Latch Assembly Applicable on: 120, 140, 140A, 170, 170A, 170B, (SN 20267 thru 25372).....
P/N 05-07100..... $323.00

Latch Assembly Applicable on: 170B (SN 25373 & on), 172, 175, 180 & 182
P/N 05-07105..... $314.00

COMPONENT PARTS

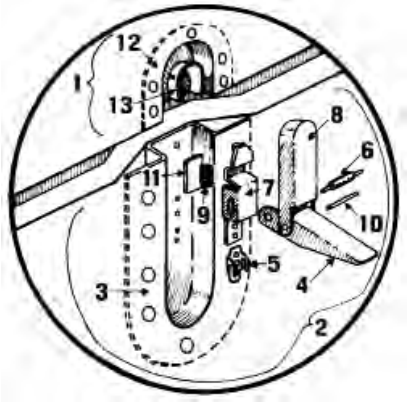
Arm (for -2 assy.)(U0413362-8)	P/N 05-07110	$40.80
Arm (for -3 assy.)(U0413362-9)	P/N 05-07115	$42.80
Bracket (U0413362-13)	P/N 05-07120	$66.75
Knob (U0413359)	P/N 05-07125	$19.90
Extension Arm (U0413362-12)	P/N 05-07130	$65.75
Angle (left side)(U0413362-10)	P/N 05-07135	$8.50
Angle (right side)(U0413362-11)	P/N 05-07140	$7.90
Pin (U0413362-14)	P/N 05-07145	$17.85
Pin (U0413362-16)	P/N 05-07150	$17.85
Pin (U0413362-15)	P/N 05-07155	$17.85
Spacer (U0413362-7)	P/N 05-07160	$8.70
Washer (2 req'd)	P/N AN960-10	$0.02
Washer (2 req'd)	P/N AN960-10L	$0.02
Screw	P/N THA4-6	$0.15

CABIN ENTRY STEP FOR CESSNA AIRCRAFT

Cabin Entry Step for Cessna Aircraft.
Applicable to:
170, 170A, B - 18000 thru 27169
180,180A, B, C, D, E, F - 30000 thru 18051312
185, 185A, B, C, D, E, A185E* - 1850001 thru 1851300
* Partial model eligibility

Left Cabin Access	P/N 05-04176	$360.00
Right Cabin Access	P/N 05-04177	$358.00

COWL LATCHES AND DETAILS FOR 120-140 AND 170 SERIES



HOOK & LEVER ASSEMBLIES

1) Hook Assembly	P/N 05-07200	$89.75
2) Lever Assembly	P/N 05-07205	$289.95

DETAIL PARTS

3) Recess	P/N 05-07210	$33.50
4) Lever	P/N 05-07215	$25.50
5) Clip	P/N 05-07220	$24.99
6) Pin	P/N 05-07225	$14.80
7) Housing	P/N 05-07230	$29.50
8) Hook	P/N 05-07235	$32.50
9) Spring	P/N 05-07240	$19.50
10) Pin	P/N 05-07245	$15.50
11) Shim	P/N 05-07250	$2.00
12) Recess	P/N 05-07255	$52.75
13) Hook	P/N 05-07260	$50.50

AILERON HINGE FOR CESSNA

FAA – PMA APPROVED AS0523816-1
P/N 05-00048..... $52.75 ea.

CESSNA SPINNERS

NOTE:Cessna 172 Spinner Dome PN 05-09045 will not work for 1960 Cessna 172A.
Cessna spinner dome for - F, G, H, J, 150 K
P/N 05-09030..... $339.00
Cessna front plate for - 150 F, G, H, J, 150 K
P/N 05-09035..... $359.00
Cessna rear plate for - 150 F, G, H, J, 150 K
P/N 05-09040..... $304.00
Cessna spinner backplate for - early Cessna 170 & 172 for Contential 8 hole flanges..... P/N 05-07265..... $323.00
Cessna spinner dome for- early Cessna 170 & 172 for Contential 8 hole flanges..... P/N 05-07270..... $728.00
Cessna spinner kit - early Cessna 170 & 172 for Contential 8 hole flanges..... P/N 05-07275 ..... $1,016.00
Cessna dome for - 172 A-F..... P/N 05-09045..... $560.00
Cessna front plate for - 172 A-F..... P/N 05-09050..... $477.00
Cessna rear plate for - 172 A-F..... P/N 05-09055..... $334.00
Cessna dome for - 172 I, K, L, M, N, & P..... P/N 05-07280..... $405.00
Cessna front plate for - 172 I, K, L, M, N, & P..... P/N 05-07285..... $198.99

CESSNA 182 ALUMINUM SPINNERS

These aluminum spinners and spinner support spacers are FAA approved for installation on several models of Cessna 182 series aircraft using McCauley two blade constant speed propellers. The Spinner Dome replaces original Cessna p/n 0752637K200, 0752637-5 and 0752637-11. The Spinner Spacer replaces original Cessna p/n 0752620-1 and 0752620-3. The Spinner Dome is approved on the Cessna 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q and the 182R. The Spinner Support Spacer is approved on Cessna Models 180H, 180J, 180K, A185E, A185F, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 210-5 (205), 210-5A (205A), 206, U206, P206 and the U206A.

Spinner Dome U0752637K200 . . . . . .05-01901 ..... $723.00
Spinner Sport Spacer U0752620-3 . . . . . .05-01902 ..... $6.65

CESSNA TRIM CONTROL CHAINS

We carry FAA-PMA approved replacement trim control chains for Cessna 120 through 210 series aircraft. Call the Cessna/Piper parts specialist at Aircraft Spruce (1-877-4-SPRUCE) for assistance in determining the correct chain for your aircraft.

Model No.	Part No.	Price Ea.
ASS2294-25	05-00289	$6.25
ASS2295-25-185	05-00291	$91.25
ASS2295-25-249	05-00292	$147.75
ASS2295-25-321	05-00293	$135.95
ASS2295-25-43	05-00294	$44.70
ASS2295-25-47	05-00295	$46.25
ASS2295-25-61	05-00296	$43.50
ASS2295-25-63	05-00297	$67.75
ASS2295-25-67	05-00298	$74.75
ASS2295-25-70	05-00299	$68.75
ASS2295-25-71	05-00301	$80.75
ASS2295A25-111	05-00302	$71.75
ASS2295P25-113	05-00303	$87.99
ASS2295P25-155	05-00304	$142.75
ASS2295P25-159	05-00305	$134.75
ASS2295P25-185	05-00306	$115.80
ASS2295P25-321	05-00307	$137.75
ASS2295P25-47	05-00308	$44.50
ASS2295P25-55	05-00309	$58.99
ASS2295P25-59	05-00311	$48.75
ASS2295P25-63	05-00312	$72.95
AS2295P25-67	05-00313	$99.75
ASS2295P25-69	05-00314	$64.75
ASS2295P25-71	05-00315	$54.75
AS0432138-2	05-00316	$157.75

CESSNA WHEEL PANT MOUNTING PLATES

These FAA-PMA approved mounting plates are anodized for improved corrosion resistance and will save over $100 compared to factory mounting plates. Approved with partial eligibility for the Cessna 150, 152, and 172. Verify approval for your aircraft with Aircraft Spruce prior to ordering.

Cessna P/N	Aircraft Model	Our P/N	Price Each
0441225-1 (Left)	150/152	05-01497	$146.75
0441225-2 (Right)	150/152	05-01498	$147.75
0441220-1 (Left)	172	05-01499	$78.75
0441220-2 (Right)	172	05-01501	$62.75

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CESSNA PARTS

Aircraft Spruce and Specialty stocks a large inventory of Cessna replacement parts. Some of the most commonly required parts are listed on this page. If you require Cessna parts not listed here, please provide us with the Cessna part numbers and we will provide you with a prompt quotation. All of the parts listed here are authentic Cessna factory parts and all carry our low price guarantee. Please verify that the parts are correct for your Cessna model/year by referring to the applicable Cessna parts manual prior to ordering.

Call for Prices on Unlisted Cessna Parts

Part. No.	Description	Price
S1258-1	Sump	$13.50
SK172-1F	Strut Kit	$45.65
S1093-1	Flap Buttons	$0.19
NAS75-3-009	Bushing	$5.45
NAS77-3-23	Bushing	$3.95
NAS77-8-88	Bushing	$6.60
MS25171-1	Nipple	$1.22
MS25171-2	Nipple	$1.18
C156003-0101	Fuel Cap	$63.75
C592001-0201	Static Wick Certified	$43.90
11-10574	Static Wick Non Certified	$15.90
B100142-1	Fuel Cap Gasket	$13.95
S1991A1	Contactor	$159.75
S2020-2	Drain Valve	$22.60
S2106-2	Drain Valve	$24.90
S2160-1	Switch	$7.50
S2237-3	Seat Belt Bushing	$1.65
S2416-1-31.0	Alt Belt	$37.85
0400213-6	Compass Placards	$1.90
0413613-1-279	Panel Nut	$1.67
0511242-1	Seat Stop	$21.50
1220114-1	Spacer	$0.64
1243030-5	Shim	$13.85
1243030-6	Shim	$10.95
1243030-7	Shim	$9.80
1250860-29214	Clamp	$86.75
1298119-4	Exhaust Spring	$9.95
1414104-54	Bushing	$17.75
1513174-3	Grey Panel Nut	$6.90
1513174-5	Black Panel Nut	$9.75
1555014-2	Clamp Half	$14.50
0523919	Bushing	$8.95
0523920	Roller	$69.75
0523921	Roller	$44.50
0541139	Plug	$38.50
9910306-1	Westgate Gasket	$36.95
0711001-59	Hinge Pin	$20.95

Part. No.	Description	Price
0713348-1	Stall Horn	$27.90
S2488-1	Stall Horn Reed	$0.75
0756009-8	Gasket	$34.80
0851559-1	Washer	$5.90
0756010-6	Plunger	$217.50
0756011-1	Standpipe	$198.50
S1450-6B14-010	Washer	$3.30
S1597-1-37.5	Belt V	$69.75
B3-5-1	Filter Vac	$2.84
S1921-1	Clamp	$161.75
U10C062-262M	Clamp	$51.00
B40012	Brush	$179.90
A2748	Seal	---
A2749	Seal Wiper	$17.00
MS25253-1	Switch	$13.75
1234665-10	Tab	$2,332.00
S1906-1	Switch	$29.80
S1906-2	Switch	$14.50
S1230-17	Control	$88.65
S1230-19	Control	$167.75
RD0015H1600JBL	Rheostat	$1,988.00
0441139-6	Shim	$58.75
0541111-2	Shim	$166.75
0441157-2	Shim	$658.00
0441157-1	Shim	$125.80
1250405-1	Nut	$298.85
MS29513-338	O-Ring	$1.72
AN6235-2A	Filter Hyd	$9.50
AN6235-3A	Element	$7.95
1250922-200	Adapter	$593.00
1250922-201	Adapter	$4,449.00
1250922-202	Adapter	---
0750142-1	Gasket	$57.75
0756009-1	Fuel Filter	$39.75
0741623-4	Tread	$17.50
0441157-3	Shim	$105.95
0556010-200	Adapter Ass'y.	$963.00

Part. No.	Description	Price
1232040-5	Boot	$86.75
79C1	Drain Valve	$164.75
S2485-1	Drain Valve	$99.75
S1577A1	Contactor	No Match
S1579A2	Contactor	$135.95
S1580A1	Contactor	$136.75
S1588-1	Gasket	$82.75
S1588-2	Gasket	$29.90
0750143-2	Deflector	$20.85
0750143-3	Bracket	$10.60
0851559-1	Washer	$5.90
S1915-1	Capacitor	$133.75
S1915-2	Capacitor	$124.75
S1994-1-1	Switch	$36.50
S2334-3	CHT Probe	$297.95
S1258-1	Sump	$13.50
S3010-1	Switch	$46.50
S1104-3	Rod End	$28.95
S1105-4	Rod End	$45.50
C592001-0201	Wick	$43.90
C592001-0203	Wick	$71.75
S1704-1	Roller	$2.75
1714000-22	Washer	$2.97
16165	Wick	$53.75
KM610-64	Latch	$59.85
B3-11-1	Gasket	$41.80
S1477-3	Nut	$1.97
S1477-08	Nut Clip	$2.25
NH1000897-30	Clamp	$221.00
NH1000897-40	Clamp	$554.00
NH1000897-50	Clamp	$365.50
NH1000897-60	Coupling	$313.95
DGR3	ACU	$398.50
DGR6	Regulator	$169.95
SK152-25A	Rudder Stop	$93.75

CESSNA CARAVAN BUSHING KITS ELEVATOR AND RUDDER

Cessna has issued several non-mandatory service bulletins and service kits for the rudder and elevator hinge bearings on the Caravan due to a corrosion issue with the needle bearing.

The service kits require modification to the hinge structure, not just the bearing itself. The new bearing is a different size than the "original" design, so the mounting hardware is different as well. Because of these structural changes any aircraft that has had the service kits installed cannot use hardware from a non-service kit aircraft. Includes bearings and all attaching hardware.

Description	Part No.	Price
Caravan Elevator Bushing Kit EBC-KT-7	05-06879	$133.95
Caravan Elevator Bushing Kit EBC-KT-8	05-06880	$441.95

Description	Part No.	Price
Rudder Bushing Kit RBC-KT-9	05-06881	$79.50
Rudder Bushing Kit RBC-KT-10	05-06882	$259.00

CESSNA CABLE & CHAIN KITS

Complete flight control and trim chain kits for each of the 150 different cable groups required to service all single engine aircraft from the model 120 through model 185 airplanes. It is a tedious and time consuming job to research the part manuals for all of the cables required for a complete aircraft. We carry stock on all of the cables in either Galvanized-Carbon Steel or Stainless Steel. All components are fully traceable, high quality, and proof tested.

Cable & Chain Kit CCKT206H-01S ..... P/N 05-04605 ..... $1,784.00
Cable & Chain Kit CCKT182-13S ..... P/N 05-04603 ..... $1,246.00
Cable & Chain Kit CCKT172175-13 ..... P/N 05-04598 ..... $1,687.00
Cable & Chain Kit CCKT172175-13S ..... P/N 05-04599 ..... $1,278.00
Cable & Chain Kit CCKT206H-01G ..... P/N 05-04604 ..... $1,514.00
Cable & Chain Kit CCKT182-13G ..... P/N 05-04601 ..... $1,721.00

INTER-CYLINDER BAFFLE

Intercylinder Baffles for Teledyne Six Cylinder Engines. Replaces Cessna Part Number 0750135-1 and 0851833-1
P/N 05-02362 ..... $69.85

CESSNA FLAP TRAILING EDGE STIFFENER

Improved Fit to Reduce Skin Stress. The stiffeners are accurately shaped to the same angle that the top and bottom skins come together to completely eliminate the bending stress due to riveting the skins together. FAA/PMA Approved.For application please call or visit our website.

79.5" length ..... P/N 05-00046 ..... $53.85
Flap Tracing Edge Stiffner 116.25" ..... P/N 05-07237 ..... $108.75

MC600 SERIES UNIVERSAL SOLID WIRE VERNIER MIXTURE CONTROL

FAA-PMA approved for use as a minor alteration part on the following aircraft:

• Cessna • Raytheon • Maule • Cessna/Reims • Mooney •Univair (Stinson) • Piper Call for Specific Models - Easily field approved for other applications

- Trim to exact length ..... P/N 05-01254 ..... $163.95

THROTTLE CONTROL

Fittings and components are made from anodized aluminum, stainless steel, and brass. All critical swage connections are metal to metal for continued dependability. Vernier locking devices are precision formed and heat treated in critical wear areas. ..... P/N 05-02209 ..... $347.00

6260 RETAINING NUT 7/16-20

The retaining nut threads onto the threaded section of the control on the back side of the instrument panel to secure the control. Replacement retaining nut p/n 6260 for all McFarlane MC6350 dual push-to-unlock controls. P/N 05-04581 ..... $6.80

FAA-PMA APPROVED CONTROLS FOR CESSNAS
THROTTLES – PROP – MIXTURE

Throttle, Propeller, Mixture, controls are available for most Cessna single engine aircraft from the Cessna 120 through the 210 series. These FAA-PMA controls are ultra-smooth, flexible with no stretch, arctic tested to -50°F, and tested to 250,000 cycles. They feature brass body assembly, teflon lined conduit, stainless steel ends, viton dust boots, aluminum friction lock, and a high quality phenolic knob (throttle, mixture, and prop).

Throttle Controls

Model	Serial No.	Model No.	Part No.	Price
120	8000 thru 11846	MC0411091-7	05-00272	$289.95
140	11847 thru 15075	MC0411091-7	05-00272	$289.95
140A	15200 thru 15724	MC0411091-7	05-00272	$289.95
150	17001 thru 59018	MC0411091-7	05-00272	$289.95
150A,B,C, D,E,F	15059019 thru 15064532	MCS1222-11S	05-00197	$203.95
F150F	F1500001 thru F1500067	MCS1222-11S	05-00197	$203.95
150G	15064533 thru 15067198	MCS1222-14S	05-00199	$223.95
F150G	F1500068 thru F1500219	MCS1222-14S	05-00199	$223.95
150H,I,J, K,L,M	15067199 thru 15079405	MCC299505-0202S	05-00262	$198.75
A150K,L,M	A1500001 thru A1500734	MCC299505-0202S	05-00262	$198.75
F150H,J, K,L,M	F1500220 thru F1501428	MCC299505-0202S	05-00262	$198.75
FA150K,L	FA1500001 thru FA1500120	MCC299505-0202	05-00262	$198.75
152*	15279406 thru 15282031	MC9863053-20	05-00248	$425.00
A152*	A1520735 thru A1520808	MC9863053-20	05-00248	$425.00
F152*	F15201429 thru F15201528	MC9863053-20	05-00248	$425.00
FA152*	FA1520337 thru FA1520347	MC9863053-20	05-00248	$425.00
152*	15282032 thru 15286033	MC9863056-1	05-00251	$208.95
A152*	A1520809 thru A1521049	MC9863056-1	05-00251	$208.95
F152*	F15201529 thru F15201929	MC9863056-1	05-00251	$208.95
FA152*	FA1520348 thru FA1520425	MC9863056-1	05-00251	$208.95
170, 170A,B*	18000 thru 25372	MC0411091-2	05-00269	$373.00
170B*	25373 thru 27169	MCS1222-2S	05-00206	$216.95
172, 172A, B,C,D	28000 thru 17250572	MCS1222-2S	05-00206	$216.95
F172D	F1720001 thru F1720018	MCS1222-2S	05-00206	$216.95
172E,F,G,H	17250573 thru 17256512	MCS1222-15S	05-00201	$222.95
F172E,F,G,H*	F1720019 thru F1720559	MCS1222-15S	05-00201	$222.95
172I,K,L,M	17256513 thru 17267584	MCC299505-0102	05-00259	$234.95
F172M*	F17201035 thru F1720151	MCC299505-0102	05-00259	$234.95
172N*	17267585 thru 17271034	MC9863053-15	05-00246	$406.00
F172N*	F17201515 thru F17201749	MC9863053-15	05-00246	$406.00
172N*,P,Q	17271035 thru 17276673	MC9863056-3	05-00253	$348.00
F172N*,P	F17201750 thru F17202254	MC9863056-3	05-00253	$348.00
172R	17280001 and On	MC565-549-021	05-00988	$262.95
172S	172S8001 and On	MC565-549-021	05-00988	$262.95
175*	55001 thru 55703	MC0411091-27	05-00271	$295.95
177	17700001 thru 17701164	MCS1222-19	05-00203	$486.00
177A,B*	17701165 thru 17702539	MCC299505-030	05-00264	$234.95
180,A,B,C, D,E,F,G	30000 thru 18051445	MCS1222-1S	05-00204	$179.75
180H*	18051446 thru 18051875	MCS1222-13S	05-00198	$169.75
180H*,J	18051876 thru 18052770	MCC299505-0201S	05-00261	$224.95

Throttle Controls

Model	Serial No.	Model No.	Part No.	Price
180K*	18052771 thru 18053000	MC9863053-5	05-00249	$386.00
182,A,B,C,D	33000 thru 18253598	MCS1222-1S	05-00204	$179.75
182E,F,G	18253599 thru 18255844	MCS1222-6S	05-04606	$245.95
182H,J,K	thru 18258505	MCS1222-13S	05-00198	$169.75
182L,M,N,P*	18258506 thru 18261425	MCC299505-0201S	05-00261	$224.95
182P*	18261426 thru 18264835	MCC299505-0205	05-00263	$226.95
182P*,Q*	18264836 thru 18266590	MC9863053-5	--	--
F182P*,Q	F18200001 thru F18200094	MC9863053-5	--	--
182S	18280001 thru 18280944	MC565-549-031	05-00989	$310.00
182T	18280945 and On	MC565-549-031	05-00989	$310.00
T182T	T18208001 and On	MC565-549-031	05-00989	$310.00
T182	18267716 thru 18268615	MC9863056-7	05-00257	$413.00
R182*	R18200001 thru R18200583	MC9863053-11	05-00244	$428.00
FR182*	FR18200001 thru FR18200020	MC9863053-11	05-00244	$428.00
R182*	R18200584 thru R18202041	MC9863056-6	05-00256	$407.00
FR182*	FR18200021 thru FR18200070	MC9863056-6	05-00256	$407.00
TR182	R18200584 thru R18202041	MC9863056-7	05-00257	$413.00
A185E*	185-1301 thru 185-1599	MCC299505-0301	05-00264	$234.95
A185E*	18501600 thru 18502007	MCC299505-0301	05-00264	$234.95
A185E*	18502026 and 18502027	MCC299505-0301	05-00264	$234.95
A185E*,F*	18502008 thru 18502025	MCC299505-0501	05-00265	$415.00
A185E*,F*	18502028 thru 18503153	MCC299505-0501	05-00265	$415.00
188A, A188B*	18800833 thru 18802745	MCS2149-1	05-00226	$537.00
A188B*	18802746 thru 18803856	MCC299508-0301	05-00184	$290.95
205,205A	205-0001 thru 205-0577	MCS1219-1	05-00193	$409.00
206	206-0001 thru 206-0275	MCS1219-1	05-00193	$409.00
P206C,D,E	P206-0420 thru P20600647	MCC299505-0101	05-00258	$234.95
U206C,D,E,F	U206-0915 thru U20603521	MCC299505-0101	05-00258	$234.95
U206G*/ TU206G*	U20603522 thru U20604649	MC9863053-13	05-00245	$424.00
U206G*/ TU206G*	U20604650 thru U20606439	MC9863056-2	05-00252	$339.00
206H	20608001 and On	MC565-549-041	05-00990	$359.00
T206H	T20608001 and On	MC565-549-041	05-00990	$359.00
207, T207	20700007 thru 20700362	MCS1222-25A	05-00205	$218.95
207A*/ T207A*	20700363 thru 20700482	MC9863053-16	05-00247	$486.00
207A*/ T207A*	20700483 thru 20700788	MC9863056-4	05-00254	$368.00
210B,C,D	21057841 thru 21058510	MCS1219-1	05-00193	$409.00
210H,J,K,L	21058937 thru 21061573	MCC299505-0101	05-00258	$234.95
T210H,J,K,L	T210-0308 thru 21061573	MCC299505-0101	05-00258	$234.95
210M/ T210M	21061574 thru 21062954	MC9863053-13	05-00245	$424.00
210N*/ T210N*	21062955 thru 21064897	MC9863056-2	05-00252	$339.00
P210N*	P21000001 thru P21000150	MC9863053-13	05-00245	$424.00
P210N*	P21000151 thru P21000834	MC9863056-2	05-00252	$339.00

*PARTIAL MODEL ELIGIBILITY

Accessories

Cessna Rod End S1104-3 ..... P/N 06-00684 ..... $28.95

Cessna ControlS1230-17 ..... P/N 06-00686 ..... $88.65

Propeller Controls

Model	Serial Number	P/N	Our P/N	Price
177B*	17701371 thru 17702539	C299506-0105	05-00177	$310.00
177RG*	177RG0001 thru 177RG1051	C299506-0105	05-00177	$310.00
F177RG*	F177RG0001 thru F177RG0160	C299506-0105	05-00177	$310.00
180A,B,C,D,E,F,G	30000 thru 18051445	S1223-4	05-00209	$245.95
180H*, J	18051876 thru 18052770	S1223-4	05-00209	$249.95
182,A,B,C,D	33000 thru 18253598	C299506-0103	05-00268	$245.95
182E,F,G	33000 thru 18253598	S1223-4	05-00209	$245.95
182E,F,G	18253599 thru 18255844	S1223-6S	05-00207	$221.95
182H,J,K	18255845 thru 18258505	S1223-3	05-00208	$299.95
182L,M,N,P	18258506 thru 18265175	S1223-6	05-00211	$238.95
FR182P	F18200001 thru F18200025	C299506-0102	05-00267	$238.95
182Q,R	18265176 thru 18268615	C299506-0102	05-00267	$527.00
180H, 185, 185A,B,C,D,E, A185E	18051446 thru 18051875, 185-0001 thru 185-0237, 185-0238 thru 185-1149, 185-0968-185-1300	MCS1223-5	05-11062	$463.00
A185E*	185-1301 thru 18502007	C299506-0103	05-00268	$249.95
A185E*	18502026 and 18502027	C299506-0103	05-00268	$249.95
A185E*,F	18502008 thru 18502025	C299506-0201	05-00178	$418.00
A185E*,F	18502028 thru 18503153	C299506-0201	05-00178	$418.00
A188B*	18800833 thru 18802745	S2149-2	05-00228	$517.00
A188B*	18802746 thru 18803856	C299508-0302	05-00187	$401.00
T188C	T18803297T thru T18803422T	C299508-0304	05-00191	$541.00
U206, U206A,B,	U206-0276 thru U206-0914	S1223-4	05-00209	$245.95
TU206A,B	U206-0276 thru U206-0914	S1223-4	05-00209	$245.95
P206, P206A,B	P2060001 thru P2060419	S1223-4	05-00209	$245.95
U206C,D,E,F	U2060915 thru U20603521	C299506-0101	05-00266	$232.95
TU206C,D,E,F	U2060915 thru U20603521	C299506-0101	05-00266	$232.95
P206C,D,E	P206-0420 thru P20600647	C299506-0101	05-00266	$232.95
U206G, TU206G	U20603522 thru U20607020	9862067-1	05-00241	$421.00
207A, T207A	20700363 thru 20700788	9862067-12	05-00242	$302.00
210E,F,G	21058511 thru 21058936	S1223-4	05-00209	$245.95
T210F,G	T2100001 thru T2100307	S1223-4	05-00209	$245.95
210H,J,K,L	21058937 thru 21061573	C299506-0101	05-00266	$232.95

Mixture Controls

Model	Serial Number	P/N	Our P/N	Price
T210H,J,K,L	T2100308 thru T2100454	C299506-0101	05-00266	$232.95
210M,N,T210M,N	21061574 thru 21064897	9862067-1	05-00241	$421.00
P210N	P21000001 thru P21000834	9862067-1	05-00241	$421.00
R172E,F,G,H,J,K	R1722000 thru R1723454	9862066-6	05-00239	$469.00
185A,B,C,D,E	185-0238 thru 185-1599	C299507-0201	05-00181	$268.95
A185E,F*	18501600 thru 18502007	C299507-0201	05-00181	$268.95
A185E,F*	18502026 and 18502027	C299507-0201	05-00181	$268.95
A185F*	18502008 thru 18502025	C299507-0401	05-00183	$504.00
A185F*	18502028 thru 18503153	C299507-0401	05-00183	$504.00
188,188A	1880001 thru 1880572	S1220-13	05-00195	$552.00
A188	18800573 thru 18800832	S1220-13	05-00195	$552.00
188B, A188B*	1880833 thru 18802745	C299507-0301	05-00182	$510.00
A188B*	18802746 thru 18803856	C299508-0401	05-00189	$553.00
T188C	T18803297T thru T18803422T	C299508-0402	05-00191	$541.00
205, 205A	205-0001 thru 205-0577	S1220-3	05-00196	$453.00
206	206-0001 thru 206-0275	S1220-3	05-00196	$453.00
U206, U206A,B	U206-0276 thru U206-0914	S1220-3	05-00196	$453.00
P206, P206A,B	P206-0001 thru P206-0419	S1220-3	05-00196	$453.00
U206C,D,E,F	U206-0915 thru U20603521	C299507-0101	05-00179	$218.95
TU206C,D,E,F	U206-0915 thru U20603521	C299507-0101	05-00179	$218.95
P206C,D,E	P206-0420 thru P2060647	C299507-0101	05-00179	$218.95
U206G, TU206G	U20603522 thru U20607020	9862066-1	05-00237	$355.00
207, T207	20700001 thru 20700362	S1220-12A	05-00194	$553.00
207A, T207A	20700363 thru 20700788	9862066-5	05-00238	$351.00
210B,C,D,E,F,G	21057841 thru 21058936	S1220-3	05-00196	$453.00
T210F,G	T210-0001 thru T210-0307	S1220-3	05-00196	$453.00
210K,L, T210K,L	21059200 thru 21061573	C299507-0101	05-00179	$218.95
210M,N, T210M,N	21061574 thru 21064897	9862066-6	05-00239	$469.00
P210N	P21000001 thru P21000834	9862066-6	05-00239	$469.00
182S	18280001 - 18280944	C565-548-042	05-00994	$388.00
182T	18280945 - On	C565-548-042	05-00994	$388.00

FOR CARBURETOR HEAT CONTROLS FOR CESSNA 140-185, VISIT OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM.

CESSNA COWL FLAP CONTROLS

Cowl Flap controls are available for most Cessna single engine aircraft from the Cessna 120 through the 210 series. These FAA-PMA controls are ultra-smooth, flexible with no stretch, arctic tested to -50°F, and tested to 250,000 cycles. They feature brass body assembly, teflon lined conduit, stainless steel ends, viton dust boots, aluminum friction lock, and a high quality phenolic knob (throttle, mixture, and prop). Our P/Ns are interchangeable with Cessnas P/Ns; "AS" prefix denotes Aircraft Spruce!

Model	Serial Number	Location	P/N	Our P/N	Price	Location	P/N	Our P/N	Price
R172K	R1722000 thru R1723454	1 per A/C	S1391-26	05-00222	$136.75	----	----------	-----	------
FR172K	FR17200591 thru FR17200675	1 per A/C	S1391-26	05-00222	$136.75	----	----------	-----	------
177B	17701371 thru 17702752	Left	S1391-25	05-00221	$171.75	Right	S1391-26	05-00221	$171.75
177RG	177RG0001 thru 177RG1366	Left	S1391-27	05-00223	$129.75	Right	S1391-27	05-00223	$129.75
180D,E	18050912 thru 18051183	Left	S1245-1	05-00217	$211.95	Right	S1245-1	05-00217	$211.95
180F	18051184 thru 18051312	Left	S1245-1	05-00217	$211.95	Right	S1245-2	05-00218	$149.75
180G	18051313 thru 18051445	Left	S1245-3	05-00219	$202.95	Right	S1245-2	05-00218	$149.75
180H,J	18051446 thru 18052770	Left	S1572-1	-----	-----	Right	S1245-2	05-00218	$149.75
180K	18052771 thru 18053203	Left	9860074-3	05-00232	$364.00	Right	9860074-4	05-00233	$348.00
182D	18253008 thru 18253598	Left	S1245-1	05-00217	$211.95	Right	S1245-1	05-00217	$211.95
182E,F,G,H,J,K,L,M,N,P,Q,R	18253599 thru 18268615	Left	9860058-3	05-00229	$258.95	Right	9860058-4	05-00231	$248.95
T182	18267716 thru 18268541	Left	9860075-3	05-00234	$403.00	Right	9860075-4	05-00235	$391.00
R182/TR182	R18200002 thru R18202041	Left	9860075-3	05-00234	$403.00	Right	9860075-4	05-00235	$391.00
182S, 182T	18280001 and On	Left	580-703-024	05-01736	$254.95	Right	580-703-025	05-01737	$248.95
T182T	T18208001 and On	Left	580-703-024	05-01736	$254.95	Right	580-703-025	05-01737	$248.95
185, 185A,B,C	185-0001 thru 185-0776	Left	S1245-3	05-00219	$202.95	Right	S1245-2	05-00218	$149.75
185D,E, A185E,A185F*	185-0777 thru 18503153	Left	S1572-1	-----	-----	Right	S1245-2	05-00218	$149.75
A185F*	185603154 thru 18504448	Left	9860074-3	05-00232	$364.00	Right	9860074-4	05-00233	$348.00
205, 205A	205-0001 thru 205-0577	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
206, U206	206-0001 thru 206-0275	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
U206A,B,C,D,E,F*	U206-0276 thru U20602199	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
P206, P206A,B,C,D,E	P206-0001 thru P20600647	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
TP206A*	P206-0161 thru P206-0274	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
TU206A*	U206-0438 thru U206-0617	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
TP206A*,B,C,D,E	P206-0275 thru P20600647	Left	S1244-32	05-00215	$125.75	Right	S1244-31	05-00214	$99.75
TU206A*,B,C,D,E,F,G	U206-0618 thru U20607020	Left	S1244-32	05-00215	$125.75	Right	S1244-31	05-00214	$99.75
U206F*,G	U20602200 thru U20607020	Left	S1244-32	05-00215	$125.75	Right	S1244-31	05-00214	$99.75
206H	20608001 and On	Left	580-703-026	05-01738	$312.00	Right	580-703-027	05-01739	$294.95
T206H	T20608001 and On	Left	580-703-026	05-01738	$312.00	Right	580-703-027	05-01739	$294.95
207, 207A,T207,T207A	20700001 thru 20700788	Left	S1244-29	05-00212	$168.75	Right	S1244-30	05-00213	$131.75
210, 210A	57001 thru 21057840	Left	1213040-1	05-00224	$132.75	Right	1213040-2	05-00225	$377.00
210B,C,D,E,F,G,H,J,K*	21057841 thru 21059240	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
T210F	T210-0001 thru T210-0197	Left	S1244-5	05-00216	$191.75	Right	S1244-31	05-00214	$99.75
210K*,L,M,N	21059241 thru 21064897	Left	S1244-32	05-00215	$125.75	Right	S1244-31	05-00214	$99.75
T210G,H,J,K,L,M,N	T210-0198 thru 21064897	Left	S1244-32	05-00215	$125.75	Right	S1244-31	05-00214	$99.75
P210N*	P21000001 thru P21000834	Left	S1244-32	05-00215	$125.75	Right	S1244-31	05-00214	$99.75

*Denotes partial model eligibility

UNIVERSAL PUSH TO UNLOCK CONTROLS

Universal Push to Unlock Controls MC6150/ MC6250 - Perfect for home built or custom projects! Quality stainless steel construction • Teflon lined for smooth operation • Heavy duty strength and long life • 3" maximum travel and 15lb. locking forcem • Anodized aluminum knobs in red, black, blue or clear • Custom laser marking available. MC6150 Series: - • Solid wire end • Available in 4, 6, 8, 10 and 12 foot lengths • Maybe cut to length. MC6250 Series: - • 10-32 threaded end • Available in 4, 6, 8, 10 and 12 foot lengths

MC6150 Controls (Solid Wire End)		
Description	Part No.	Price
Black Knob, 4Ft.	05-04151	$74.85
Black Knob, 6Ft.	05-04152	$77.75
Black Knob, 8Ft.	05-04153	$81.75
Black Knob, 10Ft.	05-04154	$83.75
Black Knob, 12Ft.	05-04155	$85.99
Clear Knob, 4Ft.	05-04490	$74.85
Clear Knob, 6Ft.	05-04491	$78.75
Clear Knob, 8Ft.	05-04492	$81.75
Clear Knob, 10Ft.	05-04493	$83.75
Clear Knob, 12Ft.	05-04494	$86.75
Blue Knob, 4Ft.	05-04495	$74.85
Blue Knob, 6Ft.	05-04496	$78.75
Blue Knob, 8Ft.	05-04497	$81.75
Blue Knob, 10Ft.	05-04498	$83.75
Blue Knob, 12Ft.	05-04499	$86.75
Red Knob, 4Ft.	05-04156	$75.75
Red Knob, 6Ft.	05-04157	$77.80
Red Knob, 8Ft.	05-04158	$81.75
Red Knob, 10Ft.	05-04159	$83.75
Red Knob, 12Ft.	05-04160	$86.75

MC6250 Controls (Threaded End)		
Description	Part No.	Price
Black Knob, 4Ft.	05-04501	$85.99
Black Knob, 5Ft.	05-04502	$87.75
Black Knob, 6Ft.	05-04503	$88.75
Black Knob, 7Ft.	05-04504	$90.75
Black Knob, 8Ft.	05-04505	$91.75
Black Knob, 9Ft.	05-04506	$92.75
Black Knob, 10Ft.	05-04507	$94.75
Clear Knob, 4Ft.	05-04508	$86.75
Clear Knob, 5Ft.	05-04509	$87.75
Clear Knob, 6Ft.	05-04510	$87.75
Clear Knob, 7Ft.	05-04511	$90.75
Clear Knob, 8Ft.	05-04512	$91.75
Clear Knob, 9Ft.	05-04513	$92.75
Clear Knob, 10Ft.	05-04514	$94.75
Blue Knob, 4Ft.	05-04515	$85.99
Blue Knob, 5ft	05-04516	$87.75
Blue Knob, 6ft.	05-04517	$89.75
Blue Knob, 7Ft.	05-04518	$90.75
Blue Knob, 8Ft.	05-04519	$91.75
Blue Knob, 9Ft.	05-04522	$93.75
Blue Knob, 10ft.	05-04523	$94.75
Red Knob, 4Ft.	05-04524	$85.99
Red Knob, 5Ft.	05-04525	$87.75
Red Knob, 6Ft.	05-04526	$88.85
Red Knob, 7Ft.	05-04527	$90.75
Red Knob, 8Ft.	05-04528	$91.75
Red Knob, 9Ft.	05-04529	$92.75
Red Knob, 10Ft.	05-04530	$95.75

WIRE CLAMP BOLTS FOR CESSNAS

Wire clamps for solid wire controls for Cessna Aircraft. Wire clamps are used on solid wire controls including cabin air, mixture control, strainer drain, cabin heat, defrost, flap and many others.

FAA-PMA approved for Cessna 120 through the 425 series aircraft. Unique design to reduce wire stress. Manufactured from heat treated stainless steel for better wear and corrosion resistance.

*Please visit our website for part specifications and application information.

Manufacturer Part No.	Part No.	Price
MCS2323-1	05-04583	$11.85
MCS2323-2	05-04584	$23.95
MCS2323-3	05-04585	$22.70
MCS2323-4	05-04586	$16.50
MCS2323-5	05-04587	$11.80
MCS2323-6	05-04588	$22.90
MCS2323-7	05-04589	$22.60
MCS2323-8	05-04590	$23.95
MCS2323-9	05-04591	$23.95
MCS2323-10	05-04592	$23.95
MCS2323-11	05-04593	$13.50
MCS2323-12	05-04594	$23.95
MCS2323-13	05-04595	$20.99
MCS2323-14	05-04596	$20.60
MCS2323-19	05-04597	$23.95

MC1660300-30 AILERON DIRECT CABLE

This Aileron Direct cables eligible for installation in Cessna 188A and A188A aircraft, serial range 18800573 thru 18800707. This cable has also been added to the cable kit CCKT188-04 188A, A188A 1970-1971 Serial Number 18800573-18800707 P/N 05-04614.....$100.75

FLAP SKINS – AILERON SKINS

UPPER RIGHT-HAND AND LEFT-HAND FLAP AILERON

* Better and costs less!
* No pre-drilled holes to misalign
* Precisely formed and trimmed
* Plastic coated on both sides for better protection during handling (remove before installation)
* Direct replacement - No STC required

FLAP SKIN KIT COMPONENTS

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP1	Flap skin kit	05-04164	$331.00
1 ea	MC0426901-10	Flap Upper RH	05-03371	$89.95
1 ea	MC0426901-11	Flap Upper LH	05-03372	$90.75
1 ea	MC0426901-6	Flap Lower LH	05-03369	$71.75
1 ea	MC0426901-7	Flap Lower RH	05-03370	$74.75
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP2	Flap skin kit	05-04169	$312.00
1 ea	MC0523901-4	Flap Upper LH	05-04113	$99.75
1 ea	MC0523901-5	Flap Upper RH	05-04114	$101.75
1 ea	MC0523901-6	Flap Lower LH	05-04115	$89.85
1 ea	MC0523901-7	Flap Lower RH	05-04116	$89.85
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP3	Flap skin kit	05-04170	$312.00
2 ea	MC0523901-201	Flap Upper LH RH	05-04125	$102.75
1 ea	MC0523901-6	Flap Upper LH	05-04115	$89.85
1 ea	MC0523901-7	Flap Lower RH	05-04116	$89.85
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP4	Flap skin kit	05-04171	$308.00
1 ea	MC0523901-21	Flap Upper LH	05-04119	$102.75
1 ea	MC0523901-22	Flap Upper RH	05-04120	$102.75
1 ea	MC0523901-19	Flap Lower LH	05-04117	$89.75
1 ea	MC0523901-20	Flap Lower RH	05-04118	$88.80
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP5	Flap skin kit	05-04172	$451.00
1 ea	MC0523901-25	Flap Upper LH	05-04121	$141.95
1 ea	MC0523901-26	Flap Upper RH	05-04122	$141.95
1 ea	MC0523901-27	Flap Lower LH	05-04123	$135.90
1 ea	MC0523901-28	Flap Lower RH	05-04124	$135.90
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP6	Flap skin kit	05-04173	$900.00
1 ea	MC0523901-25	Flap Upper Inbd LH	05-04121	$141.95
1 ea	MC1220100-20	Flap Upper Inbd RH	05-04135	$135.75
1 ea	MC1220100-5	Flap Upper Otbd LH	05-04132	$140.75
1 ea	MC1220100-6	Flap Upper Otbd RH	05-04133	$139.80
1 ea	MC1220100-27	Flap Lower Inbd LH	05-04123	$135.90
1 ea	MC1220100-18	Flap Lower Otbd RH	05-04134	$135.75
1 ea	MC1220100-3	Flap Lower Otbd LH	05-04130	$139.75
1 ea	MC1220100-4	Flap Lower Otbd RH	05-04131	$139.75
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP7	Flap skin kit	05-04173	$900.00
1 ea	MC0523901-25	Flap Upper Inbd LH	05-04121	$141.95
1 ea	MC1220100-26	Flap Upper Inbd RH	05-04122	$141.95
1 ea	MC1220100-5	Flap Upper Otbd LH	05-04132	$140.75
1 ea	MC1220100-6	Flap Upper Otbd RH	05-04133	$139.80
1 ea	MC1220100-27	Flap Lower Inbd LH	05-04123	$135.90
1 ea	MC1220100-28	Flap Lower Inbd RH	05-04124	$135.90

FLAP SKIN KIT COMPONENTS CONT.

Qty	MFG P/N	Description	P/N	Price
1 ea	MC1220100-3	Flap Lower Otbd LH	05-04130	$139.75
1 ea	MC1220100-4	Flap Lower Otbd RH	05-04131	$139.75
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-FLP8	Flap skin kit	05-04175	$894.00
1 ea	MC1220100-33	Flap Upper Inbd LH	05-04133	$139.80
1 ea	MC1220100-34	Flap Upper Inbd RH	05-04134	$135.75
1 ea	MC1220100-5	Flap Upper Otbd LH	05-04132	$140.75
1 ea	MC1220100-6	Flap Upper Otbd RH	05-04133	$139.80
1 ea	MC1220100-35	Flap Lower Inbd LH	05-04138	$135.80
1 ea	MC1220100-36	Flap Lower Inbd RH	05-04139	$135.80
1 ea	MC1220100-3	Flap Lower Otbd LH	05-04130	$139.75
1 ea	MC1220100-4	Flap Lower Otbd RH	05-04131	$139.75

AILERON SKIN KIT COMPONENTS

Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-AIL1	Skin Kit	05-04140	$734.00
1 ea	MC0523800-6	Aileron Upper Inbd LH	05-03373	$79.75
1 ea	MC0523800-7	Aileron Upper Inbd RH	05-03374	$79.80
1 ea	MC0523800-8	Aileron Upper Otbd LH	05-03375	$84.90
1 ea	MC0523800-9	Aileron Upper Otbd RH	05-03376	$79.75
1 ea	MC0523800-10	Aileron Lower Inbd LH	05-03377	$92.85
1 ea	MC0523800-11	Aileron Lower Inbd RH	05-03378	$87.95
1 ea	MC0523800-12	Aileron Lower Otbd LH	05-03379	$89.75
1 ea	MC0523800-13	Aileron Lower Otbd RH	05-03380	$89.75
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-AIL2	Skin Kit	05-04141	$1,029.00
1 ea	MC1624001-5	Aileron Upper Inbd LH	05-04145	$145.75
1 ea	MC1624001-6	Aileron Upper Inbd RH	05-04146	$145.75
1 ea	MC1624001-9	Aileron Upper Otbd LH	05-04149	$149.95
1 ea	MC1624001-10	Aileron Upper Otbd RH	05-04150	$149.95
1 ea	MC1624001-3	Aileron Lower Inbd LH	05-04143	$145.75
1 ea	MC1624001-4	Aileron Lower Inbd RH	05-04144	$145.75
1 ea	MC1624001-7	Aileron Lower Otbd LH	05-04147	$149.95
1 ea	MC1624001-8	Aileron Lower Otbd R	05-04148	$149.95
Qty	MFG P/N	Description	P/N	Price
KIT	SKN-KT-AIL3	Skin Kit	05-04142	$523.00
1 ea	MC1220085-11	Aileron Upper LH	05-04126	$149.95
1 ea	MC1220085-12	Aileron Upper RH	05-04127	$150.75
1 ea	MC1220085-13	Aileron Upper LH	05-04128	$150.75
1 ea	MC1220085-14	Aileron Upper RH	05-04129	$149.95

24 HR. EASY ONLINE ORDERING
VISIT OUR WEBSITE AT
WW.AIRCRAFTSPRUCE.COM

CESSNA STEERING RODS

These Cessna Steering Rods are better than the originals. Replace old, weak steering rods with these stainless steel, FAA-PMA approved steering rods and save up to $100 each.

Cessna Series	Serial Number	Part Number	Replaces Cessna P/N	Price Each
150	ALL	05-00273	0543022-3; L	$358.00
152	ALL	05-00274	0543022-4; R	$359.00
172,172A	28000 to 17247746	05-00275	0543022-1; L	$316.00
		05-00276	0543022-2; R	$316.00
172B,C	17247747 to 17249544	05-00589	0743008-1; L	$473.00
		05-00590	0743008-2; R	$473.00
172D, E, F, G, H, J, K, L, M, R172K	17247747 to 17249544 R1722000 to R1723454	05-00275	0543022-1; L	$316.00
F172D,E,F,G,H, K,L,M,N,P FP172 FR172E,F,G,H,J,K	F1720001 to F17202254 FP1720001 to FP1720003 FR17200001 to FP17200675	05-00276	0543022-2; R	$316.00
175,175A/B/C	55001 to 17557119	05-00589	0743008-1; L	$473.00
		05-00590	0743008-2; R	$473.00
182,182A/B/C/D	33000 to 53007 18253008 to 18253598	05-00589	0743008-1; L	$473.00
		05-00590	0743008-2; R	$473.00

CESSNA NOSE GEAR TORQUE LINK REPAIR KITS

This convenient kit includes all commonly replaced torque link parts. * FAA approved and certified standard hardware * Fits most single engine Cessna aircraft Please visit our website for kit components.

P/N 05-04427

TL-KT-1 .....P/N 05-04427 .....$106.75
TL-KT-2 ..... P/N 05-04619..... $160.75
TL-KT-4 .....P/N 05-04620 .....$150.75
TL-KT-5 ..... P/N 05-04621..... $137.75
TL-KT-6 .....P/N 05-04622 .....$126.75
TL-KT-7 ..... P/N 05-04623..... $136.75

CESSNA STEERING ROD BOOTS

Keep the exhaust and cold out of the cabin with these Kevlar/Fiberglass FAA/PMA approved Steering Rod Boots. These will last much longer & are less expensive than original Cessna boots.

FAA/PMA approved Steering Rod Boot application chart for Cessna Model Series 150, 152, 172, 175, and 182 Aircraft.

Model	Serial No.	Part No.	Price/
150 150A,B,C,D,E, F,G,H,J,K,L,M A150K, L, M F150F,G,H,J,K,L,M FA150K, L FRA150L,M	17001 – 59018 15059019 – 15079405 A1500001 – A1500734 F1500001 – F15001428 FA1500001 – F1500120 FRA1500121 – FRA1500336	05-00277	$63.75
152 A152 F152 FA152	15279406 – 15286033 A1520735 – A1521049 F15201429 – F15201980 FA1520337 – FA1520425	05-00277	$63.75
172 172A,B,C,D,E,F, G,H,I,K,L,M,N,P F172D,E,F,G,H, K,L,M,N,P FP172 FR172E,F,G,H,J,K	28000 – 46754 46755 – 17276673 F1720001 – F17202254 FP1720001 – FP1720003 FR17200001 – FR17200675	05-00279	$87.75
175 175A, B, C	55001 – 56238 56239 – 17557119	05-00279	$87.75
182 182A, B, C, D	33000 – 53007 18253008 – 18253598	05-00279	$87.75

INTAKE HEAT SHIELD DEFLECTOR

This part replaces Cessna part number 0750121. This intake Heat Shield Deflector is vibration dampened to prevent cracking! It is made of polished stainless steel for better heat control. FAA approved.

P/N 05-02361 ..... $128.75

Eligibility List	
Aircraft Models	Serial Numbers
175*, A,B,C	56083 thru 17557118
P172	P17257120 thru P17257188
180, A,B,C,D,E,F,G,H,J,K	30000 thru 18053203
182,A,B,C,D,E,F,G,H,J,K,L,M,N,P,Q,R	33000 thru 18268615
F182P,Q	F18200001 thru F18200169
A182J,K,L,M,N	A182-0001 thru A182-0148
T182	18267716 thru 18268615
185,A,B,C,D,E/A185E,F	185-0001 thru 18504448
185,A,B/A188,A,B	188-0001 thru 18803968T
T188C	T18803297T thru T18803968T
205,A	205-0001 thru 205-0577
206	206-0001thru 206-0275
U206,A,B,C,D,E,F,G	U206-0276 thru U20607020
P206,A,B,C,D,E,/TP206A,B,C,D,E	P206-0001 thru P20600647
TU206A,B,C,D,E,F,G	U206-0438 thru U20607020
207,A/T207,A	20700001 thru20700788
210,A,B,C,D,E,F,G,H,J,K,L,M,N,R/	57001 thru 21065009
T210K,LM,N,R	P21000001 thru P21000874
P210N,R	T210-0198 thru T210-0454
T210G,H,J	

Our P/N's are interchangeable with Cessna's P/N's; "AS" prefix denotes Aircraft Spruce! Call our parts specialists at Aircraft Spruce for part number assistance.

CESSNA BRASS SHIM TORQUE LINK

FAA-PMA APPROVED - Eliminates undampened torque link motion to prevent shimmy.

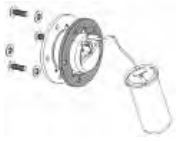
Part No.	Cessna Part No.	Thickness	Price ea
05-00429	S1450-6B14-010	.010"	$2.45
05-00430	S1450-6B14-007	.007"	$2.50
05-00431	S1450-6B14-005	.005"	$2.50

CESSNA FUEL SCREEN STANDPIPE

This FAA-PMA approved stainless steel Cessna Fuel Screen Standpipe is the last one you will need to buy. Improved design eliminates corrosion pits and stripped threads. 1963 and on.

P/N AS0756011-1 .....$128.75

CESSNA FUEL QUANTITY TRANSMITTERS



Saves hundreds of dollars in labor and kits and eliminates replacement of fuel quantity gages and wiring when not required. Engineered to be compatible with the original fuel quantity gage and wiring which uses time proven technology and reliability. Made from dupont viton, offering flexibility and fuel resistance at all temperature extremes.

Part No.	Description	Price Ea.
AS0426517-1	Fuel Transmitter	$258.95
AS0523557-1	Fuel Transmitter	$282.95
AS0726110-1	Fuel Transmitter	$272.95
ASS1588-1	Gasket (Viton Fuel Trans.)	$27.90
ASS1588-2	Gasket (Viton Fuel Trans.)	$19.50
ASS35010R10	Screw (5 Needed) Sold each	$3.90
ASS35010R14	Screw/Seal Fuel Trans.	$4.65

FUEL QUANTITY TRANSMITTER KITS

FQT-KT-1 -
This convenient kit includes everything you need to replace one fuel quantity transmitter. Kit Includes: MC0426517-1: Fuel Quantity Transmitter 1 each, MC0523619-1: Cover Gasket 1 each, MCS1588-1: Gasket Viton Fuel Transmitter 1 each, andMC-S35010R10: Screw/Seal (fuel transmitter) 5 each.

P/N 05-04109 .....$340.00

FQT-KT-2 -This convenient kit includes everything you need to replace one fuel quantity transmitter.
MC0523557-1 Fuel Quantity Transmitter: 1 Each
MC0523619-1 Cover Gasket: 1 Each
MCS1588-1 Gasket Viton Fuel Transmitter: 1 Each
MCS35010R10 Screw/Seal (Fuel Transmitter): 5 Each P/N 05-04110 .....$354.00

FUEL SELECTOR PLATE FOR CESSNAS

Before After

This new fuel selector plate is billet machined and anodized, with the text engraved on the plate. It is an efficient one piece design which is easy to install & factory guaranteed. FAA-PMA approved.

Cessna 172 - 37 Gals.....P/N 05-00227.....$59.95
Cessna 170 - 37 Gals.....P/N 05-00899.....$59.95
Cessna 172 - 36 Gals.....P/N 05-00901.....$59.95
Cessna 180 - 55 Gals.....P/N 05-00902.....$59.95
Cessna 180 - 60 Gals.....P/N 05-00903.....$52.95
Cessna 180 - 79 Gals.....P/N 05-00904.....$54.75
Cessna 172 - 84 Gals.....P/N 05-00905.....$52.95
Cessna 182 - 55 Gals.....P/N 05-00906.....$59.95

CESSNA FUEL SELECTOR VALVES

P/N 05-04298

P/N 05-04299

Description	Model	Part No.	Price
Left/Right/Off FAA PMA C120 AND C140	SHA200F202-120	05-04298	$567.00
Left/Right/Both/off FAA PMA C120 AND C140	SHA200F204-140	05-04299	$566.00

SEAT RAIL WEAR GAUGE FOR CESSNA AIRCRAFT

For checking seat rail wear limits as per FAA A.D. 87-20-03, Effective 09/24-/1990 Seat Rail Directive The gauge is to be used for inspection of the Cessna seat rail wear. This gauge is designed to measure the actual radius wear near the seat stop holes. Notice the different sized steps in each corner.

P/N 05-04428.....$37.85

CESSNA SEAT RAILS, ROLLERS, WASHERS, & BUSHINGS

These FAA-PMA replacement seat parts were developed to assist in complying with the parts replacement requirements of A.D. 87-20-03. This A.D. requires the periodic inspection and replacement of seat components of the entire Cessna light aircraft fleet. Our Parts are direct replacements for the wear related seat components. These seat parts are superior to the O.E.M. parts in many ways. Our rollers are fabricated from molydisulfide filled nylons for improved strength and self lubrication. All rollers are fully machined from extruded stock for finer surface finishes and higher strength. Our wear washers are tougher with far better wear and aging resistance. Seat rails were carefully engineered with small improvements for added strength, longer life, and easier installation without any sacrifice of full interchangeability with the O.E.M. parts.

SEAT RAILS

ROLLERS

Description	Part No.	Price Ea.	Description	Part No.	Price Ea.
AS0410219-1	05-00327	$162.75	AS0711693-4	05-00380	$254.95
AS0410219-2	05-00328	$174.75	AS0711693-6	05-00381	$202.95
AS0410230-2	05-00329	$227.95	AS0711693-7	05-00382	$201.95
AS0410230-3	05-00341	$195.75	AS0711693-8	05-00383	$210.95
AS0410235-1	05-00342	$162.75	AS0711693-9	05-00384	$174.75
AS0410235-2	05-00343	$162.75	AS1210025-2	05-00385	$188.75
AS0410235-6	05-00344	$154.75	AS1210025-3	05-00386	$183.75
AS0411545-1	05-00345	$144.99	AS1210408-1	05-00387	$97.80
AS0411545-2	05-00346	$113.75	AS1210408-12	05-00388	$128.75
AS0411545-3	05-00347	$38.50	AS1210408-14	05-00389	$178.75
AS0411545-4	05-00348	$81.75	AS1210408-15	05-00390	$213.95
AS0511000-14	05-00331	$175.75	AS1210408-16	05-00391	$173.95
AS0511000-15	05-00332	$192.75	AS1210408-17	05-00392	$157.75
AS0511000-64	05-00333	$238.95	AS1210408-18	05-00393	$69.75
AS0511000-68	05-00334	$247.95	AS1210408-21	05-00394	$93.75
AS0511000-69	05-00335	$252.95	AS1210408-22	05-00395	$241.95
AS0511000-70	05-00336	$279.95	AS1210408-23	05-00396	$212.95
AS0511240-10	05-00337	$209.95	AS1210408-24	05-00397	$217.95
AS0511240-11	05-00338	$218.95	AS1210408-4	05-00398	$154.75
AS0511240-12	05-00339	$128.75	AS1210408-5	05-00399	$193.95
AS0511240-14	05-00349	$176.75	AS1210408-6	05-00401	$100.75
AS0511240-15	05-00351	$85.99	AS1210408-8	05-00402	$107.75
AS0511240-2	05-00352	$208.95	AS1210408-9	05-00403	$220.95
AS0511240-3	05-00353	$231.95	AS1210520-11	05-00404	$126.75
AS0511240-4	05-00354	$129.75	AS1210520-12	05-00405	$266.95
AS0511240-5	05-00355	$117.75	AS1210520-15	05-00406	$108.75
AS0511240-6	05-00356	$147.99	AS1210520-16	05-00407	$128.85
AS0511240-7	05-00357	$242.95	AS1210520-2	05-00408	$157.75
AS0511240-8	05-00358	$265.95	AS1210520-3	05-00409	$55.75
AS0511240-9	05-00359	$178.85	AS1210520-4	05-00410	$57.75
AS0511243-4	05-00362	$69.80	AS1210520-9	05-00411	$233.95
AS0511243-5	05-00363	$74.80	AS1211514-1	05-00412	$86.75
AS0511243-6	05-00364	$76.75	AS1211514-2	05-00413	$72.75
AS0511293-1	05-00365	$159.75	AS2414002-1	05-00414	$79.85
AS0511293-2	05-00366	$213.95	AS2414002-2	05-00415	$79.85
AS0511293-3	05-00367	$199.85	ASS1551-1	05-00420	$7.70
AS0511293-4	05-00368	$114.75	ASS1554-1 Qty-8	05-00421	$16.80
AS0611134-2	05-00369	$208.95	ASS1704-1	05-00423	$2.10
AS0611134-3	05-00370	$208.95	AS1714000-22	05-00419	$17.90
AS0710618-1	05-00371	$106.75	AS1714000-41	05-00422	$15.85
AS0710618-4	05-00372	$201.95	AS0311310	05-00325	$8.90
AS0710618-5	05-00373	$111.80	AS0311586	05-00326	$13.80
AS0710618-6	05-00374	$94.75	AS0311715-3	05-00416	$157.85
AS0710658-2	05-00375	$67.75	AS0311715-4	05-00417	$210.95
AS0711693-1	05-00376	$218.95	AS43DD1-9	05-00432	$3.60
AS0711693-10	05-00377	$225.95	AS1613423-3	05-00418	$169.75
AS0711693-11	05-00378	$185.75	AS1414104-54	05-00424	$11.90
AS0711693-2	05-00379	$232.95			

SEAT KIT COMPONENTS (1 SEAT)

Kit No.	Description	Qty.	Part No.	Price
05-00425	Full articulating seat (2 crank handles).	Washers 8	AS1714000-22	$59.90
		Rollers 4	ASS1704-1	
		Bushings 4	AS1414104-54	
05-00427	Standard seat (1 or no crank handles).	Washers 8	ASS1554-1	$75.85
		Rollers 4	ASS1551-1	
		Bushings 4	AS1414104-54	
05-00428	1946-1962 and all 150-152	Rollers 4	AS0311310	$77.75
		Bushings 4	AS0311586	

For Cessna Roller Kit 141410-212 use:
- (1) Roller (P/N ASS155-1)
- (1) Bushing (P/N AS1414104-54)
- (2) Washers (P/N ASS1554-1)

These parts are generally used on the standard seats

For Cessna Roller Kit 1714000K200 use:
- (1) Roller (P/N ASS1704-1)
- (1) Bushing (P/N AS1414104-54)
- (2) Washers (P/N AS1714000-22)

These parts are generally used on the infinitely adjustable seats.

FAA-PMA Application chart for replacement parts for Cessna seats.

Description	Part No.	Model Series Eligible
AS0311310 roller	05-00325	150, 152, 170, 172, 175, 180, 182, 185, 195, 210
AS0311586 bushing	05-00326	
ASS1554-1 washer	05-00421	172, 180, 182, 185, 188, 205, 206, 207, 210
AS1714000-22 washer	05-00419	
AS1714000-41 washer	05-00422	
AS1414104-22 bushing	05-00323	
ASS1704-1 roller	05-00423	
ASS1551-1 roller	05-00420	

CESSNA FLAP ROLLER KITS

FLP-KT-1

FLP-KT-2

Flap attachment kits are available for Cessna aircraft from Cessna 150 thru T210. Each kit contains FAA-PMA replacement rollers, bushings, and spacers for the flap attachment of one airplane. Our ASS1450-5N12-050 shims are stainless steel for better corrosion resistance. Individual FAA-PMA components are available on request.

Model	Serial No.	Year	Kit No.	Part No.	Kit Price
150	17001-15071128	59-69	FLP-KT-1	05-00317	$289.95
150	15071129 & on	70-77	FLP-KT-2	05-00318	$298.95
152	15279406 - 15285564	78-80	FLP-KT-2	05-00318	$298.95
152	15285565 & on	81 & on	FLP-KT-3	05-00319	$263.95
F152	F15201429-F15201908	78-80	FLP-KT-2	05-00318	$298.95
F152	F15201909 & on	81 & on	FLP-KT-3	05-00319	$263.95
A152	A1520735-A1521014	78-80	FLP-KT-2	05-00318	$298.95
A152	A1521015 & on	81 & on	FLP-KT-3	05-00319	$263.95
FA152	FA1520337-FA1520387	78-80	FLP-KT-2	05-00318	$298.95
FA152	FA1520388 & on	81 & on	FLP-KT-3	05-00319	$263.95
170B	ALL	52-54	FLP-KT-1	05-00317	$289.95
172	28000-17249544	55-62	FLP-KT-1	05-00317	$289.95
172	17249545-17274009	63-80	FLP-KT-2	05-00318	$298.95
172	17274010 & on	81 & on	FLP-KT-3	05-00319	$263.95
177	ALL	68-78	FLP-KT-4	05-00321	$434.00
175	ALL	58-62	FLP-KT-1	05-00317	$289.95
180	ALL	53-82	FLP-KT-1	05-00317	$289.95
182	33000-18253598	56-62	FLP-KT-1	05-00317	$289.95
182	18253599 & on	63 & on	FLP-KT-3	05-00319	$263.95
185	ALL	61-82	FLP-KT-1	05-00317	$289.95
188	ALL	66-84	FLP-KT-3	05-00319	$263.95
205	ALL	63-64	FLP-KT-1	05-00317	$289.95
206	2060001-20601568	64-70	FLP-KT-4	05-00321	$434.00
207	ALL	69-84	FLP-KT-4	05-00321	$434.00
210	57001-21058220	60-63	FLP-KT-1	05-00317	$289.95
210	21058819 & on	80 & on	FLP-KT-7	05-00324	$378.00
T210	T2100001-T2100197	64-66	FLP-KT-6	05-00323	$503.00

ASS14503510-032 Wear washer kit (8 req/kit)..... P/N 05-00587.....$3.35 ea.

SEAT ROLLER HOUSING GAUGE

Aircraft Spruce now offers a seat roller housing measuring tool for Cessna aircraft. This gauge is designed to facilitate inspection of seat roller housings for wear as required by mandatory FAA AD 2011-10-09. This gauge simplifies determining whether the housing is in or out of tolerance by allowing the areas of concern to be gauged as opposed to measuring individual attributes of each housing with calipers. Results are positive and quick with this gauge. P/N 05-06819 .....$117.75

SEAT STOP KITS FOR CESSNAS

These seat stops and related hardware are available in convenient kits for your aircraft. Call for the correct kit part no. for your Cessna aircraft.

Seat stop kit #1 (1 ea. AS0713074-1, 1 ea. MS24665-132-1, 1 ea. MS20392-1C21) P/N 05-00580..... $15.99

Seat stop kit #2 (1 ea. AS0511242-1, 1 ea. MS35265-41) P/N 05-00581..... $12.95

Seat stop kit #3 (1 ea. AS0713074-1, 1 ea. MS24665-132, 1 ea. MS20392-1C21, 2 ea. NAS43DD1-9) P/N 05-00582..... $22.65

SAF-T-STOP

Saf-T-Stop is an auxiliary seat stop mechanism approved by the FAA for use with Cessna seat track A. D. #87-20-03. Installs easily, sliding over seat track. Approved for: Cessna 150, 152, 172, R172, 175, 180, 182, 185, 190, 205, 206, 207, 210, 303, 337. Not a seat lock, Saf-T-Stop is designed to restrict rearward motion if the seat lock fails. P/N 13-18510 ..... $45.50

CESSNA SEAT RAIL TEMPLATES

These template blanks are used to transfer holes from the old seat rail to the new seat rail when replacing Cessna seat rails. These templates are economical and convenient to use. One per seat rail is required. For seat rail series AS511240, AS511243, and AS24114002 use SRTEM2. All other seat rail series can use SRTEM1. NOTE: Models 150-152 do not require templates as the screw holes are predrilled. Model 177 cardinal seat rails require (2) SRTEM1 templates per rail. * Dimensions: * SRTEM1-1.5" x 38" x .025" * SRTEM2-2.25" x 30" x .025"

SRTEM1 ..... P/N 05-00449..... $5.70

SRTEM2..... P/N 05-00450..... $6.55

CESSNA SPACERS

Spacer sleeve: made of aluminum alloy 2024 overall P/N 06-00639..... $0.38

AP

SEAT RAILS FOR CESSNA AIRCRAFT

These seat rails have only pilot holes drilled in the rail base allowing the installer to exactly match the aircraft floor rivet pattern. The manufacturer discovered while installing and developing our replacement seat rails that the seat rail attachment hole pattern was not consistant from aircraft to aircraft. Even small inconsistancies in the hole locations in the aircraft floor make installation of new seat rails very difficult. For this reason, all these seat rails have only a few smaller pilot attachment holes drilled at the factory. This allows the installer to precisely locate the attachment holes to match the holes in the aircraft floor. All special sized or machined attchment holes are factory machined to finish dimensions. It is necessary to install all required fasteners when seat rails are installed.

After studying countless worn and failed seat rails these rails were designed with 15% more metal in critical areas. The result is more crack resistant, durability, strength and longer life.

Installation Tip: The aircraft floor is subject to corrosion from moisture under the seat rails, be sure to remove and treat any corrosion before installing the new seat rails.

Description	Part No.	Price
AS0411545-2	05-00346	$113.75
AS0411545-1	05-00345	$144.99
AS0411545-3	05-00347	$38.50
AS0411545-4	05-00348	$81.75
AS0410219-2	05-00328	$174.75
AS0410219-1	05-00327	$162.75
AS0410230-2	05-00329	$227.95
AS0410230-3	05-00341	$195.75
AS0410235-6	05-00344	$154.75
AS0410235-1	05-00342	$162.75
AS0410235-2	05-00343	$162.75
AS0511000-14	05-00331	$175.75
AS0511000-15	05-00332	$192.75
AS0511293-1	05-00365	$159.75

Description	Part No.	Price
AS0511293-3	05-00367	$199.85
AS0511293-4	05-00368	$114.75
AS0511293-2	05-00366	$213.95
AS0511240-4	05-00354	$129.75
AS0511240-2	05-00352	$208.95
AS0511240-3	05-00353	$231.95
AS0511240-6	05-00356	$147.99
AS0511240-7	05-00357	$242.95
AS0511240-8	05-00358	$265.95
AS0511240-9	05-00359	$178.85
AS0511243-4	05-00362	$69.80
AS0511243-5	05-00363	$74.80
AS0511243-6	05-00364	$76.75
AS2414002-1	05-00414	$79.85
AS2414002-2	05-00415	$79.85

RUDDER PEDALS FOR CESSNA AIRCRAFT

COMPLETELY NEW RUDDER PEDAL -

* Less money and longer life!
* Bronze bushings at the pivot points resist wear and vibration for longer pedal life.
* Precision cast heat treated aluminum alloy
* Power coat finish for durability and corrosion protection.
* FAA-PMA direct replacement for Cessna (Part #1460320-1)

Model AP2000-01 ..... PN 05-04165 ..... $122.80

RE-BUSHED RUDDER PEDAL -

Model Numbers: 0760678-1, 0760678-2 and 1460320-1

* FAA approved repair for magnesium rudder pedals.
* Worn and elongated pedal holes are reamed and fitted with bushings for a longer life
* Bronze bushings resist vibration and corrosion wear longer than the magnesium casting.
* Fits most single engine Cessnas from 1963-1981, except for model 188

Model 0760678-1-R ..... PN 05-04166 ..... $99.75 ..... $40.00 Core
Model 0760678-2-R ..... PN 05-04167 ..... $111.75 ..... $40.00 Core
Model 1460320-1-R ..... PN 05-04168 ..... $86.75 ..... $30.00 Core

Core Credit Eligibility:
Large Hole Dia. Max <0.490 Small Hole Dia. Max <0.275
Pedals worn beyond these limits are not eligible for core credit. Re-bushed pedals may be returned for core credit but must follow the same criteria.

150/152 SEAT RAIL SCREW KIT SR150-SCREW-KIT

This is screw kit specifically for the Cessna 150/152 seat rails. This #10 Structural Screw Kit contains all screws and nuts required to install four seat rails.

Kit Contains: 40 MS27039-1-08 Screw 10-32 x .531, 2 MS27039-1-09 Screw 10-32 x .594, 2 MS27039-1-17 Screw 10-32 x 1.094, 40 MS21044N3 Nut, Nylon Lock P/N 05-04107 ..... $27.85

CESSNA MOTOR MOUNT BLOCK LOCK WASHER

One side is embossed with a surface texture for improved locking strength and to make sure the washer does not slip while tightening. FAA approved using stronger material than the original, allowing the standard washer to be eliminated. * Designed with six tabs instead of two.* Cessna 180, 182, 185, 188, 205, 206, 207, 210, 310, 320, 411, and 414 model aircraft P/N 05-01742 ..... $6.50

UNIVERSAL SAFETY-FOOT

The UNIVERSAL SAFETY FOOT is a secondary seat stop for both pilot and co-pilot seats for the 100 & 200 earlier Cessnas. Prevents the seat from sliding backwards when the pins are NOT engaged in the seat rails. Meets the requirements of the MANDATORY COMPLIANCE CESSNA ISSUED OWNER ADVISORY SEB07-5A dated 5-14-2007. This advisory requires all earlier 100 & 200 model Cessnas to have a secondary seat stop installed within 24 months from the date of the advisory. Issued as a NO HAZARD INSTALLATION APPROVAL by the FAA dated 4-27-2006, the Safety Foot can be installed by the owner/operator of the aircraft. Due to its simple design, the Safety Foot can be installed in about 45 minutes and in most cases, the seats do not have to be removed from the aircraft. Clamped to the seat frame and integral with the existing seat retention and operating mechanism of the aircraft. Three Allen wrenches and a Setting Gage are the only tools required for the installation. The Setting Gage is provided in the kit along with detailed instructions. The product is warranted for 12 months from the date of purchase.

P/N 05-04104 ..... $220.00

FUEL STRAINER KIT FOR CESSNA AIRCRAFT

FUEL STRAINER SEAL KIT. - Kit contains: Gasket and 3 O- Rings Approved for Cessna models: 180H*, J, K

P/N 05-01705 ..... $14.90

FS-KT-2 FUEL BOWL KIT (FAA-PMA) - Kit contains: 1 MC0756009-8 Gasket 1 MC0756008-1 Fuel bowl 1 MCM83248/1-010 O-ring 1 MCM83248/1-111 O-ring 1 MCM83248/1-138 O-ring 1 MC0756015-1 Washer 1 MCS1573-3 Nut

P/N 05-04425 ..... $148.85

FS-KT-3 FUEL STRAINER REBUILD KITS - Kit contains: (1) FS-KT-1 Gasket kit (1) MC0756008-1 Fuel bowl (1) MC0756015-1 Washer (1) MCS1573-3 Nut (1) MC0756010-11 Plunger (1) MC0756011-1 Standpipe (2) MCS145027 A7-032 Washer (1) 0756012-1 Spring P/N 05-04426 ..... $358.00

FUEL STRAINER PLUNGER - MC0756010-11 ..... * Special electro polished shaft for longer o-ring life.

* McFarlane's blue Viton rubber tip will outlast the original in any fuel!

P/N 05-04424 ..... $98.75

FUEL STRAINER ASSEMBLY - Kit contains: Gasket Kit, Fuel Bowl, 2Washers, Nut, Plunger, Standpipe, Spring, and Top Assembly. Approved for Cessna models: 182H*,J, K, L , M, N , P , Q, R

P/N 05-04111 ..... $679.00

FUEL STRAINER AND CABLE KIT - Kit contains: Gasket Kit, Fuel Bowl, 2 Washers, Nut, Plunger, Standpipe, Spring, Top Assembly, Filter, and Strainer Drain Cable Approved for Cessna models: F182P, Q

P/N 05-04112 ..... $624.00

FUEL STRAINER BOWL - Engineered to last! Manufactured using improved materials for added strength and gold anodized for corrosion resistance. Computer machined (not die cast).

P/N 05-01704 ..... $110.95

FUEL STRAINER STANDPIPE - The last one you will buy! Stainless steel, No more corrosion pits or stripped threads, Costs less! P/N 05-00281 ..... $109.95

CESSNA 177RG FUEL RESERVOIR DRAIN PLUNGER

For the Cessna Cardinal 177RG aircrarft. McFarlane's blue vulcanized Viton rubber tip will outlast the original in any fuel! All metal, one piece design eliminates the flimsy C-clip.

Model	Serial No.	Replaces
177RG	177RG0001 thru 177RG1366	2016021-4
F177RG	F177RG0001 thru F177RG0177	2016021-4

* 1 each required for aircraft serial numbers 177RG0001 thru 177RG0282 and F177RG0001 thru F177RG0062. * 2 each required for aircraft serial numbers 177RG0283 thru 177RG1366 and F177RG0063 thru F177RG0177.

P/N 05-04613 ..... $269.95

FUEL STRAINER TOP ASSEMBLY FOR CESSNA AIRCRAFT

Applicable to many Cessna aircraft models. Assembly, part number MC0756005-2 includes multiple improvements to address corrosion related service problems with the original Cessna housing. Uses an anodized coating over the corrosion resistant aluminum alloy to prevent corrosion between the aluminum top assembly and the brass filter. The fuel inlet tube attached has also been improved with redundant methods of attachment to ensure a reliable, secure fit. FAA Approved. P/N 05-07238 ..... $287.95

RUDDER AND ELEVATOR BUSHING KITS FOR CESSNA

These kits include two bushing sizes for each hinge location. This allows a selective fit and solves the common Cessna fit and interference problems. • Hardened corrosion resistant stainless steel. • Cessna models 120 thru 177 • All components are also available separately.

Model	Elevator Bushing Kit	Rudder Bushing Kit
120, 140, 140A (Bushing)	MC0422215	MC0431119K
150, 150A, B, C, D, E	EBC-KT-1	RBC-KT-1
150F, G, H, J	EBC-KT-1	RBC-KT-2
150K*, A150K* Eligibility Note 1 (150K S/N 15071129 THRU 15071621;		
A150K S/N A1500001 THRU A1500129)	EBC-KT-1	RBC-KT-3
150K*, L,M, A150K*, L,M Eligibility Note 2 (150K S/N 15071622 THRU 15072003; A150K S/N A1500130 THRU A1500226)	EBC-KT-2	RBC-KT-3
A-150L, A-A150L	EBC-KT-2	RBC-KT-3
F150F,G,H,J	EBC-KT-1	RBC-KT-2
F150K,L*, FA150K* Eligibility Note 3 (F150L S/N 15000659 THRU F15000699; FA150K S/N FA1500001 THRU FA1500039)	EBC-KT-1	RBC-KT-3
F150L*, M, FA150K*,L,M Eligibility Note 4 (F150L S/N 15000700 THRU F15001143; F150K S/N FA1500040 THRU FA1500081)	EBC-KT-2	RBC-KT-3
FRA150L, M	EBC-KT-2	RBC-KT-3
152*, A152* Eligibility Note 5 (152 S/N 15279406 THRU 15285833; A152 S/N A1520735 THRU A1521025)	EBC-KT-3	RBC-KT-3
152*, A152* Eligibility Note 6 (152 S/N 15285834 THRU 15286033; A152 S/N A1521026 THRU A1521049)	EBC-KT-4	RBC-KT-3
F152*, FA152* Note Eligibility Note 7 (F152 S/N 15201429 THRU F15201943; FA152 S/N FA1520337 THRU FA15203879)	EBC-KT-3	RBC-KT-3
F152*, FA152* Eligibility Note 8 (F152 S/N F1501944 THRU F15201980; FA152 S/N FA1520388 THRU FA1520425)	EBC-KT-4	RBC-KT-3
172, 175	EBC-KT-5	RBC-KT-4
172A,B,C* 175A,B,C* Eligibility Note 9 (172C S/N 17248735 THRU 17249085; 175C S/N 17557003 THRU17557064)	EBC-KT-5	RBC-KT-5
172C*,175C* Eligibility Note 10 (172C S/N 17249086 THRU 17249544; 175C S/N 17557065 THRU 17557119)	EBC-KT-5	RBC-KT-6
172D,E,F,G,H,I,K,L,M,N,P* Eligibility Note 11 (172P S/N 17274010 THRU 17275963)	EBC-KT-5	RBC-KT-6
172P*,Q,R,S Eligibility Note 12 (172P S/N 17275964 THRU 17276654)	EBC-KT-5	RBC-KT-7
172RG, P172D, R172K	EBC-KT-5	RBC-KT-6
F172D,E,F,G,H,K,L,M,N,P* Eligibility Note 13 (172P S/N F17202040 THRU F17202208)	EBC-KT-5	RBC-KT-6
F172P* Note Eligibility Note 14 (172P S/N F17202209 THRU F17202254)	EBC-KT-5	RBC-KT-7
F172, FR172E,F,G,H,J,K	EBC-KT-5	RBC-KT-6
177,177A,B,177RG,F177RG	-	MC0532104K

Unless otherwise noted, approval is for all serial numbers for each model listed. The eligibility for the kits also applies to the component bushings and bearings.

ELEVATOR BUSHING KIT COMPONENTS: 2 Bearings, 2 Bushings, 2 Bolts, 2 Washers, 2 Nuts, and 2 Pins.

EBC-KT-1 ..... P/N 05-04576 ..... $31.85
EBC-KT-2 ..... P/N 05-04577 ..... $34.90
EBC-KT-3 ..... P/N 05-04578 ..... $36.50
EBC-KT-4 ..... P/N 05-04579 ..... $62.75
EBC-KT-5 ..... P/N 05-04580 ..... $63.85

RUDDER BUSHING KIT COMPONENTS: 2 Bearings, 2 Bushings, 2 Bolts, 2 Washers, 2 Nuts, and 2 Pins.

RBC-KT-1 ..... P/N 05-04569 ..... $16.75
RBC-KT-2 ..... P/N 05-04570 ..... $47.85
RBC-KT-3 ..... P/N 05-04571 ..... $48.50
RBC-KT-4 ..... P/N 05-04572 ..... $30.70
RBC-KT-5 ..... P/N 05-04573 ..... $51.99
RBC-KT-6 ..... P/N 05-04574 ..... $49.50
RBC-KT-7 ..... P/N 05-04575 ..... $46.50

ELEVATOR & RUDDER HINGE BEARING TOOL

This unique tool is specifically designed to prevent damage when installing or removing sintered bronze elevator and rudder hinge bearings in Cessna aircraft. Seven piece kit for common bearing sizes. Heat treated stainless steel will last a lifetime. Kit comes in a convenient storage pouch. P/N 05-04869 ..... $71.75

CESSNA ROD ENDS

Description	Part Number	Price
Cessna Rod End S1105-4	06-00685	$45.50
Cessna Rod End S1819-3	05-01819-3	$40.50

CESSNA YOKE UNIVERSAL JOINT AND PROTECTIVE SLEEVE

A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.

UNIVERSAL JOINT CONTROL YOKE FAA-PMA

MC0411257 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement. Restores safe, responsive control. Cessna models 120 thru 185 P/N 05-04558 ..... $242.95

CESSNA UNIVERSAL JOINT KIT

UJC-KT-1 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.Replace worn or corroded joints. Cessna models 150 thru A185

Kit Contents		
Part Number	Description	Qty
AN3-10A	BOLT	2
AN3-11A	BOLT	2
MC0411257	UNIVERSAL JOINT, Control Yoke	1
MC6183	SLEEVE, Pin Retention	1
MS21044N3	NUT, Lock, Nylon, 10-32	2

P/N 05-04560 ..... $259.95

CESSNA UNIVERSAL JOINT KIT

UJC-KT-2 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.

Kit Contents		
Part Number	Description	Qty
AN3-10A	BOLT	2
AN3-11A	BOLT	2
MC0411257	UNIVERSAL JOINT, Control Yoke	1
MS21044N3	NUT, Lock, Nylon, 10-32	2

P/N 05-04561 ..... $267.95

SLEEVE, PIN RETENTION FAA-PMA

MC6183 - A universal joint attaches to each control yoke shaft behind the instrument panel. Slack or roughness in control yoke motion commonly indicates excess universal joint wear or corrosion that may necessitate replacement.

The universal joints and the sleeve are available separately or together in the kit UJC-KT-1 for Cessna models 150 thru A185. Each convenient kit also includes installation hardware. P/N 05-04559 ..... $5.50

BLUE SKY LATCH FOR CESSNAS

Install it right on the plane. Simply drill out the two rivets holding your old latch system on your door. You will use these two same holes to install the Blue Sky Latch. The latch is made from TPE (thermal plastic rubber), it has excellent weather ability, and stands up to extreme temperatures. Next use a hack saw blade and cut off that point on your door stem. Then use a small hammer and tap the strike on the end. Align your door using the phillips head adjustment on your door stem. Your done. The Thermal plastic rubber acts a bumper as well as a latch. You get all the hardware including structural AN screws and elastic stop nuts in the kit. Step by Step installation guide with photos showing how easy it is to install. C150 & 152 ..... P/N 05-04563 ..... $39.95

FLAP ROLLER INSTALL TOOL 970

Makes installation of the aft flap roller, bushing and washers easy. Holds parts in alignment while inserting the bolt. Long handle allows access through the small inspection openings. Cessna 150 thru 210. ..... P/N 05-04764 ..... $36.85

CESSNA 182 GROSS WEIGHT INCREASE STC

A Supplemental Type Certificate (STC) that will increase the useful load of a Cessna 182P or 182Q by 150 to 160 pounds, and the ramp weight (in most cases) by 160 pounds. This STC requires no parts, no modifications, and no installation labor costs. ..... P/N 05-04889 ..... $750.00

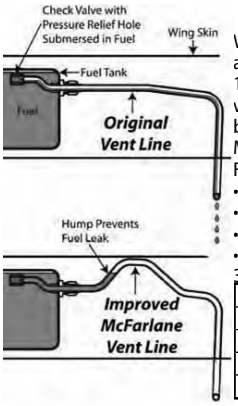
AP

COWL FLAP CONTROLS EARLY CESSNA 180 SERIES

FAA-PMA approval for cowl flap controls for early Cessna 180 model series aircraft. These new controls are the dual style, push to unlock type, eligible for Cessna 180, 180A, and 180B series aircraft. They feature a hardened stainless steel housing that won't wear and prematurely lose locking strength like the OEM brass housings. The new cowl flap controls offer solid metal construction and Teflon lined conduit, providing precise, positive control even after years of service in the harshest environments. Available with your choice of a black anodized knob or original style chrome knob.

MC0713041-1 Chrome Knob..... P/N 05-06979..... $313.00
MC0713041-1B Black Knob..... P/N 05-06980..... $296.95

CESSNA FUEL VENT LINES



We now have the improved fuel vent lines approved for many additional Cessna 150, 172, and 175 series aircraft. Parts ending with a "K" suffix indicate the inclusion of a rubber grommet, p/n MS3548-14, and hose, p/n MCS1495-8.

Features:
- Stops environmental and asphalt damage
- Fly with known full tanks
- Extends useful range
- FAA-PMA direct replacement – No STC or 337 for needed

Model	Part No.	Price
MC0523559-6	05-06982	$99.90
MC0523559-6K	05-06983	$101.75
MC0523559-8	05-06984	$65.75
MS0523559-8K	05-06985	$114.90

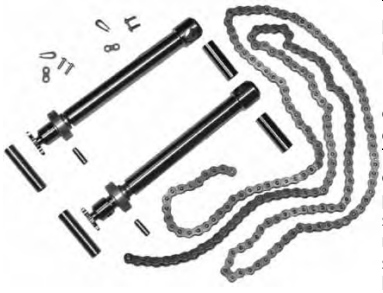
REPLACEMENT REAR SEAT AIR VENT TUBE ADAPTER

The vent tube adapter for Cessna aircraft models offers an aluminum replacement with a limited lifetime warranty, and won't crack like the old plastic style adapters. Restores rear seat airflow.

FAA/PMA Approved.

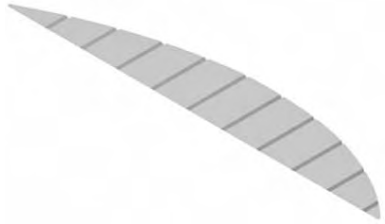
P/N 05-04645..... $76.80

STABILIZER JACK SCREW ACTUATOR KIT FOR CESSNA 180, 182 AND 185 AIRCRAFT



This is a FAA-PMA/STC Stabilizer Jack Screw Actuator Kit for Cessna models 180, 180A-K, 182, 182A-C, 185, 185A-E, and A185E-F aircraft. Directly replaces the original Cessna assembly. The original low-grade steel components have been replaced with duplex stainless steel for extreme corrosion resistance even in a harsh saltwater environment. This high strength stainless steel was developed by the British for under-sea concrete reinforcing. Saltwater does not have any effect on this steel. Precision bearings are used with precision machining to reduce free play, while using extra-low temperature grease for easy turning in low temperatures. For improved strength and reliability, McFarlane redesigned the sprocket and retaining collar to allow for the use of a 5/32" roll pin for attachment, as opposed to the 3/32" roll pins originally used. This more than doubles the strength of the design. Bushings and a stainless steel chain with connectors are included. P/N 05-06467.....$1,568.00

ELEVATOR TRIM SKINS CESSNA 170/190/195



Features:
- More precise corrugation spacing and shape
- No pre-drilled holes to misalign
- Precisely formed and CNC cut to shape to match OEM skins
- Plastic coated on both sides for better protection during handling (remove before installation)
- Direct replacement - No STC required

Description	Part Number	Price
Elevator Tab Lower MC0334100-4	05-07174	$80.75
Elevator Tab Upper MC0334100-3	05-07176	$80.75
Elevator Upper RH MC0334100-5	05-07177	$167.75
Elevator Lower RH MC0334100-6	05-07178	$167.75
Elevator Upper RH MC0334200-4	05-07179	$167.75
Elevator Lower LH MC0334200-3	05-07181	$167.75

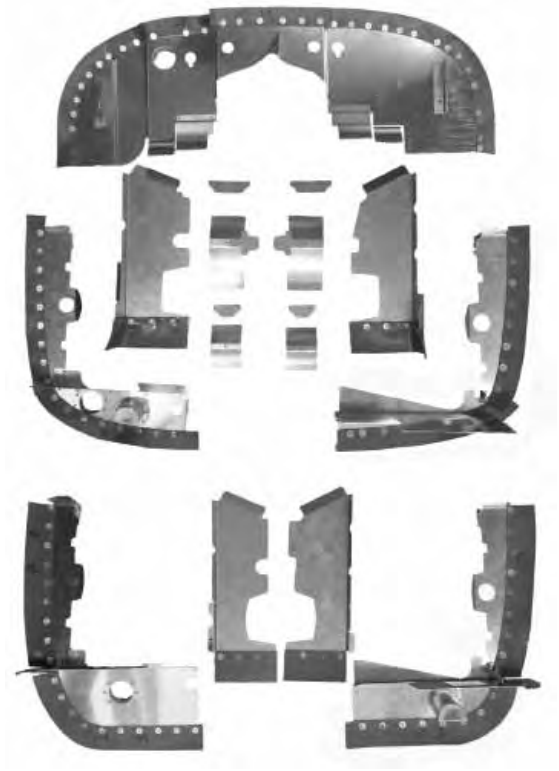
COWL SAVER BAFFLE SEALS FOR 172R/S CESSNA AIRCRAFT

FAA-PMA Approved Baffle Seals for 172R/S Cessna Aircraft.

Features:
- FAA-PMA Approved
- Part Numbers MC0509070-4, MC0509071-2, MC0509072-4, MC0509074-2 are applicable to Cessna 172Q/R/S aircraft
- Cowl SaverTM new low friction laminated material (30x less friction than silicone)
- Precut seals for fast installation
- Addresses issues raised in SB 08-53-01 regarding cracking due to vibration
- BSC-KT-1 kit includes all required baffle seals, MS20470A4-5 soft rivets and 6036-012 retainer strips for one aircraft

McFarlane Part Number	Description	Our Part Number	Price
BSC-KT-1	Baffle Seal KIT	05-06475	$287.95
MC0509069-4	Baffle Seal, RH AFT	05-06476	$24.50
MC0509070-4	Baffle Seal, LH AFT	05-06477	$24.50
MC0509071-2	Baffle Seal, CYL 1 RH FWD	05-06478	$22.50
MC0509072-4	Baffle Seal, CYL 2 LH FWD	05-06479	$22.50
MC0509073-6	Baffle Seal, CYL 3 RH AFT	05-06480	$22.50
MC0509074-2	Baffle Seal, CYL 4 LH AFT	05-06481	$22.50
MC0509079-2	Baffle Seal, Air Intake Heat M	05-06482	$27.85
MC0555250-17	Baffle Seal, Fwd RH Lower	05-06483	$30.80
MC0555250-18	Baffle Seal, Fwd RH Middle	05-06484	$27.85
MC0555250-19	Baffle Seal, Fwd RH Upper	05-06485	$22.70
MC0555259-25	Baffle Seal, Fwd LH Lower	05-06486	$31.90
MC0555259-26	Baffle Seal, Fwd LH Middle	05-06487	$27.85
MC0555259-27	Baffle Seal, Fwd LH Upper	05-06488	$32.95
MC2455076-1	Baffle Seal, RH AFT Sub Panel	05-06489	$19.99

CESSNA ENGINE BAFFLES



150 BAFFLES

Baffle Number	Part No.	Price
AF0455000-4	05-03078	$30.00
AF0450502-22	05-03079	$30.00
AF0455000-11	05-03080	$30.00
AF0450502-23	05-03081	$30.00
AF0450502-42	05-01482	$363.00
AF0450502-16	05-01483	$182.00
AF0450322-2	05-01484	$35.00
AF0455001-2	05-01485	$182.00
AF0450210	05-01486	$9.00
AF0450209 Seal	05-01487	$7.00
AF0450171	05-01488	$31.00
AF0450502-19	05-01489	$182.00
AF0450322-3	05-01490	$35.00
AF5001-3	05-01491	$182.00
150 Baffle Set	05-03270	$945.00

152 BAFFLES

Baffle Number	Part No.	Price
AF0455012-7	05-03099	$25.00
AF0455012-10	05-03101	$32.00
AF0455012-11	05-03102	$21.00
AF0455006-5	05-03103	$21.00
AF0455018-21	05-03106	$172.00
AF0455013-171	05-03107	$70.00
AF0455018-27	05-03108	$105.00
AF0455018-25	05-03109	$105.00
AF0455018-19	05-03110	$69.00
AF0455018-22	05-03111	$199.00
AF0455021-1	05-03112	$38.00
AF0455007-1	05-03113	$25.00
AF0455015-1	05-03114	$43.60
AF0455015-2	05-03115	$42.00
AF0455013-23	05-03116	$32.00
AF0455013-17	05-03117	$109.00
AF0455013-19	05-03118	$25.00
AF0455013-14	05-03119	$116.00
AF0455012-1	05-03120	$90.00
152 Baffle Set	05-03273	$919.00

170B, 172 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0550163	05-01492	$326.00
AF0550164-8	05-01493	$92.00
AF0450322-3	05-01494	$39.75
AF0550164-10	05-01495	$19.00

170B, 172 EARLY MODEL Baffles Cont.

AF0450209	05-01496	$7.00
AF0550165-2	05-01505	$96.75
AF0550111-7	05-01506	$99.85
AF0450210	05-01507	$10.50
AF0550164-7	05-01508	$92.00
AF0450322-2	05-01509	$39.75
AF0450171	05-01510	$35.65
AF0550164-11	05-01511	$19.00
AF0550165-6	05-01512	$94.75
AF0550117	05-01508	$92.00
AF0550111-4	05-03062	$6.00
170B, 172 Early Model Baffle Set	05-03266	$935.00

172 I, K, L, & EARLY M BAFFLES

Baffle Number	Part No.	Price
AF0555206-1	05-03082	$211.95
AF0555204-1	05-03083	$90.75
AF0555203-1	05-03084	$91.75
AF0555199-2	05-03085	$212.95
AF0555199-1	05-03087	$206.95
AF0555205-1	05-03088	$85.75
AF0555202-1	05-03089	$91.75
AF0555207-1	05-03090	$211.95
172 I, K, L, 7 Early M Baffle Set	05-03271	$919.00

172M BAFFLES

Baffle Number	Part No.	Price
AF0555206-12	05-03091	$211.95
AF0555204-5	05-03092	$101.75
AF0555211-7	05-03094	$211.95
AF0555216-202	05-03095	$237.95
AF0555212-1	05-03096	$27.00
AF0555217-1	05-03097	$237.95
AF0555213-5	05-03038	$112.75
AF0555214-7	05-03041	$112.75
172M Baffle Set	05-03272	$1,029.00

172N BAFFLES 1979.5-1980

Baffle Number	Part No.	Price
AF0555298-3	05-03121	$211.95
AF0555233-1	05-03122	$75.85
AF0555235-1	05-03123	$212.95
AF055524-1	05-03124	$95.90
AF0555259-1	05-03125	$27.00
AF0555213-5	05-03038	$112.75
AF0555250-9	05-03039	$237.95
AF0555214-7	05-03041	$112.75
AF0555259-14	05-03043	$237.95
172N Baffle Set	05-03274	$1,045.00

172P BAFFLES

Baffle Number	Part No.	Price
AF0555309-1	05-03035	$211.95
AF0555318-1	05-03037	$123.75
AF0555213-5	05-03038	$112.75
AF0555250-9	05-03039	$237.95
AF0555211-9	05-03040	$211.95
AF0555214-7	05-03041	$112.75
AF0555307-1	05-03042	$27.00
AF0555259-14	05-03043	$237.95
AF0555215-4	05-03126	$80.75
172P Baffle Set	05-03275	$1,027.00

177 BAFFLES

Baffle Number	Part No.	Price
AF1755004-1	05-03147	$231.95
AF1755007-1	05-03148	$106.75
AF1755009-1	05-03149	$106.75
AF1755005-2	05-03150	$212.95
AF1755010-1	05-03151	$106.75
AF1755005-1	05-03152	$232.95
AF1755008-1	05-03153	$106.75
AF1755003-1	05-03154	$231.95
177 Baffle Set	05-03279	$1,335.00

180-182 BAFFLES

Baffle Number	Part No.	Price
AF0750128-20	05-01528	$276.95
AF0750128-19	05-01530	$113.75
AF0750128-21	05-01531	$82.75
AF0750128-23	05-01532	$113.75
AF0750128-22	05-01533	$276.95
AF0750117-30	05-01552	$39.00
AF0750135-4	05-01561	$27.00

All baffles are bare 6061-T6 aluminum unless the powder coating option is chosen. The powder coating finish is a black and grey hammertone.
Powder coating option available for an additional 15%. The silicone baffle seal material is available in orange, dark blue, and black.
FOR DIAGRAMS AND ELIGIBILITY INFORMATION PLEASE VISIT OUR WEBSITE AT: www.aircraftspruce.com

CESSNA ENGINE BAFFLES

180-182 Baffles Cont.

AF0750135-1	05-01563	$55.75
AF0851700-96	05-01574	$25.50
AF0750135-3	05-01585	$27.00
180-182 Baffle Set	05-03278	$1,514.00

180 SERIES OIL COOLER BAFFLES

Baffle Number	Part No.	Price
AF075052-1	05-01541	$182.75
AF0755050-10	05-01542	$182.75
AF0755050-11	05-01543	$181.75
AF0750148-1	05-01544	$43.50
AF0755002-3	05-01546	$42.50
AF0755002-31	05-01547	$42.50
AF0750152-3	05-01590	$22.95
AF0750152-2	05-01592	$20.50

182 LATE MODEL BAFFLES

Baffle Number	Part No.	Price
AF0755001-39	05-03155	$305.00
AF0755004-6	05-03156	$171.75
AF07550404-4	05-03157	$221.95
AF0755040-2	05-03158	$239.95
AF0755004-9	05-03159	$31.00
AF0755004-2	05-03160	$87.00
AF0755004-3	05-03161	$96.00
AF0755040-3	05-03162	$221.95
AF0755007-1	05-03163	$52.85
AF0755040-1	05-03164	$202.95
AF1250961-5	05-03165	$31.00
AF1250961-6	05-03166	$31.00
AF1250961-7	05-03167	$31.00
AF0755005-9	05-03168	$182.75
AF0750135-4	05-01561	$27.00
AF0750135-1	05-01563	$55.75
AF0750135-3	05-01585	$27.00
182 Late Model Baffle Set	05-03277	$1,969.00

182 LATE MODEL OIL COOLER BAFFLES

Baffle Number	Part No.	Price
AF0755011-1	05-03169	$48.00
AF0755001-30	05-03170	$116.75
AF0755012-2	05-03171	$8.00
AF0750152-1	05-03172	$20.00
AF0755010-1	05-03173	$48.00
AF0755001-24	05-03174	$175.75
AF0755009-1	05-03175	$8.00
AF0750152-2	05-01592	$20.50

185 BAFFLES

Baffle Number	Part No.	Price
AF0750128-66	05-01427	$276.95
AF0750128-97	05-01529	$276.95
AF0750128-19	05-01530	$113.75

185 Baffles Cont.

AF0750128-21	05-01531	$82.75
AF0750128-23	05-01532	$113.75
AF0851700-96	05-01574	$25.50
AF0750117-31	05-01582	$41.00
AF07501282-2	05-01592	$20.50
AF0750135-4	05-01561	$27.00
AF0750135-3	05-03177	$27.00
AF0750117-30	05-01552	$39.00
AF1250134-2	05-03179	$53.75
AF0755050-15	05-03180	$172.95
AF0755002-2	05-03181	$41.00
AF050128-76	05-03182	$147.75
185 Baffle Set	05-03276	$1,445.00

C-200 EARLY MODEL OIL COOLER BAFFLES

Baffle Number	Part No.	Price
AF0750152-3	05-01554	$22.95
AF0750152-2	05-01556	$20.50

206 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0750135-4	05-01561	$27.00
AF0750135-1	05-01563	$55.75
AF0750117-31	05-01582	$41.00
AF1250105-1	05-03183	$42.50
AF1250100-18	05-03418	$282.95
AF1250100-8	05-03185	$147.75
AF0851700-96	05-01538	$25.50
AF1250135-3	05-03187	$44.00
AF1250137-1	05-03188	$244.95
AF1250927-1	05-03190	$258.95

206 EARLY MODEL Baffles Cont.

AF1250100-15	05-03191	$147.75
AF1250100-41	05-03192	$271.95
AF1250100-12	05-03193	$47.00
AF1250105-2	05-03194	$42.50
206 Early Model Baffle Set	05-03280	$1,889.00

206 LATE MODEL BAFFLES

Baffle Number	Part No.	Price
AF1255008-22	05-01560	$287.95
AF0750135-4	05-01561	$27.00
AF750135-1	05-01563	$55.75
AF1255032-4	05-01572	$336.00
AF0851700-96	05-01574	$25.50
AF1255032-2	05-01575	$307.00
AF1255025-1	05-01576	$42.50
AF1255010-10	05-01577	$75.00
AF1255028-1	05-01578	$205.95
AF1255011-5	05-01579	$30.00
AF1255008-12	05-01580	$104.00
AF1255008-20	05-01581	$497.00
AF0750117-31	05-01582	$41.00
AF1255032-3	05-01584	$347.00
AF0750135-3	05-01585	$27.00
AF1255032-1	05-01587	$231.95
AF1255009-8	05-01588	$101.75
AF1250966-1	05-01589	$73.75
AF0750152-3	05-01590	$22.95
AF1255011-51	05-03232	$40.00
AF1255020-1	05-03233	$33.50
AF1250134-2	05-03234	$53.75
AF1255026-1	05-03235	$20.00
AF1250966-3	05-03236	$17.50
AF1250961-5	05-03237	$31.00
206 Late Model Baffle Set	05-03285	$3,092.00

207 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0750135-3	05-01540	$27.00
AF0750135-4	05-01561	$27.00
AF0750135-1	05-01563	$55.75
AF0851700-96	05-01574	$25.50
AF0750117-31	05-01582	$41.00
AF1250105-2	05-03195	$42.50
AF1250100-12	05-03196	$47.00
AF1250100-41	05-03197	$271.95
AF1250100-15	05-03198	$147.75
AF1250927-1	05-03199	$258.95
AF1250137-1	05-03201	$244.95
AF1250135-3	05-03202	$44.00
AF1250100-8	05-03203	$147.75
AF1250100-18	05-03418	$282.95
AF1250105-1	05-03205	$42.50
207 Early Model Baffle Set	05-03281	$1,799.00

210 EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0750135-4	05-01561	$27.00
AF0750135-1	05-01563	$55.75
AF0851700-96	05-01574	$25.50
AF0750117-31	05-01582	$41.00
AF0750135-3	05-01585	$27.00
AF1250105-1	05-03068	$42.50
AF1250719-1	05-03069	$53.75
AF1250100-23	05-03070	$384.00
AF1250100-8	05-03071	$139.95
AF1250135-3	05-03072	$44.00
AF1250100-15	05-03073	$147.75
AF1250100-41	05-03075	$271.95
AF1250100-12	05-03076	$47.00
AF1250105-2	05-03077	$42.50
210 Early Model Baffle Set	05-03269	$1,972.00

206, 207, 210 TURBO EARLY MODEL BAFFLES

Baffle Number	Part No.	Price
AF0851700-96	05-01538	$25.50
AF0750152-3	05-01590	$22.95
AF1250105-1	05-03206	$42.50
AF1250135-3	05-03209	$44.00
AF1250829-11	05-03210	$72.00
AF1250105-2	05-03211	$42.50

All baffles are bare 6061-T6 aluminum unless the powder coating option is chosen. The powder coating finish is a black and grey hammertone. Powder coating option available for an additional 15%. The silicone baffle seal material is available in orange, dark blue, and black.
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INTERCYLINDER BAFFLES FOR TELEDYNE SIX CYLINDER ENGINES

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP135-103	750135-3	180,A,B,C,D,E	32151 thru 18051183	2
		180F,G,H,J,K,L	18051184 thru 18053203	3
		182E	33000 thru 18254423	2
		182F,G,H,J,K,L,M,N,P*	18254424 thru 18262465	1
		182P*,Q,R	18262466 thru 18268615	2
		188,A,B	188-0001 thru 18802348	2
		A188,A,B	188-0001 thru 18803968T	2
		T188C	T18803297T thru T18803968T	2
		205,A	205-0001 thru 205-0577	1
		206	206-0001 thru 206-0275	2
		U206A,B,C,D,E,F,G	U206-0276 thru U20607020	2
		P206,A,B,C,D,E	P206-0001 thru P20600647	2
		207,A	20700001 thru 20700788	2
		2IO,A,B,C,D,E,F,G,H,J,K,L,M,N,R	57001 thru 21065009	2
		3IO,B,C,D,E,F,G,H,I,J,K,L,N	35000 thru 310N0198	2
		320,A,B,C	320-0001 thru 320C0073	2
		P/N 05-02135		$64.95

AP

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP135-104	0750135-4, 0750135-8	180*	32151 thru 32661	2
		180A,B,C,D,E	32662 thru 18051183	1
		18OF,G,H,I,K	18051184 thru 18053203	2
		182	33060 thru 33482	2
		182A,B,C,D,E,F,G,H,J,K,L,M,N,P*	33483 thru 18262465	1
		182P*,Q,R	18262466 thru 18268615	2
		188,A,B	188-0001 thru 18802348	2
		A188,A,B	188-0001 thru 18803968T	2
		T188C	T18803297T thru T18803968T	2
		205,A	205-0001 thm 205-0577	2
		206	206-0001 thru 206-0275	2
		U206,A,B,C,D,E,F,G	U206-0276 thru U20607020	2
		P206,A,B,C,D,E	P206-0001 thru P20600647	2
		207,A	20700001 thru 20700788	2
		210,A,B,C,D,E,F,G,H,J,K,L,M,N,R	57001 thru 21065009	2
		310,B,C,D,E,F,G,H,I,J,K,L,N	35000 thru 310N0198	2
		P/N 05-02136		$58.75

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP834-101	0851834-1	310P,Q,R/T310,P,Q,R	310P0001 thru 310R2140	6
		320D,E,F	320D0001 thru 320F0045	6
		335	335-0001 thru 335-0065	6
		340,A	340-0001 thru 340A1817	6
		401,A,B	401-0001 thru 401B0300	6
		402,A,B,C	402-0001 and On	6
		414,A	414-0001 and On	6
		P/N 05-02137		$44.25

Ref. No.	Replaces Cessna P/N	Model	Serial Number	Qty Per A/C
ASP834-102	0851834-2	310P,Q,R/T310,P,Q,R	310P0001 thru 310R2140	2
		320D,E,F	320D0001 thru 320F0045	2
		335	335-0001 thru 335-0065	2
		340,A	340-0001 thru 340A1817	2
		401,A,B	401-0001 thru 401B0300	2
		402,A,B,C	402-0001 and On	2
		414,A	414-0001 and On	2
		P/N 05-02138		$76.75

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 150/152

What Makes These Composite Parts Such An Excellent Value?
* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
* Exact replacements of original equipment means easy installation.
* Money back guarantee if not completely satisfied!

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	150/152 Strut Cuff Upper RH (SA-0522150-4)	05-03703	$69.95
	150/152 Strut Cuff Upper LH (SA-0522150-3)	05-03702	$69.95
	150/152 Strut Cuff Lower RH (SA-0421002-2)	05-03701	$69.95
----	150/152 Strut Cuff Lower LH (SA-0421002-1)	05-03699	$69.85
	150/152 Aerobat Strut Cuff Upper RH (SA-0421002-3)	05-03706	$82.75
	150/152 Aerobat Strut Cuff Upper LH (SA-0421002-4)	05-03707	$82.75
	150/152 Aerobat Strut Cuff Lower RH (SA-0522150-6)	05-03704	$82.75
	150/152 Aerobat Strut Cuff Lower LH (SA-0522150-7)	05-03705	$82.75

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from your local automotive parts store.

Photo	Description	Part No.	Price
	150 Horizontal Stabilizer Tip 1959-'63 (SA-0430004-6)	05-03710	$98.50
	150/152 Horizontal Stabilizer Tip 1964&on (SA-0430004-11)	05-03711	$69.95
	150/152 Elevator Tips (left/right) 1964&on (SA-0430004-10)	05-03709	$98.50
----	150/152 Elevator Tips (left/right) 1959-'63 (SA-0430004-5)	05-03708	$98.75

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo

Photo	Description	Part No.	Price
	150/152 Upper Gear Leg 1971&on RH (SA-0441217-14)	05-03731	$105.95
	150/152 Upper Gear Leg 1971&on LH (SA-0441217-15)	05-03732	$105.95
----	150/152 Right Brake Fairing 1974&on (SA-0441227-2)	05-03734	$125.95
----	150/152 Left Brake Fairing 1974&on (SA-0441227-1)	05-03733	$125.95

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
	150 Vertical Fin Cap 1964-1965 (SA-0430004-9)	05-03713	$105.00
	150 Vertical Fin Cap (no beacon) 1966-'74 (SA-0431013-3)	05-03715	$105.00
----	150 Vertical Fin Cap (small beacon) 1966-'74 (SA-0431017-1)	05-03714	$105.95
	150/152 Vertical Fin Cap (small beacon) 1975&on (SA-0430011-1)	05-03716	$105.95
----	150 Rudder Top 1959-1963 (SA-0430004-2)	05-03717	$98.75
----	150 Rudder Top 1964-1965 (SA-0430004-8)	05-03718	$98.50
	150/152 Rudder Top 1966-1974 (SA-0431013-1)	05-03719	$98.50
	150 Rudder Top 1975&on (SA-0430011-2)	05-03720	$98.50
----	150 Rudder Bottom 1959-1965 (SA-0430004-1)	05-03721	$99.75
	150 Rudder Bottom 1966&on (SA-0431005-1)	05-03722	$98.50

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing-tip met metal. Here's the solution: replacement fiberglass wing-tips from Stene Aviation.

Photo	Description	Part No.	Price
	150/152 Wing-Tip (small droop) LH (SA-0523565-29)	05-03726	$275.00
	150/152 Wing-Tip (small droop) RH (SA-0523565-30)	05-03727	$275.00
----	150/152 Std. Small Wing Tip (SA-0430008-3)	05-03725	$265.95
	150 Dorsal Fin 1959-'65 (SA-0430004-4)	05-03723	$265.95
----	150/152 Dorsal Tip 1966&on (SA-0431024-1)	05-03724	$32.50

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	150/152 Wheel Pant 1971-'74 RH (SA-0541223-16)	05-03728	$395.00
	150/152 Wheel Pant 1971-'74 LH (SA-0541223-17)	05-03729	$395.00
	150/152 Nose Wheel Pant 1974&on (SA-0543079-3)	05-03730	$395.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE LISTING

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 170/172/175

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original high impact plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Photo	Description	Part No.	Price
	172 Horizontal Tip 1963 & on (SA-0532001-93)	05-03744	$82.50
	172/175 Horizontal Tip Straight Tail (SA-0532001-61)	05-03743	$82.75
	172 Elevator Tip 1963&on LH (SA-0532001-94)	05-03742	$114.95
	172 Elevator Tip 1963&on RH (SA-0532001-100)	05-03741	$114.95
	172/175 Elevator Tip Straight Tail (SA-0532001-62)	05-03740	$115.95

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	172 Strut Cuff Upper 1973&on RH (SA-0523047-2)	05-03739	$79.85
	172 Strut Cuff Upper 1973&on LH (SA-0523047-1)	05-03738	$79.95
	172 Strut Cuff Lower (all models) RH (SA-0522150-2)	05-03736	$74.85
	172 Strut Cuff Lower (all models) LH (SA-0522150-1)	05-03735	$74.85

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo	Description	Part No.	Price
	172 Upper Gear Leg 1971&on RH (SA-1741005-240)	05-03767	$119.95
	172 Upper Gear Leg 1971&on LH (SA-1741005-239)	05-03766	$119.95
	172 Brake Fairing 1974& on LH (SA-0541224-1)	05-03768	$124.95
	172 Brake Fairing 1974&on RH (SA-0541224-2)	05-03769	$124.95

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	172 Wheel Pant 1974&on RH (SA-0541223-16)	05-03728	$395.00
	172 Wheel Pant 1974&on LH (SA-0541223-17)	05-03729	$395.00
	172 Nose Wheel Pant 1974 & on (SA-0543079-3)	05-03730	$395.00

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
----	172 Vertical Fin (no beacon) 1956-'59 (SA-0531001-36)	05-03745	$119.95
----	172 Vertical Fin (large beacon) 1956-'59 (SA-0531004-3)	05-03746	$119.95
	172 Vertical Fin (no beacon) 1960-'68 (SA-0531006-33)	05-03747	$120.00
----	172 Rudder Top 1969-75 (SA-0533009-1)	05-03752	$119.95
	172 Vertical Fin (small beacon) 1960-'68 (SA-0531009-1)	05-03748	$119.95
----	172 Vertical Fin (small beacon) 1969-'75 (SA-0531013-1)	05-03749	$119.95
----	172 Rudder Top 1976-'85 (SA-0531006-112)	05-03753	$119.95
----	172 Rudder Top 1997&on (SA-0533155-2)	05-03754	$98.50
	172 Vertical Fin (small beacon) 1976&on (SA-0531003-1)	05-03750	$119.95
	172 Rudder Top 1960-'68 (SA-0531006-34)	05-03751	$119.95
	172 Rudder Bottom 1960-'68 (SA-0531006-35)	05-03756	$107.95
----	172/175 Rudder Bottom Straight Tail (SA-0531104)	05-03755	$107.95
----	172 Rudder Bottom 1969-'80 (SA-0531006-80)	05-03757	$107.95

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

Photo	Description	Part No.	Price
	172 Wing Tip (small droop) 1968-'72 LH (SA-0523565-29)	05-03726	$275.00
	172 Wing Tip (small droop) 1968-'72 RH (SA-0523565-30)	05-03727	$275.00
	172 Wing Tip (small droop) 1973&on LH (SA-0723200-5)	05-03762	$275.00
	172 Wing Tip (small droop) 1973&on RH (SA-0723200-6)	05-03764	$275.00
	172 Mid-Dorsal (SA-0531012-2)	05-03759	$74.85
	172 Dorsal Tip 1972&on (SA-0531020-1)	05-03760	$35.00
	Cable Covers (SA-0530011-2)	05-03770	$35.00

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 177/180/185/188

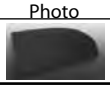
CESSNA FIBERGLASS REPLACEMENT PARTS FOR 177

What Makes These Composite Parts Such An Excellent Value?

* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
* Exact replacements of original equipment means easy installation.
* Money back guarantee if not completely satisfied!

STABILATOR TIPS

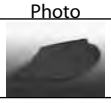
Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Photo	Description	Part No.	Price
	172 Horizontal Tip 1963 & on (SA-0532001-93)	05-03744	$82.50

RUDDER & VERTICAL TOPS

Photo	Description	Part No.	Price
----	177 Rudder Top (All) (SA-1733009-2)	05-03841	$119.95
----	177 Vertical Top (All) (SA-1731009-4)	05-03840	$120.95

GEAR LEG FAIRINGS

Photo	Description	Part No.	Price
	177 Upper Gear Leg (All) RH (SA-1741005-44)	05-03846	$120.00
	177 Upper Gear Leg (All) LH (SA-1741005-43)	05-03845	$120.00
	177 Brake Fairings 1972-'74 RH (SA-0741634-14)	05-03848	$124.95
	177 Brake Fairings 1972-'74 LH (SA-0741634-13)	05-03847	$124.95
	177 Brake Fairings 1975&on RH (SA-0741641-10)	05-03849	$125.75
	177 Brake Fairings 1975&on LH (SA-0741641-11)	05-03850	$125.00

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	177 Wheel Pant 1975&on RH (SA-0541223-16)	05-03728	$395.00
	177 Wheel Pant 1975&on LH (SA-0541223-17)	05-03729	$395.00
	177 Nose Wheel Pant 1975&on (SA-0543079-3)	05-03730	$395.00

CESSNA FIBERGLASS REPLACEMENT PARTS FOR 180/185

ELEVATORS & STABILIZERS

Here are some of our most popular items. These tips take a good deal of stress in just normal flying circumstances. They're also frequent victims of ramp rash. The original plastic simply can't stand up to the task as well as fiberglass replacements from Stene Aviation. Plus, if these parts ever do withstand damage, they're easily repaired with readily available fiberglass repair kits from you local automotive parts store.

Photo	Description	Part No.	Price
	180&185(all) Horizontal Tip (SA-0732613-1)	05-03779	$85.00

180/185 CONT.

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	180 Strut Cuff Upper RH (SA-0723605-4)	05-03774	$82.50
	180 Strut Cuff Upper LH (SA-0723605-3)	05-03773	$82.50
----	180 Strut Cuff Lower RH (SA-0723605-2)	05-03772	$82.50
----	180 Strut Cuff Lower LH (SA-0723605-1)	05-03771	$82.50

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
----	180 (all) Vertical Fin (no beacon) (SA-0731000-200)	05-03781	$119.95
----	180 (all) Vertical Fin (small beacon)(SA-0731019-1)	05-03782	$119.95
----	180(large tail)/185(all) Vertical Fin (sm. beacon) (SA-0731019-2)	05-03787	$120.00
----	185 Vertical Fin (no beacon) (SA-0742025-1)	05-03788	$119.95
----	180(all) Vertical Fin (large beacon) (SA-0700031-2)	05-03789	$120.00
	185(all) Vertical Fin (large beacon) (SA-0731015-1)	05-03790	$119.95

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo	Description	Part No.	Price
	180/185 & oversize Brake Fairing RH(SA-0741059-2)	05-03804	$125.00
	180/185 & oversize Brake Fairing LH(SA-0741059-1)	05-03805	$125.00

WING & DORSAL TIPS

Wing tips are a common victim of hanger and ramp rash. Maybe you thought the plane was going to clear those doors as you wheeled it back into the hanger...the first indication that you were wrong was that grating sound as the wing tip met metal. Here's the solution: replacement fiberglass wing tips from Stene Aviation.

Photo	Description	Part No.	Price
----	180 Wing Tip (staight tip)- 1955-'67 (SA-0723615-200)	05-03797	$265.00
	180/185 Wing Tip (small droop) 1969-'72 LH(SA-0523565-29)	05-03726	$275.00
	180/185 Wing Tip (small droop) 1969-'72 RH(SA-0523565-30)	05-03727	$275.00
----	180/185 Large Wing Tip 1962-'69 LH(SA-1223000-7)	05-03795	$375.00
----	180/185 Large Wing Tip 1962-'69 RH(SA-1223000-8)	05-03796	$375.00
	180/185 Wing Tip (small droop) 1973&on LH(SA-0723200-5)	05-03762	$275.00
	180/185 Wing Tip (small droop) 1973&on RH(SA-0723200-6)	05-03761	$265.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE LISTING

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 182

What Makes These Composite Parts Such An Excellent Value?
* Stronger than factory originals with no weight increase.
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ELEVATORS & STABILIZERS

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Photo	Description	Part No.	Price
	182 Elevator Tip 1965&on LH (SA-1234608-3)	05-03777	$102.95
	182 Elevator Tip 1965&on RH (SA-1234608-4)	05-03778	$102.95
	182 Horizontal Tip 1956-'59 (SA-0732613-1)	05-03779	$85.00
	182 Horizontal Tip 1965&on (SA-1232604-1)	05-03780	$85.75

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Photo	Description	Part No.	Price
	182 Strut Cuff Upper RH (SA-0723605-4)	05-03774	$82.50
	182 Strut Cuff Upper LH (SA-0723605-3)	05-03773	$82.50
	182 Strut Cuff Lower 1962&on RH (SA-0723612-4)	05-03776	$82.50
	182 Strut Cuff Lower 1962&on LH (SA-0723612-3)	05-03775	$82.50

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Photo	Description	Part No.	Price
	182 Vertical Fin (small beacon) 1960-'66 and 1976&on (SA-1231064-1)	05-03784	$119.95
	182 Vertical Fin (small beacon) 1967-'75 (SA-0731606-3)	05-03785	$119.95
----	182 Rudder Top 1960-'66 and 1976&on (SA-0731606-9)	05-03793	$119.95
	182 Rudder Top 1967-'75 (SA-0731606-6)	05-03792	$119.95

TAILCONE

Replace your wore and cracked tailcone with a stronger than factory original fiberglass tailcone from Stene Aviation.

Photo	Description	Part No.	Price
	182 TailCone 1962&on (SA-1212010-15)	05-03794	$275.95

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Photo	Description	Part No.	Price
	182 Upper Gear Leg 1972-`75 RH (SA-1741005-200)	05-03799	$120.00
	182 Upper Gear Leg 1972-`75 LH (SA-1741005-201)	05-03801	$120.00
----	182 Upper Gear Leg 1976&on RH (SA-1741052-200)	05-03802	$119.95
	182 Upper Gear Leg 1976&on LH (SA-1741052-201)	05-03803	$120.00
	182 Brake Fairing 1972-`74 RH (SA-0741634-18)	05-03806	$125.95
	182 Brake Fairing 1972-`74 LH (SA-0741634-19)	05-03807	$125.95
----	182 Brake Fairing 1975-`78 RH (SA-0741634-10)	05-03808	$125.95
	182 Brake Fairing 1975-`78 LH (SA-0741634-11)	05-03809	$126.95

WING & DORSAL TIPS

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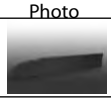
Photo	Description	Part No.	Price
	182 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29)	05-03726	$275.00
	182 Wing Tip (small droop) 1969-'72 RH (SA-0523565-30)	05-03727	$275.00
	182 Wing Tip (small droop) 1973&on LH (SA-0723200-5)	05-03762	$275.00
	182 Wing Tip (small droop) 1973&on RH (SA-0723200-6)	05-03764	$275.00
----	182 Wing Tip (straight tip)-1955-'67 (SA-0723615-200)	05-03797	$265.00

WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Photo	Description	Part No.	Price
	182 Wheel Pant 1975&on RH (SA-0541223-16)	05-03728	$395.00
	182 Wheel Pant 1975&on LH (SA-0541223-17)	05-03729	$395.00
	182 Nose Wheel Pant 1975&on (SA-0543079-3)	05-03730	$395.00

AP

CESSNA FIBERGLASS REPLACEMENT PARTS

CESSNA 205/206/207/210

What Makes These Composite Parts Such An Excellent Value?

* Stronger than factory originals with no weight increase.
* Easily repaired with locally available fiberglass kits if ever damaged.
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ELEVATORS & STABILIZERS

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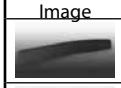
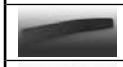
Image	Description	Part No.	Price
	206/207 Elevator Tips 1965-`67 LH (SA-1234608-3)	05-03777	$102.95
	206/207 Elevator Tips 1965-`67 RH (SA-1234608-4)	05-03778	$102.95
	206/207 Horizontal Tip 1967 & on (SA-1232012-1)	05-03833	$65.00
	206/207 Horizontal Tip 1965-1967 (SA-1232604-1)	05-03780	$85.75
	210 (1967 & on) Elevator Tips LH(SA-1234640-1 left hand)	05-03831	$147.50
	210 (1967 & on) Elevator Tips RH (SA-1234640-2 right hand)	05-03832	$147.50
	210 (1967 & on) Horizontal Tip (SA-1232012-1)	05-03833	$65.00

STRUT CUFFS

Here's an unbeatable item for renovating your Cessna; a set of replacement strut cuffs. Order just one cuff to replace a damaged original, or get a set of four for a complete replacement.

Image	Description	Part No.	Price
----	210 Strut Cuff Upper Right 1960-'63(SA-1227002-4)	05-03817	$105.00
----	210 Strut Cuff Upper Left 1960-'63(SA-1227002-5)	05-03818	$105.00
----	206/207 Strut Cuff Upper Right 1964-'71(SA-1227002-10)	05-03821	$105.00
----	206/207 Strut Cuff Upper Left 1964-'71(SA-1227002-11)	05-03822	$105.00
----	206/207 Strut Cuff Upper Right 1972&on(SA-1227005-6)	05-03826	$165.00
----	206/207 Strut Cuff Upper Left 1972&on(SA-1227005-5)	05-03825	$165.00
----	210 Strut Cuff Lower Right 1960&'61(SA-1227002-2)	05-03815	$105.00
----	210 Strut Cuff Lower Right 1962&'63(SA-1227402-6)	05-03820	$105.00
----	210 Strut Cuff Lower Left 1962&'63(SA-1227402-5)	05-03819	$105.00
----	205 Strut Cuff Lower Right 1963&'64(SA-1227401-4)	05-03829	$105.00
----	205 Strut Cuff Lower Left 1963&'64(SA-1227401-5)	05-03830	$105.95
	206 Strut Cuff Lower Right 1964-'71(SA-1227402-4)	05-03824	$105.00
----	206 Strut Cuff Lower Left 1964-'71(SA-1227402-3)	05-03823	$105.00
	206/207 Strut Cuff Lower Right 1972&on(SA-1227010-2)	05-03828	$165.00
	206/207 Strut Cuff Lower Left 1972&on(SA-1227010-1)	05-03827	$165.00
	210 Strut Cuff Upper 1960-'63 RH(SA-1227002-4)	05-03817	$105.00
	210 Strut Cuff Upper 1960-'63 LH(SA-1227002-5)	05-03818	$105.00
----	210 Strut Cuff Lower 1960&'61 RH(SA-1227002-2)	05-03815	$105.00

RUDDER & VERTICAL FIN CAPS

These parts are a snap to replace on most planes. Please note, indicate if you have a straight tail or a swept tail. It is also important to let us know if your fin cap needs to accommodate a strobe or beacon, and if so, if the light is front-mounted or center-mounted.

Image	Description	Part No.	Price
	205/206/207 Vertical Fin (small beacon) 1964-'67 and 1976&on (SA-1231064-3)	05-03786	$119.95
	206/207 Vertical Fin (small beacon) 1967-'75 (SA-0731606-3)	05-03785	$119.95
	206/207 Rudder Top 1967-'75 (SA-0731606-6)	05-03792	$119.95
	205/206/207 Rudder Top 1964-'66 and 1976&on (SA-0731606-9)	05-03793	$119.95

GEAR LEG AND BRAKE FAIRINGS

These are excellent items for replacing worn plastic originals. Your fiberglass replacements will be more durable with an improved finish over the original plastics.

Image	Description	Part No.	Price
----	207 Right Upper Gear Leg 1969&on(SA-1241217-2)	05-03813	$125.00
	207 Left Upper Gear Leg 1969&on(SA-1241217-1)	05-03812	$125.00
	206 Right Brake Fairing (Heavy Duty)(SA-1241232-2)	05-03837	$145.95
	206 Left Brake Fairing (Heavy Duty) (SA-1241232-1)	05-03836	$145.95

WING TIPS

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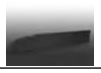
Image	Description	Part No.	Price
	206 Wing Tip (small droop) 1969-'72 LH (SA-0523565-29)	05-03726	$275.00
	207 Wing Tip (small droop) 1969&on LH (SA-0523565-29)	05-03726	$275.00
	206 Wing Tip (small droop) 1973&on LH (SA-0723200-5)	05-03762	$275.00
	206 Wing Tip (small droop) 1973&on RH(SA-0723200-6)	05-03764	$275.00
----	210 Wing Tip 1971&on LH(SA-1221111-203)	05-03835	$545.00
----	210 Wing Tip 1971&on RH(SA-1221111-202)	05-03834	$545.00

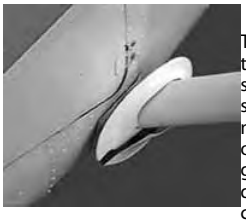
WHEEL PANTS

Replace your original plastic wheel pants with high quality and durable fiberglass replacements. All wheel pants come with a 2" access plug for checking tire pressure. Original hardware is required for mounting.

Image	Description	Part No.	Price
	206 Wheel Pant 1975&on RH (SA-0541223-16)	05-03728	$395.00
	206 Wheel Pant 1975&on LH (SA-0541223-17)	05-03729	$395.00
	206 Nose Wheel Pant 1975&on (SA-0543079-3)	05-03730	$395.00

AP

CESSNA LIFT STRUT FAIRINGS



CESSNA LIFT STRUT FAIRINGS

These fairings consist of four wing strut fairings that slip over the lift struts. These fairings are better than those manufactured by Cessna because they are made of fiberglass rather than a royalite type material, that bends and cracks after a short time on the aircraft. Fiberglass has the following advantages over a royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps its chemical composition intact much longer. With all these advantages these will probably be the last lift strut fairings that will ever have to be installed on the aircraft. And even should these fairings be damaged through some unforeseen circumstances, being made of fiberglass, they will be easily repairable. These fairings are all split so they slip over the lift strut thus eliminating the need to disconnect the lift strut to install the fairing. Cessna manufactured split lift strut fairings for only one model aircraft, and they cost $1,054.00 per ship set. If Cessna manufactured fiberglass split lift strut fairings they would charge at least $1,700.00 per ship set. With the average cost of Aircraft development lift strut fairings, it is the same as getting a 75% discount off equivalent Cessna lift strut fairings. Aircraft Development recommends, as with all plastics, they be painted for better UV protection. These kits have a FAA identicality approval and are manufactured under a FAA PMA authority.Top Number is Aircraft Spruce Part Number. Second number is the Cessna part number.

CESSNA MODELS	RH WING	LH WING	RH FUSELAGE	LH FUSELAGE	KIT
150 and 152	05-01557 0522150-4 $139.00	05-01558 0522150-3 $139.00	05-01564 0421002-2-791 $139.00	05-01565 0421002-1-791 $139.00	---
170A & B	05-01557 0522150-4 $139.00	05-01558 0522150-3 $139.00	05-01559 0522150-2 $139.00	05-01562 0522150-1 $139.00	05-01599 $556.00
172 to 172L	05-01557 0522150-4 $139.00	05-01558 0522150-3 $139.00	05-01559 0522150-2 $139.00	05-01562 0522150-1 $139.00	05-01599 $556.00
172M to 172S & SP P172D, 172RG, R172K (172XP)	05-01583 0523047-2 $139.00	05-01586 0523047-1 $139.00	05-01559 0522150-2 $139.00	05-01562 0522150-1 $139.00	05-01601 $556.00
175	05-01557 0522150-4 $139.00	05-01558 0522150-3 $139.00	05-01559 0522150-2 $139.00	05-01562 0522150-1 $139.00	05-01599 $556.00
180	05-01566 0723605-4-791 $139.00	05-01567 0723605-3-791 $139.00	05-01568 0723605-2-791 $139.00	05-02489 0723605-1-791 $139.00	---
182 to 182D	05-01566 0723605-4-791 $139.00	05-01567 0723605-3-791 $139.00	05-01568 0723605-2-791 $139.00	05-02489 0723605-1-791 $139.00	---
182E to 182S R182, T182, TR182	05-01566 0723605-4-791 $139.00	05-01567 0723605-3-791 $139.00	---	05-01570 0723612-3-791 $139.00	---
205 , 205A	05-01571 1227002-10-791 $139.00	05-01573 1227002-11-791 $139.00	Not Available	Not Available	Not Available
206, P206, TP206, U206, TU206, all to E	05-01571 1227002-10-791 $139.00	05-01573 1227002-11-791 $139.00	05-01594 1227402-4-791 $139.00	---	---
U206F, TU206F, SN 206-02200 to 1986	Not Available	Not Available	05-01596 1227010-2 $199.50	05-01597 1227010-1 $199.50	Not Available
U206, TU206, from SN U206-2576 to 1986	---	---	05-01596 1227010-2 $199.50	05-01597 1227010-1 $199.50	05-01605 $830.90
207, 207A, T207, T207A, From S/N 207-00255 to 1984	---	---	05-01596 1227010-2 $199.50	05-01597 1227010-1 $199.50	05-01605 $830.90
207, 207A, T207, T207A From S/N 207-00001 to 1984	Not Available	Not Available	05-01596 1227010-2 $199.50	05-01597 1227010-1 $199.50	Not Available
210F to K T210F to K	05-01571 1227002-10-791 $139.00	05-01573 1227002-11-791 $139.00	05-01594 1227402-4-791 $139.00	---	---

LIFT STRUT HARDWARE KIT

This kit 118H has the additional hardware and instructions necessary for a first time installation for any of the lift strut fairings listed above. For those individuals that are not replacing their lift strut fairings, but wish to install the lift strut fairings as an initial installation

P/N 05-04582 ..... $38.75

CESSNA LANDING GEAR STRUT FAIRINGS

Consist of two landing gear strut fairings that slip over the landing gear struts. These fairings are better than those manufactured by Cessna because they are made of fiberglass rather than a royalite type material, that bends and cracks after a short time on the aircraft. These fairings are all split so they slip over the landing gear strut. It is recommended, as with all plastics, they be painted for better UV protection. These kits are manufactured under a FAA PMA authority. Parts are listed with the Cessna number first, then Aircraft Spruce's part number and price.

Cessna Model	LH Fuselage	RH Fuselage
150L, 150M, A150L, A150M, 152, A152	0441217-215 PN 05-03495 $140.00	0441217-214 PN 05-03501 $139.95
172L thru 172R, R172K (172XP), 172SP	1741005-239 PN 05-03496 $139.00	1741005-240 PN 05-03502 $130.00
182P S/N 18260826 to 18263475 AND 182P S/N18263476 to 18264295	1741005-201 PN 05-03497 $138.75	244-4-2 PN 05-03503 $157.95
182P From S/N18264296, 182Q, 182R, 182S, T182R	0741052-201 PN 05-03499 $139.95	244-4-8 PN 05-03505 $157.95

CESSNA WING TIPS - EMPENNAGE TIPS

CESSNA WING TIPS

These wing tip kits consist of a left and right hand drooped fiberglass wing tip. Made of fiberglass rather than a royalite type material, and the superior epoxy rather than polyester fiberglass. Epoxy fiberglass has the following advantages over a royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps its chemical composition intact much longer. These kits have a FAA identicality approval and manufactured under a FAA PMA authority. The identically approval allows you to install these modern drooped wing tips, even if your aircraft was not originally manufactured with this newer style. Kits includes the left hand wing tip, right hand wing tip, hardware, and the plate lens

Cessna Models	Kit No.**	Price Per Kit
All 150, A150, 152, A152, 170A & B, P172, 175, 205 & L19. Also 172, 180, 185 for model year up through 1972. 182, 206 for model year up through 1971. 207 from 1970 and up. Kit 219-100 covers all of the above model aircraft and includes the plate lens.	05-01526 (219-100)	$795.00
172, R172K (172XP), 172RG, 180,185 for model year 1973 and up, 182,206 for model year 1972 and up. Kit 219-200 covers all the above model aircraft and includes the plate lens.	05-01545 (219-200)	$809.00

EMPENNAGE TIPS

These empennage tips are made of fiberglass rather than the royalite type material that cracks after a short time on the aircraft. Fiberglass has the following advantages over royalite type material, it is approximately six times stronger and 12 times stiffer, it resists ultra violet light and weathers better, and it keeps it's chemical composition intact much longer. It is recommended, as with all plastics, they are painted for better UV protection. These kits are manufactured under a FAA PMA authorityTop line is Aircraft Spruce part number, middle line is Cessna part number. Bottom line is price.

Cessna Models	Tip Horizontal Fin L/H	Tip Horizontal Fin R/H	Tip Elev. L/H	Tip Elev. R/H
150D, and up, A150, 152, A152	05-01513 0430004-11-791 $75.00	05-01513 0430004-11-791 $75.00	05-01514 0430004-10-791 $115.75	05-01514 0430004-10-791 $115.75
172D and up, P172, R172K (172XP) 172RG	05-01515 0532001-93-791 $103.75	05-01515 0532001-93-791 $103.75	05-01517 0532001-94-791 $116.95	05-01516 0532001-100-791 $116.95

Cessna Models	Tip Verticl Fin	Tip Upper Rudder	Tip Lower Rudder
150F and up,A150, 152, A152	---	---	05-01518 0431005-1-791 $106.95
150Fto 150L, A150K, A150L No Beacon	05-01519 0431013-3-791 $69.95	---	---
150M and up A150M and up, 152, A152	05-01520 0430011-1 $110.00	05-01521 0430011-2 $136.95	---
172K and up, 172RG, R172K(172XP)	---	---	05-01522 0531006-80-791 $125.00
172 1976 and up, 172RG, R172K(172XP)	---	05-01523 0531006-112 $128.00	---
172A to 172I No Beacon	05-01524 0531006-33-791 $65.00	05-03508 053100634-791 $117.95	----

CESSNA FLAP GAP-SPEED KIT

Cessna flap gap speed kit consists of a gap seal on the lower flap gap that is an extension of the lower wing skin from the rear spar to the leading edge of the flap. The seal eliminate a high drag area plus reduce the amount of air leaking from the high pressure underside of the wing to the low pressure top side of the wing. The reduction in air leakage allows the wing to fly at a lower angle of attack for the same amount of lift, thus reducing drag. Please note it is NOT recommended to install a flap gap kit on those aircraft with wet wings because of the difficulty of resealing the wings to a gas leak free condition. This flap gap-kit is FAA STC'd and manufactured under a FAA PMA authority. Also available is a hardware kit 114H containing enough hardware to install the flap gap kit.

Kit No.	Applicable to Cessna Models	Part No.	Price
114-200	150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, A150K, 150L, A150L, 150M, A150M	05-01622	$458.00
114-200	152, A152	05-01622	$458.00
114-100	170B	05-01620	$435.00
114-100	172, 172A, 172B, 172C, 172D, 172E, 172F, (USAF T-41A) 172G, 172H, (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q	05-01620	$435.00
114-100	175, 175A, 175B, 175C, P172D, R172E (USAF T-41B), (USAF T-41C &D), R172F (USAF T-41D), R172G (USAF T-41C or D), R172H (USAF T-41D), R172J, R172K Known as 172XP, 172RG	05-01620	$435.00
114-100	180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K	05-01620	$435.00
114-100	182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, R182, T182, T182R, TR182	05-01620	$435.00
114-100	185, 185A, 185B, 185C, 185D, 185E, A185E, A185F	05-01620	$435.00
114-100	210-5 (205), 210-5A (205A)	05-01620	$435.00
114-100	210, 210A, 210B, 210C	05-01620	$435.00

Hardware kit 114H - To install the Flap Gap-Speed Kits above ..... P/N 05-01621 ..... $59.85

CESSNA AILERON GAP-SPEED KIT

Cessna aileron gap kit consists of gap seals on the lower and upper aileron gaps that is an extension of the lower and upper wing skin from the rear spar to the leading edge of the aileron. The seals eliminate a high drag area plus reduce the amount of air leaking from the high pressure underside of the wing to the low pressure top side of the wing. The reduction in air leakage allows the wing to fly at a lower angle of attack for the same amount of lift, thus reducing drag. This aileron gap-speed kit is FAA STC'd and manufactured under a FAA PMA authority. Also available is a hardware kit containing enough rivets to install the aileron gap kit.

Cessna Models	Aileron Gap Kit No.	Price	Hardware Kit	Price
150, A150, 152, A152, 170B, 172, 175, 180, 182, 185, 205 210 through 210C	05-01623	$198.95	05-01624	$0.21

AIRCRAFT SPRUCE WEST
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Prices Subject to Change Without Notice

Piper Throttle Controls

Model	Serial Number	P/N	Our P/N	Price
PA20,PA20S,PA20-115	20-1 thru 20-933	455-139	05-01743	$321.00
PA20S-115,PA20-135	20-934 thru 20-1121	455-139	05-01743	$321.00
PA20S-135	20-934 thru 20-1121	455-139	05-01743	$321.00
PA22 (125hp)	22-1 thru 22-533	455-139	05-01743	$321.00
PA22-135	22-534 thru 22-2377	455-139	05-01743	$321.00
PA22-135	22-2379 thru 22-2424	455-139	05-01743	$321.00
PA22-135,PA22S-135	22-2378, 22-2425 thru 22-3217	12693-04	05-02209	$347.00
PA22-135,PA22S-135	22-3219 thru 22-3386	12693-04	05-02209	$347.00
PA22-150,PA22S-150	22-2378, 22-2425 thru 22-7642	12693-04	05-02209	$347.00
PA22-160,PA22S-160	22-5139, 22-5603 thru 22-7642	12693-04	05-02209	$347.00
PA22-108	22-8000 and On	12693-04	05-02209	$347.00
PA28-140	28-20002 thru 28-24999	12693-04	05-02209	$347.00
PA28-140	28-25000 thru 28-26956	455-353	-	-
PA28-140	28-7125001 thru 28-7725290	455-353	-	-
PA28-150	28-1 thru 28-4377	12693-04	05-02209	$347.00
PA28-151	28-7415001 thru 28-7715314	455-350	05-01745	$144.75
PA28-160	28-1 thru 28-4377	12693-04	05-02209	$347.00
PA28-161	28-7716002 thru 28-8616057	455-350	05-01745	$144.75
PA28-161	2816001 thru 2816110 (Less 2816066)	455-350	05-01745	$144.75
PA28-161 Cadet	2841001 and On	455-350	05-01745	$144.75
PA28-180	28-671 thru 28-4377	12693-04	05-02209	$347.00
PA28-180	28-4378 thru 28-5152	455-333	05-01746	$142.75
PA28-180	28-5153 thru 28-5869	455-350	05-01745	$144.75
PA28-180	28-7105001 thru 28-7505261	455-350	05-01745	$144.75
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	$198.75
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01747	$198.75
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01747	$198.75
PA28-181	28-7690001 thru 28-8290174	455-350	05-01745	$144.75
PA28-181	28-8390001 and On	455-350	05-01745	$144.75
PA28-201T	28-7921001 thru 28-7921095	455-322	05-01747	$198.75
PA28R-200	28R-30482,28R-35001 thru 28R-35830	455-322	05-01747	$198.75
PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01747	$198.75
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01747	$198.75
PA28R-201	2837001 thru 2837061	455-322	05-01747	$198.75
PA28R-201T	28R-7703002 thru 28R-7803372	455-322	05-01747	$198.75
PA28R-201T	2803001 thru 2803015	455-322	05-01747	$198.75
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01747	$198.75
PA28RT-201	28R-8118001 and On	455-322	05-01747	$198.75
PA28RT-201T	28R-7931001 thru 28R-8031188	455-322	05-01747	$198.75
PA28RT-201T	28R-8131001 and On	455-322	05-01747	$198.75
PA28-235	28-10003 thru 28-11039	12693-04	05-02209	$347.00
PA28-235	28-11040 thru 28-11393	455-333	05-01746	$142.75
PA28-235	28-7110001 thru 28-7210033	455-333	05-01746	$142.75
PA28-235	28-7310001 thru 28-7710089	455-333	05-01746	$142.75
PA28-236	28-7911001 thru 28-8211060	455-333	05-01746	$142.75
PA28-236	28-8311001 and On	455-333	05-01746	$142.75
PA32-260	32-1111 thru 32-1320	455-360	05-01748	$166.75
PA32-260	32-7100001 thru 32-7800008	455-360	05-01748	$166.75
PA32-300	32-40000 thru 32-40565	69530-02	-	-
PA32-300	32-40566 thru 32-41018	455-358	05-01749	$169.75
PA32-300	32-7140001 thru 32-7940282	455-358	05-01749	$169.75
PA32-301	32-8006001 thru 32-8406020	455-358	05-01749	$169.75
PA32-301	32-8506001 and On	455-358	05-01749	$169.75
PA32-301T	32-8024001 thru 32-8424002	455-344	05-01750	$127.75
PA32-301T	32-8524001 and On	455-344	05-01750	$127.75
PA32R-301T	32R-8029001 thru 32R-8229078	455-360	05-01748	$166.75
PA32R-301T	32R-8329001 and On	455-360	05-01748	$166.75
PA32RT-300T	32R-7887001 thru 32R-7987146	455-360	05-01748	$166.75

Piper Mixture Controls

Model	Serial No.	P/N	Our P/N	Price
PA-18,PA-18S,PA-18"105"	All	600-72	05-01254	$163.95
PA18S"105",PA-18A,PA-18"125"	All	600-72	05-01254	$163.95
PA-18S"125",PA-18AS"125"	All	600-72	05-01254	$163.95
PA-18"135", PA-18S"135"	All	600-72	05-01254	$163.95
PA-18A"135",PA-18AS"135"	All	600-72	05-01254	$163.95
L-21A, L-21B, PA-18"150"	All	600-72	05-01254	$163.95
PA-18A"150", PA-18S"150"	All	600-72	05-01254	$163.95
PA-18AS"150"	All	600-72	05-01254	$163.95
PA-19, PA-19S, L-18C	All	600-72	05-01254	$163.95
PA-20, PA-20S, PA-20-115	All	600-72	05-01254	$163.95
PA-20S-115,PA-20-135,PA-20S-135	All	600-72	05-01254	$163.95
PA-22,PA-22-108,PA-22-135	All	600-72	05-01254	$163.95
PA-22S-135,PA-22-150,PA-22S-150	All	600-72	05-01254	$163.95
PA-22-160, PA-22S-160	All	600-72	05-01254	$163.95
PA-24-180	All	600-72	05-01254	$163.95
PA-24-250	All	600-72	05-01254	$163.95
PA-24-260	All with Carbureted Engine	600-72	05-01254	$163.95
PA24-400	26-2 thru 26-148	22633-04	05-01757	$539.00
PA-28-140	28-20002 thru 28-24999	600-72	05-01254	$163.95
PA-28-150, PA-28-160	28-1 thru 28-4377	600-72	05-01254	$163.95
PA-28S-160	28-1 thru 28-1760	600-72	05-01254	$163.95
PA-28-180, PA-28S-180	28-671 thru 28-4377	600-72	05-01254	$163.95
PA-28-235	28-10003 thru 28-11038	600-72	05-01254	$163.95
PA28-140	28-25000 thru 28-26956	455-352	05-01755	$186.90
PA28-140	28-7125001thru28-7725290	455-352	05-01755	$186.90
PA28-151	28-7415001thru28-7715314	455-352	05-01755	$186.90
PA28-161	28-7716002 thru 28-8616057	455-352	05-01755	$186.90
PA28-161	2816001 thru 2816110(Less2816066)	455-352	05-01755	$186.90
PA28-161 Cadet	2841001 and On	455-352	05-01755	$186.90
PA28-180	28-4378 thru 28-5152	455-332	05-02212	$119.75
PA28-180	28-5153 thru 28-5869	455-352	05-01755	$186.90
PA28-180	28-7105001 thru 28-7505261	455-352	05-01755	$186.90
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	$198.75
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01755	$186.90
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01755	$186.90
PA28-181	28-7690001 thru 28-8290174	455-352	05-01755	$186.90
PA28-181	28-8390001 and On	455-352	05-01755	$186.90
PA28-201T	28-7921001 thru 28-7921095	455-361	05-02213	$129.85
PA28R-200	28R-30482,28R-35001thru28R-35830	455-322	05-01755	$186.90
PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01755	$186.90
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01755	$186.90
PA28R-201	2837001 thru 2837061	455-322	05-01755	$186.90
PA28R-201T	28R-7703002 thru 28R-7803372	455-361	05-02213	$129.85
PA28R-201T	2803001 thru 2803015	455-361	05-02213	$129.85
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01757	$539.00
PA28RT-201	28R-8118001 and On	455-322	05-01757	$539.00
PA28RT-201T	28R-7931001 thru 28R-8031188	455-361	05-02213	$129.85
PA28RT-201T	28R-8131001 and On	455-361	05-02213	$129.85
PA28-235	28-11040 thru 28-11393	455-332	05-02212	$119.75
PA28-235	28-7110001 thru 28-7210033	455-332	05-02212	$119.75
PA28-235	28-7310001 thru 28-7710089	455-332	05-02212	$119.75
PA28-236	28-7911001 thru 28-8211060	455-332	05-02212	$119.75
PA28-236	28-8311001 and On	455-332	05-02212	$119.75
PA32-260	32-1111 thru 32-1320	455-361	05-02213	$129.85
PA32-260	32-7100001 thru 32-7800008	455-361	05-02213	$129.85
PA32-301T	32-8024001 thru 32-8424002	455-344	05-01750	$127.75
PA32-301T	32-8524001 and On	455-344	05-01750	$127.75
PA32R-301T	32R-8029001 thru 32R-8229078	455-360	05-01748	$166.75
PA32R-301T	32R-8329001 and On	455-360	05-01748	$166.75
PA32RT-300T	32R-7887001 thru 32R-7987146	455-360	05-01748	$166.75

Piper Prop Controls

Model	Serial Number	P/N	Our P/N	Price
PA24-250	24-105 thru 24-2174	455-184	05-02214	$322.00
PA24-250	24-2176 thru 24-2298	455-184	05-02214	$322.00
PA24-250	24-2175, 24-2299 thru 24-3687	455-252	05-02215	$257.95
PA24-260	24-3642, 24-4000 thru 24-4782	455-252	05-02215	$257.95
PA24-260	24-4784 thru 24-4803	455-252	05-02215	$257.95
PA28R-180	28R-30005 thru 28R-30481	455-322	05-01747	$198.75
PA28R-180	28R-30483 thru 28R-31279	455-322	05-01747	$198.75
PA28R-180	28R-7130001 thru 28R-7130019	455-322	05-01747	$198.75
PA28-201T	28-7921001 thru 28-7921095	455-322	05-01747	$198.75
PA28R-200	28R-30482	455-322	05-01747	$198.75
PA28R-200	28R-35001 thru 28R-35830	455-322	05-01747	$198.75
PA28R-200	28R-7135001 thru 28R-7635545	455-322	05-01747	$198.75
PA28R-201	28R-7737002 thru 28R-7837317	455-322	05-01747	$198.75
PA28R-201	2837001 thru 2837061	455-322	05-01747	$198.75
PA28R-201T	28R-7703002 thru 28R-7803372	455-322	05-01747	$198.75
PA28R-201T	2803001 thru 2803015	455-322	05-01747	$198.75
PA28RT-201	28R-7918001 thru 28R-8018116	455-322	05-01747	$198.75
PA28RT-201	28R-8118001 and On	455-322	05-01747	$198.75
PA28RT-201T	28R-7931001 thru 28R-8031188	455-322	05-01747	$198.75
PA28RT-201T	28R-8131001 and On	455-322	05-01747	$198.75
PA28-235	28-7310001 thru 28-7710089	455-344	05-01750	$127.75
PA28-236	28-7911001 thru 28-8211060	455-344	05-01750	$127.75
PA28-236	28-8311001 and On	455-344	05-01750	$127.75
PA32-300	32-40000 thru 32-40565	65451-04	05-02216	$286.95

Throttle Controls for Bellanca Viking Aircraft

P/N S191783-18

Model	Serial Number	Our P/N	Price
17-30A	30263 & On, and aircraft w/S/N prefix: "75-"	05-01763	$448.00
17-31A	73-32-128 & On, and aircraft w/ S/N prefix "75-"	05-01763	$448.00
17-31ATC	73-31067 & On, and aircraft w/S/N prefix "75-"	05-01763	$448.00

Throttle Controls for Grumman Aircraft

Model	Serial Number	P/N	Our P/N	Price
AA-1	AA1-0433 and On	507005-1	05-01760	$374.00
AA-1A	AA1A-0001 and On	507005-1	05-01760	$374.00
AA-1B	AA1B-0001 and On	507005-1	05-01760	$374.00
AA-1C	AA1B-0601	507005-1	05-01760	$374.00
AA-1C	AA1C-0001 and On	507005-1	05-01760	$374.00
AA-5	AA5-0001 and On	507005-2	05-01761	$373.00
AA-5A	AA5A-0283 and On	507005-2	05-01761	$373.00
AA-5B	AA5B-0001 and On	507005-3	05-01762	$388.00

FAA-PMA Approved Throttle Controls for aircraft manufactured by Grumman American, Gulfstream Aerospace Corp. or Tiger Aircraft LLC. McFarlane Aviation has developed a longer conduit terminal that allows extra clearance between the swivel joint and the air filter box at the clamp location.

KNOTS 2U PIPER REPLACEMENT PARTS

P/N 05-07038

P/N 05-07044

P/N 05-07001

Hand laid fiberglass replaces the OEM plastic, from Tail Cone to Nose Fairing we can help you find the right carbon fiber / kevlar FAA/PMA approved replacement aircraft parts for your aircraft.

PA-23

MFR PN	Description	PN	Price
GF16109-00	K2U Piper PA-23Tip Stabilator	05-07001	$151.00
GF32464-00	K2U Piper PA-23 Faring Left Wing Root	05-07037	$185.00
GF32464-01	K2U Piper PA-23 Faring Right Wing Root	05-07038	$185.00
GF32466-00	K2U Piper PA-23 Faring Nacelle Left Inboard	05-07039	$185.00
GF32466-01	K2U Piper PA-23 Faring Nacelle Right Inboard	05-07041	$185.00
GF32471-00	K2U Piper PA-23 Faring Nacelle Left Outboard	05-07042	$185.00
GF32471-01	K2U Piper PA-23 Faring Nacelle Right Outboard	05-07043	$185.00
GF32467-00	K2U Piper PA-23 Left Wing Tip	05-07044	$376.00
GF34267-01	K2U Piper PA-23 Right Wing Tip	05-07045	$376.00
K16792-00	K2U Piper PA-23 Rudder Tip	05-11059	$171.00

PA-24

MFR PN	Description	PN	Price
GF20804-12	K2U Piper PA-24 Early Model Bulk-head Assembly Tail Faring	05-07016	$141.00
GF21143	K2U Piper PA-24 Bottom Cowl Scoop Assembly	05-07017	$309.00
GF21555-00	K2U Piper PA-24 Rudder Tip w/o Slot	05-07018	$141.00
GF21555-02	K2U Piper PA-24 Rudder Tip w/ Slot	05-07019	$141.00
GF21556-00	K2U Piper PA-24 PA-30 Stabilator Tip	05-07021	$148.00
GF21557-00	K2U Piper PA-24 Fin Tip	05-07022	$154.00
GF21605-05	K2U Piper PA-24 Late Model Bulk-head Assembly Tail Faring	05-07023	$141.00
GF24846-00	K2U Piper PA-24-260 Rudder Cap	05-07032	$181.00
GF24896-00	K2U Piper PA-24-260 Fin Tip	05-07033	$142.00
GF28041-00	K2U Piper PA-24 Stabilator Tip	05-07036	$164.00
K21947-00	K2U Piper PA-24 Cowl Scoop	05-11060	$352.00
K21933-00	K2U Piper PA-24 Cabin Air Inlet Scoop	05-10860	$112.00
K23451-00	K2U Piper PA-24 Rudder Tip	05-10861	$168.00

PA-28/32

MFR PN	Description	PN	Price
GF35885-03	K2U Piper PA-28 Lower Rudder Faring	05-07046	$347.00
GF35885-10	K2U Piper PA-28 Lower Rudder Fairing W/O Light	05-07047	$347.00
GF35944-15	K2U Piper PA-28 Nose Wheel Faring Assembly 6.00 X 6 W/ Door	05-07049	$845.00
GF67352-00	K2U Piper PA-28 Left Nose Gear Door Assembly	05-07073	$578.00
GF67352-01	K2U Piper PA-28 Right Nose Gear Door Assembly	05-07074	$578.00
GF78913-00	K2U Piper PA-28/32/44 Forward Dorsal	05-07083	$231.00
GF79890-00	K2U PA-28/32 Faring Left Main Wheel SHELL	05-07084	$1,026.00
GF79890-01	K2U Piper PA-28/32 Faring Right Main Wheel SHELL	05-07086	$1,026.00
GF79890-02	K2U Piper PA-28/32 Faring Left Main Wheel ACCESS PANEL	05-07087	$483.00
GF79890-03	K2U Piper PA-28/32 Faring Right Main Wheel ACCESS PANEL	05-07088	$483.00
GF79892-04	K2U Piper PA-28/32 Faring Assembly Left Upper Forward Main Wheel	05-07089	$211.00
GF79892-05	K2U Piper PA-28/32 Faring Assembly Right Upper Forward Main Wheel	05-07091	$211.00
GF79892-09	K2U Piper PA-28/32 Faring Assembly Main Wheel Right Upper AFT	05-07092	$211.00
GF79892-10	K2U Piper PA-28/32 Faring Assembly, Main Wheel Left Upper AFT	05-07093	$211.00
K2U65300-00	K2U Piper PA-28 Stabilator Tip Extended	05-07111	$297.00
K35512-00	K2U Piper PA-28-151/161 Faring Assembly Nose Wheel 5.00 X 5	05-07112	$634.00
K65203-00	K2U Piper PA-28/32 Faring Assembly-Main Left Wheel	05-07113	$444.00
K65203-01	K2U Piper PA-28/32 Faring Assembly Main Right Wheel	05-07114	$444.00
K65331-00	K2U Piper PA-28/32 Faring Assembly Nose Wheel 6.00 X 6	05-07116	$457.00
GF35944-014	K2U Nose Wheel Pant. No Door 6.00 X 6 Tire Piper PA-28 PA-32	05-11055	$679.00

PA-30

MFR PN	Description	PN	Price
GF25066	K2U Piper PA-30 S/N 30-1717 & 30-1745 & UP PA-39 Stabilator Tip	05-07034	$143.00
GF23595-00	K2U Piper PA-30/39 Rudder Tip	05-07031	$232.00

PA-31

MFR PN	Description	PN	Price
GF40364-02	K2U Piper PA-31 Tip Stabilator	05-07050	$161.00
GF42426-00	K2U Piper PA-31Faring Assembly Nacelle Left Outboard	05-07051	$154.00
GF42426-01	K2U Piper PA-31 Faring Assembly Nacelle Right Outboard	05-07052	$154.00
GF42455-00	K2U Piper PA-31 Faring Assembly Nacelle Left Top Inboard	05-07053	$143.00
GF42455-01	K2U Piper PA-31 Faring Assembly Nacelle Right Top Inboard	05-07054	$143.00
GF42455-02	K2U Piper PA-31 Faring Assembly Nacelle Left Forward Inboard	05-07056	$143.00
GF42455-03	K2U Piper PA-31 Faring Assembly Nacelle Right Forward Inboard	05-07057	$143.00
GF42455-04	K2U Piper PA-31 Faring Assembly Nacelle Left Bottom Inboard	05-07058	$143.00
GF42455-05	K2U Piper PA-31 Faring Assembly Nacelle Right Bottom Inboard	05-07059	$143.00
GF43741-00	K2U Piper PA-31 Elevator Left Tip	05-07062	$188.00
GF43741-01	K2U Piper PA-31 Elevator Right Tip	05-07063	$188.00
GF43786-00	K2U Piper PA-31 Elevator Leading EDGE	05-07064	$218.00
GF44943-00	K2U Piper PA-31 Fin Tip	05-07069	$212.00
GF55802-12	K2U Piper PA-31 Left Wing Tip W/ Reco Light	05-07071	$789.00
GF55802-13	K2U Piper PA-31 Right Wing Tip W/Reco Light	05-07072	$789.00
K40363-1	K2U PA-31 Series Rudder Tip	05-10862	$310.00

PA-32

Description	PN	Price
K2U Piper PA-32 Nose Wheel Faring Assembly 6.00 X 6 With door	05-07048	$845.00

PA-34

MFR PN	Description	PN	Price
GF95620-07	K2U Piper PA-34 Stabilator Tip	05-07096	$226.00
GF95907-00	K2U Piper PA-34 Rudder Tip Faring	05-07097	$331.00
GF96338-04	K2U Piper PA-34 Upper Tail Cone	05-07103	$296.00
GF96338-08	K2U Piper PA-34 Lower Tail Cone	05-07104	$269.00

PA-38

MFR PN	Description	PN	Price
GF77328-02	K2U Piper PA-38 Left Main Gear Wing Faring	05-07076	$186.00
GF77328-03	K2U Piper PA-38 Right Main Gear Wing Faring	05-07077	$186.00
GF77606-03	K2U Piper PA-38 Forward Dorsal Fin	05-07078	$221.00
GF77606-08	K2U Piper PA-38 Dorsal Fin AFT	05-07079	$154.00
GF77607-00	K2U Piper PA-38 Faring Dorsal Fin	05-07081	$164.00
GF77613-00	K2U Piper PA-38 Lower Rudder Faring	05-07082	$176.00

PA-44

Description	Part No.	Price
K2U Piper PA-44 Nacelle AFT Tip	05-07094	$212.00

PA-60

MFR PN	Description	PN	Price
GF200038-901	K2U Piper PA-60 Left Long Tip, Short Wing Assembly	05-07011	$578.00
GF200038-902	K2U Piper PA-60 Right Long Tip, Short Wing Assembly	05-07012	$578.00
GF200102-901	K2U Piper PA-60 Left Short Tip, Long Wing Assembly	05-07013	$462.00
GF200102-902	K2U Piper PA-60 Right Short Tip, Long Wing Assembly	05-07014	$462.00
GF220021-505	K2U Piper PA-60 Vertical Fin Tip W/O Beacon	05-07024	$346.00
GF220021-903	K2U Piper PA-60 Horizontal Tip Assembly	05-07026	$346.00
GF220021-913	K2U Piper PA-60 Vertical Tip Assembly With Beacon	05-07027	$404.00

CESSNA

MFR PN	Description	PN	Price
GF55200-00	K2U Cessna 170/172 Lower Cowl Lip	05-07070	$131.00
K0741648-01	K2U Cessna 182T T182T Left Wheel Fairing Assembly	05-07107	$1,472.00
K0741648-02	K2U Cessna 182T T182T Right Wheel Fairing Assembly	05-07108	$1,472.00
K0743050	K2U Cessna 182T T182T Nose Fairing Assembly	05-07109	$1,321.00
K1234640-1	K2U Cessna 206/207/210 Late Models Tip Elevator LH	05-10858	$163.00
K1234640-2	K2U Cessna 206/207/210 Late Models Tip Elevator RH	05-10859	$163.00
K0531006-34	K2U Cessna 172 Models Rudder Cap	05-11056	$129.00
K0531006-112	K2U Cessna 172 Rudder Cap	05-11057	$129.00
K0531012-2	K2U Cessna 172 Dorsal Fairing	05-11058	$106.00
K0421002-1	K2U Cessna 150/152 Strut Faring Lower left	05-11019	$141.00
K0421002-2	K2U Cessna 150/152 Strut Faring Lower Right	05-11020	$141.00
K0522150-4	K2U Cessna 150/172/175 Strut Fairing Upper Left	05-11024	$141.00
K0522150-3	K2U Cessna 150/172/175 Strut Fairing Upper Right	05-11023	$141.00
K0522150-1	K2U Cessna 172/175 Strut Faring Lower Left	05-11021	$141.00
K0522150-2	K2U Cessna 172/175 Strut Faring Lower Right	05-11022	$141.00
K0723605-1	K2U Cessna 180/182 Strut Faring Lower Left	05-11025	$141.00
K072305-2	K2U Cessna 180/182 Strut Faring Lower Right	05-11026	$141.00

COMMANDER

MFR PN	Description	PN	Price
GF175009-3	K2U Commander 112 Left Wing Tip	05-07008	$447.00
GF175009-8	K2U Commander 112 Right Wing Tip	05-07009	$447.00
GF235000-01	K2U Commander 114 Wing Tip With Left Reco Light	05-07028	$619.00
GF235000-02	K2U Commander Wing Tip With Right Reco Light	05-07029	$619.00
GF43367-210	K2U Commander 114 TAIL Stinger	05-07060	$404.00
GF43650-501	K2U Commander 112/114 Dorsal Fairing	05-07061	$549.00
GF44233-11	K2U Rockwell Commander 114 Rudder Cap	05-07066	$181.00
GF44300-3	K2U Rockwell Commander Vertical Fin Cap	05-07067	$181.00
GF44324-400	K2U Commander 112/114 Tip Stabilator	05-07068	$277.00

BEECH

MFR PN	Description	PN	Price
GF105-1010-00	K2U Beech 76 Left Wing Tip	05-06995	$357.00
GF105-1010-01	K2U Beech 76 Right Wing Tip	05-06996	$357.00
GF108-1700-00	K2U Beech 77 Left Wing Tip	05-06997	$357.00
GF108-1700-01	K2U Beech 77 Right Wing Tip	05-06998	$357.00
GF108-4400-17	K2U Beech 77 TAIL CONE	05-06999	$253.00
GF169-1100-00	K2U Beech 23/24 Left Wing Tip	05-07002	$357.00
GF169-1100-01	K2U Beech 19/23/24 Right Wing Tip	05-07003	$357.00
GF169-420028-11	K2U Beech 19/23/24 Fuel Sump Drain Cover	05-07004	$119.00
GF169-440013-11	K2U Beech 19/23/24 Dorsal	05-07006	$331.00
GF169-4411-S	K2U Beech 19/23/24 Tail Conr	05-07007	$348.00
GF96110010-17	K2U Beech 55/56/58 Fairing Engine Nacelle Left Outboard	05-07098	$251.00
GF96110010-19	K2U Beech 55/56/58 Fairing Engine Nacelle Right Outboard	05-07099	$251.00
GF96110010-21	K2U Beech 55/56/58 Fairing Engine Nacelle Left Inboard	05-07101	$251.00
GF96110010-23	K2U Beech 55/56/58 Fairing Engine Nacelle Right Inboard	05-07102	$251.00
GF96-4415-00	K2U Beech 55/58 Dorsal Saddle	05-07106	$362.00
K33-440011-2	K2U Beechcraft 33 & 36 Models Dorsal Fin	05-11061	$312.00

LAMINAR FLOW PIPER SPEED MODS

The first and still the best! Laminar Flow has been producing high quality Speed Mods for the Piper fleet since 1983. All of their products are time tested, race proven (with the results documented by such well respected publications as Aviation Consumer) and come with a money back guarantee.

LFS under-wing Speed Mods are fabricated from aircraft grade aluminum eliminating the cracking and warping that frequently occur when composite components are fastened to a metal wing.

Aircraft Modification	Aircraft Model	Gains / Insallation Time	Part No.	Price
Aileron Gap Seal Square Wing	All PA 28 / 32	3 MPH / 1.5 Hrs	08-07543	$279.00
Aileron Gap Seal Taper Wing	All PA 28 with Taperwing	3 MPH / 2 Hrs	08-07544	$377.00
Flap Gap Seals	PA 34	3 MPH / 2.5 Hrs	08-07546	$235.95
Flap Gap Seals	All PA 28 / 32	3 MPH / 2.5 Hrs	08-07547	$195.00
Flap Hinge Fairings 6 Pairs	All PA 28 / 32	2 MPH / 3.5 Hrs	08-07548	$450.00
Flap Hinge Fairings 8 Pairs	PA 34	2 MPH / 4 Hrs	08-07549	$560.00
Tank Fairings / Smoothing Kit	PA 28 / 32	4-15 MPH / 5-15 Hrs	08-07550	$832.00
Tank Fairings / Smoothing Kit Lance and Seneca	PA 32R / 34	8-15 MPH / 10-15 Hrs	08-07551	$1,560.00
Fixed Nose Fairing	All Fixed Gear PA 28 / 32 to 1978	2-3 MPH / 2 Hrs	08-07552	$225.00
Wheel Well Fairings	PA 28R Only	3 MPH / 4 Hrs	08-07553	$598.00
Wheel Well Fairings	PA 32 / 34	4 MPH / 3 Hrs	08-07554	$598.00

J-3 LOWER DOOR

FAA/PMA'D. Uncovered, with pin. Includes handle and plunger. Does not include glass. Replaces Piper P/N 50173-00

P/N 05-05034 ..... $499.00

UPPER DOOR ASSEMBLY

FAA/PMA'D. Uncovered. Does not include glass. Replaces Piper P/N 51853-00.

P/N 05-05035 ..... $386.00

J-3 BRAKE PEDAL

FAA/PMA'd

LH Replaces Piper 41602-02 .....P/N 05-04978 ..... $132.95 ea.

RH Replaces Piper 41602-03 .....P/N 05-04979 ..... $132.95 ea.

J-3 RUDDER PEDAL KIT

FAA/PMA'd. Consists of two rear and front pedal assemblies. Replaces Piper P/N 40842-04 & 40842-05 .....P/N 05-04980 ..... $319.00 ea.

J-3 STEP

FAA/PMA'd. Replaces Piper P/N 81903-02.

P/N 05-05003 ..... $98.90

PIPER FAA / PMA WING TIP FAIRING

Wing Tip Mount, FAA/PMA'd For use in installing lights on PA22, PA22-108, PA22-135, PA22S-135, PA22-150, PA22S-150, PA22-160 and PA22S-160 only.

P/N 05-08094 ..... $62.00

J-3 EXHAUST COMPONENTS

FAA/PMA'd. J-3 Muffler only (no shroud). Replaces Piper P/N 71053-02.

P/N 05-04981 ..... $453.00

FAA/PMA'd. J-3 Tailpipe (This tailpipe will not fit J-4s) Replaces Piper P/N 74501-00.

P/N 05-04982 ..... $195.95

FAA/PMA'd. J-3 Tailpipe Shroud. Replaces Piper P/N 70912-00

P/N 05-04983 ..... $129.95

FAA/PMA'd. J-3 Muffler Shroud Replaces Piper P/N 70963-00

P/N 05-06460 ..... $299.95

J-3 MUFFLER CLAMP WITH PIN

FAA/PMA'd. J-3, 4, 5, & PA-15, 17, PA-22 Tri-Pacer & Colt Styles, PA-28-140 Cherokee Style. Also suitable for use on Lycoming powered homebuilts 108 hp thru 150 hp. 2 required for full system. Sold as each. Replaces Piper P/N 70591-02..... P/N 05-04985 ..... $31.80

J-3 TAILPIPE CLAMP

FAA/PMA'd. for full system-J-3, 4, 5, & PA-12, 14, 15, 16, 17, PA-18 Super Cub, PA-22 Tri-Pacer & Colt Styles, PA- 28-140 Cherokee Styles. Also suitable for use on Lycoming powered homebuilts 108 hp thru 150 hp. 1 required. Sold as each. Replaces Piper P/N 72691-00

P/N 05-05253 ..... $31.70

J-3 EXHAUST SUPPORT BRACKET

FAA/PMA'd Replaces Piper P/N 70581-00

P/N 05-04987 ..... $32.85

FULL EXHAUST SYSTEM J-3

FAAPMA'd. Includes all component parts listed below plus the PMA'd header stacks. Fits all J-3 and home-builts using A-65, A75, C85-8 and C90-8 engines without accessories. Uses treated aluminized mild steel stacks, including clamps.

Complete System ..... P/N 05-06461.....$1,195.00

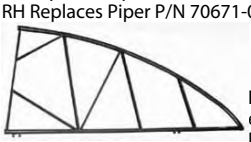
Replacement system includes:

Muffler .....Replaces Piper P/N 71053-02
Tailpipe.....Replaces Piper P/N 74501-00
Tailpipe Shroud.....Replaces Piper P/N 70912-00
Muffler Shroud .....Replaces Piper P/N 70963-00
Muffler Clamps, two .....Replaces Piper P/N 70591-02
Tail Pipe Clamp.....Replaces Piper P/N 72691-00
Bracket.....Replaces Piper P/N 70581-00
Stack, LH .....Replaces Piper P/N 71082-00
Stack, RH.....Replaces Piper P/N 70671-00

J-3, A-65 HEADER STACKS

FAA/PMA'd. Exhaust stacks built to exact dimensions of J-3 header pipes of mild steel with long-life hot aluminized finish.

Both Stacks .....P/N 05-04993 ..... $473.00
LH Replaces Piper P/N 71082-00.....P/N 05-04994 ..... $248.95
RH Replaces Piper P/N 70671-00 ..... P/N 05-04995 ..... $248.95



J-3 HORIZONTAL STABILIZER

FAA/PMA'd. Newly manufactured. Uncovered. Replaces Piper P/N 40643-00

P/N 05-05036..... $512.00

J-3 STABILIZER ATTACH LINK ASSEMBLY

FAA/PMA'd. Replaces Piper P/N43122-00.

P/N 05-05015 ..... $131.75

J-3 RUDER ASSEMBLY

E-456-000

FAA/PMA'd. Uncovered. Replaces Piper P/N 41313-00

P/N 05-05037 .....$483.00

J-3 VERTICAL FIN

FAA/PMA'd. Uncovered. Replaces Piper P/N 40592-00 ..... P/N 05-04998 ..... $308.00

STABILATOR CABLE KITS FOR PIPERS

McFarlane has complete stock of FAA-PMA stabilator cables for the Piper aircraft affected by AD 2013-02-13 (except PA-44) and Piper Service Bulletin 1245A.

McFarlane flight controls cables offer quality that is second to none in the aircraft industry, and a set of four stabilator cables typically costs over $200 less than the equivalent Piper cables. Cables are available individually or as complete airplane kits at 15% savings.

McFarlane also stocks all common turnbuckle barrels and clips. Convenient and money saving kits include all four stabilator cables (two forward and two aft), two MS21251-B5S turnbuckle barrels and ten MS21256-1 locking clips (spares always come in handy).

Description	Part No.	Price
Stabilator Cable Kit For Piper PCKT-STAB-01	05-10727	$388.00
Stabilator Cable Kit For Piper PCKT-STAB-02	05-10728	$237.95
Stabilator Cable Kit For Piper PCKT-STAB-03	05-10729	$298.95
Stabilator Cable Kit For Piper PCKT-STAB-04	05-10730	$363.00
Stabilator Cable Kit For Piper PCKT-STAB-05	05-10731	$381.00
Stabilator Cable Kit For Piper PCKT-STAB-06	05-10732	$446.00
Stabilator Cable Kit For Piper PCKT-STAB-07	05-10733	$335.00
Stabilator Cable Kit For Piper PCKT-STAB-08	05-10734	$438.00
Stabilator Cable Kit For Piper PCKT-STAB-09	05-10735	$419.61
Stabilator Cable Kit For Piper PCKT-STAB-10	05-10736	$391.00
Stabilator Cable Kit For Piper PCKT-STAB-11	05-10737	$346.00
Stabilator Cable Kit For Piper PCKT-STAB-12	05-10739	$386.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR APPLICATION CHART

REPLACEMENT PIPER PARTS

J-3C-65 COWLING ASSEMBLY STC 'D #SA 158GL

FAA/PMA'd. Nose pieces on cowling are made of high strength fiberglass.
Complete Unit ..... P/N 05-04999.....**$896.00**

Top Half Cowl Replaces Piper P/N 72543-00
P/N 05-06462.....**$539.00**

Bottom Half Cowl Replaces Piper P/N 72473-00
P/N 05-05001.....**$522.00**

J-3 STYLE ENGINE EYEBROW KIT

J-3 Style Aluminum Engine Eyebrow Kit Hardware included. Copy of original. For continental engines A65 & A-75. Mounting Backets for this kit are available 05-08089. .....
Eyebrow Kit.....P/N 05-08088...**$464.00**
Mounting Bracket..P/N 05-08089.....**$39.95**

J-3 BOOT COWL

FAA/PMA'd. Includes fire wall and windshield frame. Replaces Piper P/N 23993-00
P/N 05-05013.....**$534.00**

J-3 WINDSHIELD FRAME

FAA/PMA'd. Replaces Piper P/N 23942-00 & 23952-00
P/N 05-05014 ..... **$78.75**

J-3 BIRDCAGE STRUCTURE

FAA/PMA'd. Used as replacement for damaged original. Fabricated of heavier material and completely heliarc welded for added strength. Replaces Piper P/N 00032-64
P/N 05-05063 ..... **$543.00**

J-3 FUSELAGE TAILPOST

FAA/PMA'd. Replaces Piper P/N 20012... P/N 05-05047.....**$90.75**

J-3 ELEVATOR BELL CRANK MOUNT

Bracket Assembly. FAA/PMA'd.
LH Replaces Piper P/N 21442-02 P/N 05-05045.....**$94.99**
RH Replaces Piper P/N 21442-03P/N 05-05046.....**$82.75**

J-3 WING SPAR-TO-FUSELAGE ATTACH FITTING KIT

FAA/PMA'd. For wood spar wing only. Front and rear. Replaces Piper P/N 12801-00 & 12791-00 ..... P/N 05-05076.....**$141.95**

J-3 WING STRUT ATTACH FITTING KIT

FAA/PMA'd. Consists of two each front and rear fittings, for one wing. Made of .063 MIL spec 4130 chromoly tubing. Usable on wood spar wings only. Kit is four pieces. Replaces Piper P/Ns 12512-02, 12512-03, 12502-02, 12502-03 ..... P/N 05-05077.....**$125.95**

J-3 PREFORMED AILERON GAPS

FAA/PMA'd. For use with metal ribs only. Replaces Piper P/N 15572-00 & 15572-01 ..
P/N 05-05079 ..... **$78.75**

J-3 METAL RIB WING REPAIR KIT

FAA/PMA'd. Kit consists of 6 pcs. of 3', 4 pcs. of 18" and 5pcs. of 20" long material to properly repair main and nose ribs and uprights for Piper style ribs. Replaces Many Piper P/Ns..... P/N 05-05043.....**$105.75**

J-3C-40, 50, 50S, 65, 65S WING TRAILING EDGES

FAA/PMA'd.
For metal spar
Replaces Piper P/N 15773-00..... P/N 05-05031.....**$68.75**
For wood spar
Replaces Piper P/N 15593-00..... P/N 05-05032.....**$67.75**
Aileron Trailing Edge Replaces Piper P/Ns 42922-00,42933-00, 40411-00..... P/N05-05033.....**$89.90**

J-3 WING LEADING EDGE

FAA/PMA'd. Equipped with metal spar, LH or RH. Replaces Several Piper P/Ns
P/N 05-05041 .....**$291.95**

SEALED J-3 LIFT STRUTS WITH CLAMPS

FAA/PMA'd. Includes jury strut clamps, original size 7/16" X 20 thread. J-3 Front and Rear Lift Struts are oiled and sealed and are manufactured to revision levels and installed per AD-93-10-06 are an FAA approved alternate means of compliance and is considered terminating actions for repetitive inspection requirement of AD-99-01-05. For lift struts, forks require a five year inspection per A.D. 93-10-06.
Front ..... P/N 05-05016.....**$742.00**
Rear..... P/N 05-05017.....**$568.00**

J-3 JURY STRUTS

FAA/PMA'd. Front with pitot tube
Replaces Piper P/N 12931-00..... P/N 05-05067.....**$150.75**
FAA/PMA'd. Front w/o pitot tube
Replaces Piper P/N 12571-02..... P/N 05-05068.....**$141.75**
FAA/PMA'd. Rear
Replaces Piper P/N 12571-03..... P/N 05-05071.....**$118.85**
FAA/PMA'd. Jury Strut Fittings (Set of 4)
Replaces Piper P/N 12581-00..... P/N 05-05069.....**$78.95**
FAA/PMA'd. Jury Strut Innerconnect
Replaces Piper P/N 12591-00..... P/N M-05-05070 .....**$69.85**

J-3 AND PA-11 LANDING GEAR

FAA/PMA'd. Completely fabricated. Ready to install landing gear with 1-1/4" axle.
LH - Replaces Piper P/N 10033-00
P/N 05-05005.....**$539.00**
RH - Replaces Piper P/N 10033-01
P/N 05-05006.....**$539.00**

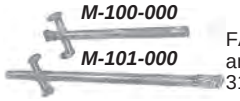
J-3 BOOT COVERS

FAA/PMA'd. Sold as a pair. Replaces Piper P/N 31073-00 ..... P/N 05-05008.....**$34.75**

J-3 CABANE VEE ASSEMBLY

FAA/PMA'd. J-3 Series s/n 2315 to s/n 8277 except s/n 2316, 2332 & 2353. Uses 1/4" bolt. Replaces Piper P/N 21-09
P/N 05-05009.....**$220.95**
FAA/PMA'd. J-3 Series s/n 8278 & up, uses 5/16" bolt. Replaces Piper P/N 30602-00 ..... P/N 05-05010.....**$241.95**

J-3 SHORT SHOCK STRUT



FAA/PMA'd. Fits both J-3 s/n 8278 and up, and L4 series. 15" length. Replaces Piper P/N 31392-00..... P/N 05-05011.....**$213.95**

J-3 LONG SHOCK STRUT

FAA/PMA'd. Fits both J-3 s/n 8278 and up, and L4 series. 25" Length.
Replaces Piper P/N 31382-00..... P/N 05-05012.....**$197.75**

AP

J-3 ELEVATOR PUSH-PULL TUBE

FAA/PMA'd. Fits J-3 & PA-11 aircraft. Uses control cable. Replaces Piper P/N 40901-02
P/N 05-05074 ..... $283.95

J-3 PIPER STABILIZER YOKE INSPECTION COVER

FAA/PMA'd Replaces Piper P/N 60571-00 & 60571-01 ..... P/N 05-05078 ..... $38.99

J-3 CONTROL STICK TORQUE TUBE ASSEMBLIES

FAA/PMA'd. Replace your worn J-3 unit with a newly manufactured unit. Replaces Piper P/N 40223-00 ..... P/N 05-05004 ..... $608.00

J-3 CONTROL STICK CONNECTOR

FAA/PMA'd. Fits J-3 & PA-11 aircraft. Replaces Piper P/N 40261-00 ..... P/N 05-05073 ..... $133.95

J-3 THROTTLE COVER PLATE

FAA/PMA'd. Exact reproduction of J-3 throttle plate with imprinted wording. High quality, unpainted. Ideal for most light aircraft. Replaces Piper P/N 41501-00
P/N 05-05081 ..... $37.50

J-3 STICK ASSEMBLY

FAA/PMA'd. Fits J-3 & PA-11 aircraft. Includes socket and removable stick. Replaces Piper P/N 42812-00 ..... P/N 05-05072 ..... $226.95

J-3 MAIN TANK

FAA/PMA'd. Exact replacement, aluminum. Ideal for most homebuilts.12 gal. tank, 17-1/2"L x 13"W x14-1/2"H. Uses a CAV-110-H-4 drain valve, not included. Replaces Piper P/N 70723-00
..... P/N 05-04984 ..... $538.00

STC'D J-3 WING TANKS

Kit includes mounting brackets, installation instructions and STC paperwork. Requires a gas cap, a 2-way shut-off valve and 3/8" x 1/4" brass fuel strainer which are not included.

11-1/2 Gallon Kit
LH Wood Spar ..... P/N 05-04989 ..... $636.00
RH Wood Spar ..... P/N 05-04991 ..... $635.00
11-1/2 Gallon Kit
LH Metal Spar ..... P/N 05-04990 ..... $635.00
RH Metal Spar ..... P/N 05-06839 ..... $634.00

J-3 GAS TANK FUSELAGE STRAP KIT

FAA/PMA'd. For main fuel tank applications. Includes one each listed below and felt padding 180-150 ..... P/N 05-06463 ..... $163.75
Front Upper ..... Replaces Piper P/N 70462-00
Front Lower ..... Replaces Piper P/N 70451-03
Rear Upper ..... Replaces Piper P/N 70472-00
Rear Lower ..... Replaces Piper P/N 70451-02

J-3, PA-11 GAS CAP & FLOAT

FAA/PMA'd. 15" depth. Replaces Piper P/N 71041-00 ..... P/N 05-05022 ..... $79.65

PIPER FAA / PMA ENGINE MOUNTS

Application	Description	PN	Price
Piper J-3 and PA-18. Fits firewall mounting points, 18-3/4"W x 18-3/8"H. For Lyc. 150. thru 180 hp.	M-525-000 Dynafocal Swing Out Mount	05-08083	$711.00
J-3 and PA-18 Style Engine Mount	M-525-200 Dynafocal Swing Out Mount	05-08086	$659.00
Installation brackets for dynafocal mounts	Install Brackets For Swing Out Mounts	05-08087	$116.75
Engine Mounts for Piper PA-15 & 17 use with Continental 65, 75, 85, 90 and 100 hp engines	M-231-000 Piper PA-17 Engine Mount	05-08091	$507.00
Engine Mounts for Piper PA-18, 105, 135 & 150hp	M-235-000 Piper PA-18 Engine Mount	05-08092	$652.00

J-3 FIREWALL CABIN AIR BOX

FAA/PMA'd. Replaces Piper P/N 70422-00
P/N 05-05002 ..... $80.75

J-3 NOSE COWL RAM AIR BOX

FAA/PMA'd. Provides a source of ram air for both cabin and carb heat shrouds. 2" diameter. Replaces Piper P/N 72522-00
P/N 05-05044 ..... $153.75

J-3 FRONT SEAT FRAME ASSEMBLY

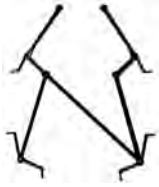
FAA/PMA'd. Replaces Piper P/N 51013-02
P/N 05-04997 ..... $533.00

J-3 REAR SEAT CROSS TUBE

FAA/PMA'd. Replaces Piper P/N 50381-02
P/N 05-05061 ..... $88.75

J-3 ARCTIC HEATER

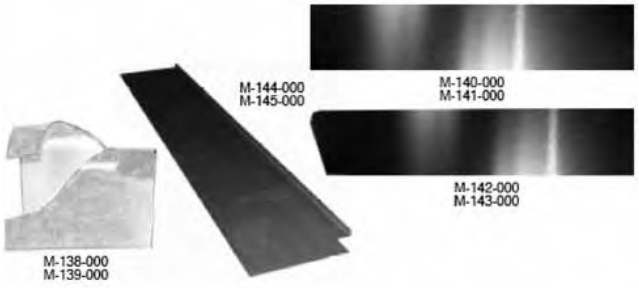
FAA/PMA'd. Exact copy of original J-3. Increase cabin heat by 70%. Now fly comfortably in the dead of winter. Attaches to LH heater manifold. Shipped complete with heater collector shroud, aeroduct tubing, and firewall airbox coupling. PMA'd as modification part. Three pieces.
P/N 05-04988 ..... $221.95



J-3 ENGINE MOUNT

FAA/PMA'd. Use with Cont. engines. Has 7/16" bolt hole and requires our bushings. Replaces Piper P/N 71163-00 P/N 05-05007 ..... $566.00

J-3 FAIRING SETS & FAIRINGS



FAA/PMA'd. LH Fairing Set
Includes one each LH Wing Root Fairing, LH Fairing Top, LH Rear Fairing Bottom and LH Front Fairing Bottom. See Replacement Piper P/Ns Below ..... P/N 05-05020 ..... $164.95
FAA/PMA'd. RH Fairing Set
Includes one each RH Wing Root Fairing, RH Fairing Top, RH Rear Fairing Bottom and RH Front Fairing Bottom. See Replacement Piper P/Ns Below ..... P/N 05-05021 ..... $164.95
FAA/PMA'd. Wing Root Fairing
LH Replaces Piper P/N 60803-00 ..... P/N 05-05023 ..... $41.50
RH Replaces Piper P/N 60803-01 ..... P/N 05-05024 ..... $41.50
FAA/PMA'd. Fairing Top
LH Replaces Piper P/N 60772-00 ..... P/N 05-05025 ..... $42.75
RH Replaces Piper P/N 60702-01 ..... P/N 05-05026 ..... $42.75
FAA/PMA'd. Rear Fairing Bottom
LH Replaces Piper P/N 60782-00 ..... P/N 05-05027 ..... $35.75
RH Replaces Piper P/N 60782-01 ..... P/N 05-05028 ..... $35.75
FAA/PMA'd. Front Fairing Bottom
LH Replaces Piper P/N 60792-00 ..... P/N 05-05029 ..... $38.75
RH Replaces Piper P/N 60872-00 ..... P/N 05-05030 ..... $38.75

J-3 REAR WINDOW CHANNEL

FAA/PMA'd. Replaces Piper P/N 10057-00 & 10058-00..... P/N 05-05038..... $45.50

SLIDING WINDOW GUIDE ASSEMBLY KIT, LH

Consists of front and rear frames and slides. Includes opening stop. 2-3 ft. pieces Replaces Piper P/Ns 21671-00, 10059-00

P/N 05-05075.....$103.75

ELEVATOR HORN INSPECTION PLATES

FAA/PMA'd Metal, unpainted. Sold as a Set of 2 Replaces Piper P/N 60742-00 & 60742-01

P/N 05-05039 $58.75

FLEXIBLE HEAT TUBE ADAPTER

FAA/PMA'd. Replaces Piper P/N 72911-00

P/N 05-05059..... $56.75

ENGINE FRONT COWLING ATTACH BRACKET

FAA/PMA'd Sold as a set of 2. Replaces Piper P/N 72651-00 & 72571-00

P/N 05-05060.....$154.75

PIPER SEATBELT BUCKLE APPLIQUE

Enhance Your Original scratched, dull Seatbelt Buckles with Our Custom Peel 'n Stick Appliques. **Sold in Pairs**.....

P/N 09-03758.....$9.95

PIPER CHEROKEE RAM-SHORN YOKE BUTTON APPLIQUE

Put One On Each Side...(sold separately) This is mounted on an .040 lexan backing. Same Size As Original - Installation Instructions Included..... P/N 09-03760..... $34.95

PIPER FUSELAGE SIDEPLATE APPLIQUE

Put One On Each Side...(sold separately) Easy to install, Peel 'n Stick. Same Size As Original - Covers The Old Rivet-holes. ..... P/N 09-03765..... $39.95

PIPER CHEROKEE BOWTIE YOKE APPLIQUE

Put One On Each Side...(sold separately) This is mounted on an .090 aluminum backing Same Size As Original - Installation Instructions Included..... P/N 09-03766..... $23.50

J-3 BOOT COWL NAMEPLATE

Exact reproduction of the original. Raised metal lettering requires painting. 6-1/8" x 1-1/2". Replaces Piper P/N 480 921

P/N 05-04996 .....$24.50

TRIM TAB CONTROL COVER PLATE

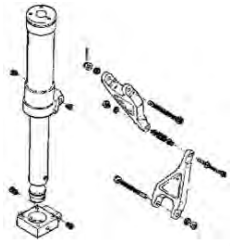
Nose Up/Down markings need to be applied to plate. Replaces Piper P/N 41131-00..... P/N 05-05040..... $38.85

INSTRUMENT PANEL WITH CUT OUTS

FAA/PMA'd. with Cutouts Five holes each of 3-1/8" dia. Replaces Piper P/N 00024-94

P/N 05-05018..... $61.75

FAA/PMA'd. Blank instrument panel for Piper. Replaces Piper P/N 54703-00..... P/N 05-05019..... $51.90



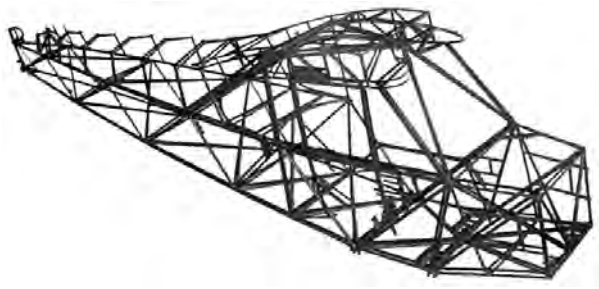
TORQUE LINK REPAIR KITS FOR PIPER AIRCRAFT

Torque Link Repair Kits for Piper Aircraft. Solves many wheel shimmy problems. Save up to 60%.

Features: • Convenient kits replace all common wear torque link components. • Fits most prop driven Piper aircraft. • Contains all FAA approved parts and standard hardware. • Save time and money! No more research and ordering of individual parts.

SEE WWW.AIRCRAFTSPRUCE.COM FOR APPLICATION CHART AND PRICING.

J-3 FUSELAGE



FAA/PMA'd. Replacement fuselage for the J-3 Piper Cub. Fully welded fuselage with 4130 steel tubes. Includes a finished welded birdcage and turtle deck formers. Allow 12-14 weeks lead time for completion of this fuselage Truck shipment and crating charges are quoted when fuselage is completed. Replaces Piper P/N 24096-00

P/N 05-05080.....$11,995.00

J-3 HARNESS KITS

	Front $169.95	Rear $193.95
Black	13-00913-1	13-00914-1
Navy	13-00913-2	13-00914-2
Brown	13-00913-3	13-00914-3
Royal Blue	13-00913-4	13-00914-4
Red	13-00913-5	13-00914-5
Tan	13-00913-6	13-00914-6
Olive Green	13-00913-7	13-00914-7
Silver Gray	13-00913-8	13-00914-8

PIPER FLIGHT CONTROL CABLE KITS

It is a tedious and time consuming job to research the part manuals for all of the cables required for a complete aircraft. You not only gain tremendous time savings with McFarlane cable kits, you receive substantial price discounts. All components are fully traceable, high quality, and proof tested.

See our website for a detailed list of kit components.

PCKT200-03 Flight Control Cable Kit.....P/N 05-04629.....$1,900.00
PCKT200-07 Flight Control Cable Kit.....P/N 05-04630.....$1,916.00
PCKT200-04 Flight Control Cable Kit.....P/N 05-04631.....$1,916.00
PCKT200-08 Flight Control Cable Kit.....P/N 05-04632.....$1,931.00
PCKT200T-01 Flight Control Cable Kit .....P/N 05-04633.....$1,582.00
PCKT200T-02 Flight Control Cable Kit .....P/N 05-04634.....$1,597.00
PCKT200T-03 Flight Control Cable Kit .....P/N 05-04635.....$1,566.00
PCKT200T-04 Flight Control Cable Kit .....P/N 05-04636.....$1,582.00
PCKT220T-01 Flight Control Cable Kit .....P/N 05-04637.....$1,576.00

FUEL STRAINER SEALS AND KITS FOR PIPER AIRCRAFT

FAA approved improved fuel strainer seals for Piper aircraft. Many of the new seals feature fuel proof fluorocarbon that won't swell or degrade like the origional Buna N seals. All seals may be purchased seperately, or in convenient kits containing both the upper and lower seal for one fuel strainer.

Model No.	Description	Spruce Part No.	Price
FSP-KT-1	Fuel Gasket Kit	05-06821	$16.99
FSP-KT-2	Fuel Gasket Kit	05-06822	$12.50
FSP-KT-3	Fuel Gasket Kit	05-06823	$13.85
FSP-KT-4	Fuel Gasket Kit	05-06824	$9.90
MC751-882	Gasket, Upper Seal	05-06825	$6.50
MC753-205	Gasket, Lower Seal	05-06826	$10.95
MC757-255	O-Ring, Upper Seal	05-06827	$6.50
MC751-898	Gasket, Lower Seal	05-06828	$8.60
CA751-871	Gasket, Fuel Strainer	05-06829	$10.50
MS29513-008	O-Ring	05-00126	$0.24
MS29513-043	O-Ring	05-06830	$13.50

(FAA/PMA APPROVED)

PIPER NOSE COWLING
(ALL METAL)

PA 20-22

PA 18

J-3 & PA-11

Description	P/N	Price
PA-11, For cowls using screws	05-07295	$925.00
PA-11, For cowls using Lion fasteners	05-07305	$1,015.00
J-3 Eyebrow baffle LH	05-00061	$434.00
J-3 Eyebrow baffle RH	05-00062	$434.00
Front piece for Top cowl	05-00063	$340.00
Top cowl for J-3	05-00064	$598.00
Bottom cowl for Continental powered J-3	05-00065	$818.00
Front piece for bottom cowl	05-00066	$397.00
Fuselage cowl	05-00067	$598.00
Top cowl for PA-11	05-00068	$135.75
Bottom cowl for PA-11	05-00069	$289.95
Side cowl for PA-11LH	05-00071	$284.95
Side cowl for PA-11 RH	05-00072	$284.95

PA-12

Bottom cowl	05-00078	$227.95
Top cowl	05-00079	$136.75
Fuselage cowl	05-00081	$910.00
Left side cowl	05-00082	$310.00
Right side cowl	05-00083	$310.00

PA-12 & 14

Nose cowl for all serial numbers	05-07310	$909.00

PA-18 (95 HP)

PA-18, For cowls using screws	05-07295	$925.00
PA-18, For cowls using Lion fasteners	05-07305	$1,015.00
Left side cowl, used w/shielded ignition lead	05-00073	$421.00
Right side cowl, used w/shielded ignition lead	05-00074	$438.00
Top cowl	05-00075	$113.75
Bottom cowl	05-00076	$314.00
Bottom cowl, installed w/machine screws	05-00077	$216.95

PA-18 - 105, 125, 135, 150 HP

Fuselage cowl, S/N 2168-5938,105,125,135HP	05-00089	$1,046.00
Fuselage cowl, S/N 5939-8019, 135, 150 HP	05-00091	$1,060.00
Fuselage cowl, S/N 8020 and up, 150 HP	05-00092	$977.00
PA-18-105 thru 125 HP, no starter hole	05-07315	$905.00
PA-18-105 thru 125 HP, with starter hole	05-07320	$860.00
PA-18-135 & 150 HP, w/starter hole & oil scoop	05-07325	$1,665.00
PA-18-135 & 150 HP, w/oil scoop, no starter hole	05-07330	$1,088.00
Top cowl, 105 HP	05-00093	$260.95
Top cowl, 125, 135, 150 HP	05-00094	$217.95
Left side cowl, 105 HP	05-00095	$404.00
Right side cowl, 105 HP	05-00096	$404.00
Left side cowl, 125, 135, 150 HP	05-00097	$478.00
Right side cowl, 125, 135, 150 HP	05-00098	$478.00
Lower cowl ass'y, 135 HP, S/N 3014 thru 4617	05-00099	$799.00
Lower cowl ass'y, 150 HP, S/N 3771 thru 6963	05-00101	$915.00
Lower cowl ass'y, 150 HP, S/N 6964 and up	05-00102	$915.00

PA-20 & PA-22

PA-22-108, S/N 8000 & up, w/o oil scoop	05-07345	$1,324.00
PA-20 Nose cowl, 115 HP	05-07335	$1,040.00
PA-22 Nose cowl, S/N 1 thru 533	05-07335	$1,040.00
PA-20 Nose cowl, 135 HP	05-07340	$1,071.00
PA-20 Bottom cowl, 125 HP	05-00049	$1,101.00
PA-20 Bottom cowl, 135 HP	05-00051	$798.00
PA-22 Bottom cowl, 125 HP, S/N 1 – 353	05-00052	$1,099.00
PA-22 Bottom cowl, 125 HP, S/N 354 – 533	05-00053	$1,084.00
PA-22 Bottom cowl, 125 HP, S/N 534 – 1759	05-00054	$1,251.00
PA-22 Bottom cowl,135-160HP,S/N 1760–7630	05-00055	$1,774.00
PA-22(Colt) Bottom cowl, 108HP,S/N 8000 &up	05-00056	$1,778.00
PA-22 Left side cowl	05-00057	$262.95
PA-22 Right side cowl	05-00058	$436.00
PA-20/22 Top center cowl	05-00059	$239.95
PA-25 Pawnee Nose cowl, 150 HP	05-07340	$1,071.00

ONE PIECE STAMPED ALUMINUM RIBS
(STC APPROVED)

These durable ribs are direct replacements for the original style "Truss" type ribs originally used by Piper. These ribs are designed for the various modes of Piper including J-3 and PA-18 with metal spars. The ribs listed are the more commonly requested ribs for this series.

Description	Part No.	Replaces	Price
Nose Rib	05-07365	12662-002	$26.50
Nose Rib, Tip L/H	05-07370	16192-000	$25.50
Nose Rib, Tip R/H	05-07375	16192-001	$26.50
Full Rib	05-07380	13052-002	$130.75
Full Butt Rib, L/H	05-07385	10634-000	$112.75
Full Butt Rib, R/H	05-07390	10634-008	$114.75
Full Tank Bay Rib, L/H	05-07395	10653-000	$99.75
Full Tank Bay Rib, R/H	05-07405	10653-006	$110.95
Full I.B. Ail. Bay, L/H	05-07410	13042-000	$112.75
Full I.B. Ail. Bay, R/H	05-07415	13042-001	$101.75
Full O.B. Ail. Bay, L/H	05-07420	12902-000	$94.75
Full O.B. Ail. Bay, R/H	05-07425	12902-001	$106.85
3/4 Rib	05-07430	13022-002	$96.75
3/4 Butt Rib, L/H	05-02396	10634-005	$152.99
3/4 Butt Rib, R/H	05-07440	10634-007	$114.99
3/4 Tank Bay Rib	05-02397	10635-002	$96.75

STABILIZER LINER TUBE

Forward Link Assembly Liner Tube
(U86062-080) ..... P/N 05-07450 ..... $91.75
Rear Liner Tube
(U86062-079) ..... P/N 05-07455 ..... $61.75

STABILIZER YOKE & ADJUSTMENT SCREW

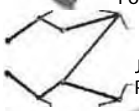
Yoke ..... P/N 05-07465 ..... $222.95
Adjustment Screw ..... P/N 05-07470 ..... $83.75

CA452-538 PIPER STABILATOR BEARING

CA452-538 Piper stabilator bearing
P/N 05-04626 ..... $542.00

WING NAVIGATION LIGHT BRACKET

For use with Grimes Model "E" Type Light or equivalent.....
P/N 05-07460 ..... $81.75



ENGINE MOUNTS

J-3 Continental Mount ..... P/N 05-00873 ..... 758.00
PA-11 Mount ..... P/N 05-00874 ..... $643.00

J-3, PA-11, PA-18

Left Gear, uncovered ..... P/N 05-07350 ..... $561.00
Right Gear, uncovered ..... P/N 05-07355 ..... $559.00

PIPER PA28/32/34 GLARESHIELDS

These beautiful new Glareshields are designed for the Piper models PA28, PA32 and PA34. The new Glareshield is made of FAA approved temperature stable Lexan covered with sound proofing foam and a new non-glare vinyl that looks like leather. With a 3 inch eyebrow over the instrument panel, it not only adds beauty to your plane but also improves forward visibility. The new Glareshield is easy to install and comes with all hardware and detailed instructions.

(Piper PA28) ..... P/N 05-02221 ..... $299.00
(Piper PA32 & 34) ..... P/N 05-02222 ..... $329.00
(Piper C Model) ..... P/N 05-02223 ..... $362.00

PIPER HEATER TEMPERATURE CONTROL LOCK

For years Piper PA28 and PA32 owners have been plagued with a Heater Temperature Control that will not stay positioned. This Heater Temperature Control Lock that can be installed in minutes and provides a positive adjustable lock for the Heater Control Lever.

P/N 08-04939 ..... $81.75

AP

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

(FAA/PMA APPROVED)

SPINNER ASSEMBLIES & COMPONENTS

Short Spinner Assembly for Piper
Models PA-12, PA-16, PA-18, PA-20 & PA-22 with O-235 or O-290 engines with AM series Sensenich propellers.

Spinner Dome ..... P/N 05-07670 ..... $280.95
Front Plate ..... P/N 05-07675 ..... $125.75
Back Plate ..... P/N 05-07680 ..... $105.85
Complete Assembly ..... P/N 05-07685 ..... $482.00

PA-25 Spinner Components
Assembly for Fixed Pitch Propellers serial numbers 2986-3691

Back Plate ..... P/N 05-07695 ..... $159.90
Front Plate ..... P/N 05-07705 ..... $127.75
Complete Assembly ..... P/N 05-07710 ..... $565.00

Spinner Components for 235 hp. with FA8452 McCauley Propeller.

Dome Only ..... P/N 05-07715 ..... $404.00
Back Plate ..... P/N 05-07720 ..... $218.95
Front Plate ..... P/N 05-07725 ..... $183.75

Spinner Assembly for PA-18/18A, 150 hp.For Dm Series Propellers.

Spinner Dome ..... P/N 05-07730 ..... $292.95
Front Plate ..... P/N 05-07735 ..... $130.75
Back Plate ..... P/N 05-07740 ..... $177.75
Complete Assembly ..... P/N 05-07745 ..... $525.00

RIB KITS FOR PIPERS

Description	P/N	Price
J3 RIB KIT (LH)	05-02373	$1,403.00
J3 RIB KIT (RH)	05-02374	$1,326.00
PA18-150 RIB KIT (LH)	05-02375	$1,584.00
PA18-150 RIB KIT (RH)	05-02376	$1,592.00

INDIVIDUAL RIBS FOR PIPERS

J-3

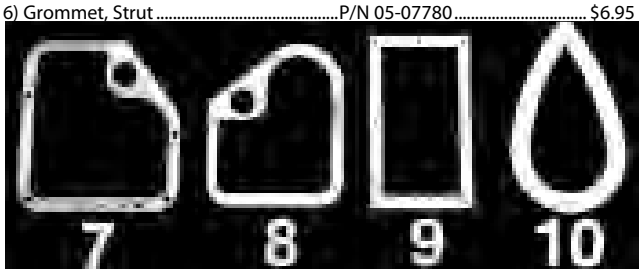
Piper#	Our P/N	Description	Price	# Per Wing
10742-002	05-02407	Tip Rib, LH #13	$108.90	1
10742-003	05-02394	Tip Rib, RH #13	$116.75	1
12662-002	05-02389	Nose Rib	$24.99	10
12902-000	05-02387	Outboard Aileron Bay Rib, LH #12	$107.90	1
12902-001	05-02393	Outboard Aileron Bay Rib, RH #12	$109.90	1
13022-002	05-02386	3/4 Rib, #10 and #11	$92.75	2
13022-002	05-02383	3/4 Rib, LH or RH #7	$103.80	1
13022-002	05-02384	3/4 Rib, LH or RH #8	$87.75	1
13022-005	05-02382	3/4 Rib. LH or RH #6	$94.75	1
13022-006	05-02385	3/4 Rib, #9 at strut point	$112.99	1
13042-000	05-02381	Inborad Aileron Bay Rib, LH #5	$116.75	1
13042-001	05-02392	Inboard Aileron Bay Rib, RH #5	$114.99	1
13052-002	05-02379	Full Rib, LH or RH #2	$111.75	1
13052-002	05-02380	Full Rib, #3 and #4	$106.75	2
13052-004	05-02378	Butt Rib, LH #1	$106.85	1
13052-004	05-02391	Butt Rib, RH #1	$127.75	1
15712-000	05-02390	Nose Rib at strut point	$35.50	1
16192-000	05-02377	Tip Nose Rib, LH	$28.50	1
16192-001	05-02395	Tip Nose Rib, RH	$39.50	1

PA-18 150 HP.

Piper#	Our P/N	Description	Price	# Per Wing
10634-005	05-02396	Butt Rib, LH #1	$152.99	1
10634-007	05-02404	Butt Rib, RH #1	$116.75	1
10635-002	05-02397	Tank Bay Rib, #2 and #3	$91.75	2
10653-002	05-02398	3/4 Rib, LH #4	$91.75	1
10653-005	05-02405	3/4 Rib, RH #4	$89.75	1
10742-002	05-02407	Tip Rib, LH #16	$108.90	1
10742-003	05-02394	Tip Rip, RH #16	$87.75	1
12662-002	05-02389	Nose Rib	$24.99	10
12902-000	05-02387	Outboard Aileron Bay Rib, LH #15	$107.90	1
12902-001	05-02393	Outboard Aileron Bay Rib, RH #15	$103.80	1
13022-002	05-02386	3/4 Rib, #10, #13 and #14	$92.75	3
13022-009	05-02385	3/4 Rib, LH or RH, #11	$112.99	1
13022-010	05-02403	3/4 Rib, LH or RH, #8	$80.75	1
13022-011	05-02386	3/4 Rib, LH or RH, #9 and #12	$92.75	2
13042-002	05-02402	3/4 Rib, LH #7	$80.75	1
13042-003	05-04857	3/4 Rib RH #7	$89.75	1
13042-003	05-04587	3/4 Rib, RH #7	$11.80	1
13052-007	05-02399	3/4 Rib, LH or RH, #5	$90.75	1
13052-009	05-02406	3/4 Rib, RH #6	$94.75	1
13052-010	05-02401	3/4 Rib, LH #6	$94.75	1
15712-000	05-02390	Nose Rib at strut point	$35.50	1
16192-000	05-02377	Tip Nose Rib, LH	$28.50	1
6192-001	05-02393	Tip Nose Rib, RH	$109.90	1

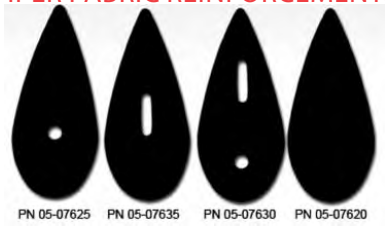
COMMON PIPER GROMMETS

1) Grommet, Tail ..... P/N 05-07750 ..... $10.75
2) Grommet ..... P/N 05-07755 ..... $15.50
3) Grommet ..... P/N 05-07765 ..... $4.35
4) Grommet ..... P/N 05-07770 ..... $4.95
5) Grommet, Inspection Plate (original Piper type: 80122-49)
P/N 05-07775 ..... $7.50
6) Grommet, Strut ..... P/N 05-07780 ..... $6.95



7) Grommet, Tail (used on PA-25 and later PA-18's)
P/N 05-07785 ..... $27.50
8) Grommet, Tail ..... P/N 05-07790 ..... $9.50
9) Grommet, Cover ..... P/N 05-07795 ..... $10.75
10) Grommet, Pulley Cover ..... P/N 05-07800 ..... $9.70

PIPER FABRIC REINFORCEMENTS



Model	Deminsion	Part No.	Price
U60863-005	2"W x 4-1/2"L	05-07625	$6.25
U60863-003	2"W x 4-1/2"L	05-07635	$2.40
U60863-002	2"W x 4-1/2"L	05-07630	$2.75
U60481-000	2"W x 4-1/2"L	05-07620	$4.55
U60863-009	2"W x 2-1/2"L	05-07640	$5.50

J-3 FUEL VALVE

This J-3 fuel valve includes a steel handle for use with the original pushpull shut off control. this valve is a significant improvement over the original brass style fuel valve. The new valve has a stainless steel ball seated in an inert composite seat. This improved design eliminates the stiff operation and leaking around the shaft that the original design was prone to. PMA approved. P/N 05-00848 ..... $146.80

J-3/PA-11 THROTTLE CONTROL

FAA approved replacement throttle control.
P/N 05-03397 ..... $395.00

FLEXIBLE RUBBER BRAKE LINE

From brake master cylinder to copper lines on gear vee.
P/N 05-07530 ..... $125.75

OIL PRESSURE HOSE

P/N 05-07360 ..... $107.90

WING TIP BOWS

Preformed wooden wing tip bows for use in all Piper Aircraft Models J-3 to PA-22. It is recommended to soak the wing tip bows in water before installation to avoid breakage. P/N 02-18500 ..... $39.55/ea.
Note: Wing tip bows can be shipped via UPS with an oversized package rate equal to the 30 Lb. rate.

AP

HEAVY DUTY MUFFLER

Heavy Duty Muffler STC/PMA
P/N 05-03475 .....$915.00

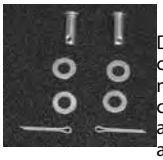
PRE-HEAT SHROUD PA-18

Pre-heat shroud PA-18 STC/PMA
P/N 05-03457 $243.95

HEADER TANKS

Front: 05-03468 Rear: 05-03469 PA-18, PA-19 STC
Heater Tanks - Front .....05-03468 ..... $404.00
Heater tanks - Rear.....05-03469 ..... $372.00

PIPER DOOR HINGE CLEVIS PINS



Due to normal wear and lack of lube, the door hinge clevis pins should be replaced from time to time to maintain the proper operation of the doors. The set includes 2 clevis pins, 2 thick washers, 2 thin washers, and 2 cotter keys. All the hardware is FAA approved for all Piper aircraft. P/N 05-03633 ..... $11.50

PIPER DOOR HINGE EYEBOLT SET

The eyebolts are probably the most neglected parts on the plane. They hardly ever get lubricated and due to their exposure to the elements, rust in the pivot point can prevent the door from closing properly and should be replaced from time to time as they wear. The set contains two of the proper eyebolts and detailed installation instructions. The hardware is FAA approved for all Piper aircraft.
Rear Door ..... P/N 05-03636 ..... $39.99
Front Door ..... P/N 05-03635 ..... $38.50

FOLDING JUMP SEATS

Folding Jump Seats - 170, 172, 172S, 175, 180, 180K, 182, 182R, 185, A185F STC/PMA

Description	Part No.	Price
Folding Jump Seats - right hand pair	05-03470	$2,218.95
Folding Jump Seats left & right hand pair	05-03472	$2,841.00

FOLDING FRONT SEAT KIT

Folding Front Seat Kit STC
P/N 05-03474 .....$356.00

SEAT TRACK TIE DOWN

Seat Track Tie Downs - Aircraft equipped with Cessna or McFarlane Seat rails.
P/N 05-03467 .....$117.75

BUSHING WITH RETAINING RING FOR PIPER AIRCRAFT

05-04476

05-01764

COWL BUSHING R-RING MC69790-00 - Material that outlasts the original nylon or glass filled teflon materials. Used on most Piper Cherokee models. Includes the retaining ring (snap ring) . P/N 05-01764.....$16.90
COWL PLATE ASSEMBLY MC69791-000 - Stainless steel mounting plate with MC69790-00 teflon glass bushing and MC484-840 retaining ring. Upper cowl retaining part for most Piper Cherokee models.
P/N 05-04476.....$32.75

PIPER DOOR LATCH CLEVIS PIN

Restore solid latching of the doors to the fuselage Due to normal wear and lack of lube, the door latch clevis pin should be replaced from time to time to maintain the proper operation of the door. The set includes 1 clevis pin and 1 cotter key. All the hardware is FAA approved for all Piper aircraft. P/N 05-04644.....$6.90

PIPER ENGINE BAFFLES

See www.aircraftspruce.com for part numbers and prices.

PIPER CABIN DOOR AND OVERHEAD TRIM REPLACEMENT HANDLES

Door Replacement Handles

Overhead Trim Replacement Handles

Piper no longer produces the trim handle, and an estimated 10% of 31,000 Pipers on the registry which utilize their handles. The OEM handles are a very weak link in the entire door assembly. Everything downstream of the handle is pretty secure. Therefore, they have improved the handle and are STC'd and PMA'd for certified aircraft. Please call or visit our website for model eligibility. Each replacement handle is sold as a complete assembly and everything required to complete the installation.
Piper Cabin Door Replacement Handle ..... P/N 05-04550 ..... $325.00
Piper overhead Trim Replacement Handle ..... P/N 05-04551 ..... $326.00

VENTED FUEL CAPS

Vented Fuel Caps J3 thru PA-22 STC .....
P/N 05-03459 $87.75

180HP FUEL CAP

180 Fuel Cap PA-12 thru PA-18 with 180HP Engine.
P/N 05-03458 ..... $126.75

UNDER SEAT BATTERY RACK

Under Seat Battery Rack PA 18 STC
P/N 05-03460 ..... $428.00

REFUELING STEP

Refueling Step J3 thru PA-22 STC. Note: Priced and sold each. Image is for reference only. Does not come as a pair.
P/N 05-03462 ..... $116.75

MAIN LANDING GEAR LONG STEP

Main landing gear Long Step J3 thru PA-19 STC
P/N 05-03461 .....$292.95

WELD ON AIRCRAFT FLOAT FITTINGS

Weld on aircrat float fittings PA-12, -14, PN 05-03476 PA-18 PN 05-03477 STC
Float Fittings PA-12/14
P/N 05-03476..... $912.00
Float Fittings PA-18
P/N 05-03477..... $568.00

MAIN LANDING GEAR SAFETY CABLES

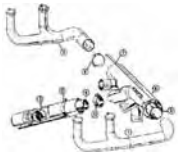
Main Landing Gear Safety Cables (All STC)

Standard Gear J-3, PA-11, PA-18, PA-19..... PN 05-03463 ..... $233.95
3" Extension Gear ..... PN 05-03464 ..... $239.95
Standard Gear PA-12, PA-14..... PN 05-03465 ..... $252.95
3" Extended Gear PA-12, PA-14..... PN 05-03466 ..... $293.95

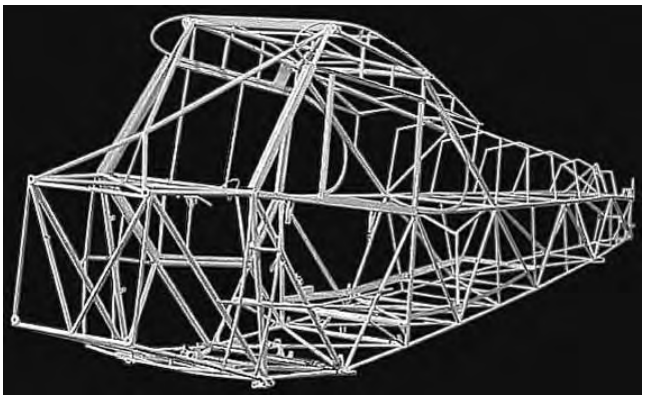
AILERON HINGE FOR PIPER

Piper Eligibility PA-28-140,-150, -160, -180, -235; PA-28R-180,-200,-201,-201T; PA-28-181, -236, -201T; PA-28-181,-236, -201T; PA-32-260, -300; PA-32R-300; PA-32-RT-300, -300T; PA-34-200 P/N 05-04197 .....$97.85 ea.

PIPER J3 EXHAUST SYSTEM



New Manufactured, FAA/PMA Approved, Stainless Steel Original Design, Exhaust Headers and Muffler with Safety Bail already installed.
1-Left exhaust stack ..... P/N 05-07475 ..... $535.00
2- Right exhaust stack ..... P/N 05-07480 ..... $569.00
3- Muffler assy, less shroud ..... P/N 05-07485 ..... $659.00
4- Tailpipe..... P/N 05-07490 ..... $203.95
5- Tailpipe Shroud..... P/N 05-07495 ..... $193.75
6- Muffler Shroud ..... P/N 05-07505 ..... $370.00
7- Slide Clip..... P/N 05-07510 ..... $40.75
8- Muffler stack connecting clamp (2 req.) ..... P/N 05-07515 ..... $28.50
9- Tailpipe brace clamp..... P/N 05-07520 ..... $33.60
10- Muffler clamp ..... P/N 05-07525 ..... $20.95



COMPLETE SUPERCUB FUSELAGE

Replacement fuselage for the PA 18 Supercub incorporating the latest improvements and mods. The fuselage tubes and fittings are all 4130 steel and the standard mods are: "X" reinforcement in the top deck, extended baggage with "dog leg" bulkhead reversed, standard baggage area increased to 180 lbs. capacity, removable rear seat bar, reinforcement sleeves under stabilizer attach bracket, modernized tabs and attach brackets. Completely FAA approved under PMA and STC. Excellent workmanship.

P/N 05-00466 ..... $15,376.00

Shipped freight collect from factory in Alaska.
Add $500 crate fee.

PA18 UPPER DOOR

Constructed using all square tubing. FAA approved.
P/N 05-00459 ..... $557.00

PA18 LOWER DOOR

Latching mechanism greatly improved over original. Utilizes push rods instead of wires. Powder coated.
P/N 05-00460 ..... $566.00

PA18 STABILIZER

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00461 ..... $560.00

PA18 ELEVATOR

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00462 ..... $557.00

PA18 RUDDER

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00463 ..... $429.00

PA18 VERTICAL FIN

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00464 ..... $374.00
$10 crate charge for all items above

PA18 TAILPOST

Bushings installed, powder coated and ready to cover. FAA-PMA approved.
P/N 05-00465 ..... $109.95

FLAP HINGE-OUTBOARD

For fabric wing piper models, powder coated. FAA-PMA approved.
P/N 05-00480 ..... $55.75

PA 18 FUSELAGE HANDLE

Oversized lifting handle can be used with winter gloves, 8" long with 2" clearance. Weld on, FAA-PMA approved.
P/N 05-00477 ..... $55.85

AILERON HINGE

For fabric wing piper models. Powder coated. FAA-PMA approved.
P/N 05-00478 ..... $56.90

PA-18 8.5' SPAR BLANK

P/N 05-03596 ..... $65.75

SEALED LIFT STRUTS
WITH HEAVY DUTY FORKS

FAA-PMA - complies with all A.D.'s - high strength struts will not fail under wind or snow loads. $20 CRATE CHARGE FOR LIFT STRUTS

Description	Part Number	Price
PA 18 Front Lift Strut	05-00485	$523.00
PA 18 Heavy Duty Rear Lift Strut	05-00486	$586.00
PA 12-14 Front Lift Strut	05-00487	$577.00
PA 12-14 High Strength Rear Lift Strut	05-00488	$534.00
PA18 Rear Lift Strut	05-03868	$540.00
J-3 Front Strut	05-04931	$599.00
J-3 Rear Strut	05-04932	$599.00

PA18 ARCHES FOR FABRIC FORMERS

Complete set of 6 "turtle deck" arches precut to correct size, weld on as is. FAA-PMA
P/N 04-00469 ..... per set $265.95

PA 18 WING FITTINGS

Weld on, FAA-PMA approved.
Front left side ..... P/N 05-00470 ..... $76.75
Front right side ..... P/N 05-00471 ..... $76.75
Rear left side ..... P/N 05-00472 ..... $32.50
Rear right side ..... P/N 05-00473 ..... $34.50

PA 18 REAR GEAR FITTING

Weld on, FAA-PMA approved.
Left side ..... P/N 05-00474 ..... $164.99
Right side ..... P/N 05-00475 ..... $171.90

PA 18 FRONT GEAR FITTING

Weld on, FAA-PMA approved. Fits right or left side.
P/N 05-00476 ..... $150.75

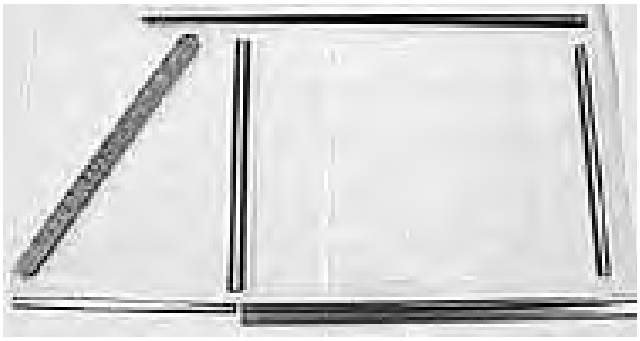
WELD-ON FLOAT FITTING

Weld-on float fitting for all models Piper Supercub, PA18. FAA approved by STC. Weighs less than similar fittings. $622.00 for a pair.
P/N 05-02529 ..... $622.00

PA-18 125 135 150 EXHAUST SYSTEM

PA-18 Exhaust Systems - FAA/PMA Approved
PA-18 125, 135, 150 hp. Exhaust System

Description	Part No.	Price
Muffler and Shroud Assy. (Pictured)	05-07560	$1,601.00
Muffler Clamp, SN 1-3013 (2 Req.)	05-07515	$28.50
Muffler Clamp, SN 3014 and up (2 Req.)	05-07570	$28.50
Muffler Shroud 150HP.	05-07585	$362.00
Front Shroud Assy.	05-07590	$200.75
Front Cylinders Stack Assy.	05-07595	$660.00
Rear Cylinders Stack Assy.	05-07605	$675.00
Clip (for 12436-000/-010)	05-07610	$35.50
Clip (for 14239-000)	05-07615	$34.50



FRONT LOWER WINDOW CHANNEL
Left Side ..... FAA-PMA ..... P/N 05-00491 ..... $18.90

AFT LOWER WINDOW CHANNEL
Left Side ..... FAA-PMA ..... P/N 05-00492 ..... $69.85

FRONT WINDOW CHANNEL
Left Side ..... FAA-PMA ..... P/N 05-00493 ..... $49.75

UPPER WINDOW FORMER
Left Side ..... FAA-PMA ..... P/N 05-00494 ..... $50.75

FORWARD VERTICAL WINDOW CHANNEL
Left Side ..... FAA-PMA ..... P/N 05-00495 ..... $27.50

AFT VERTICAL WINDOW CHANNEL
Left Side ..... FAA-PMA ..... P/N 05-00496 ..... $17.50

ADDITIONAL FAA-PMA PARTS FOR PA18 SUPERCUB

Description	Part No.	Price
Piper hinge - half	05-00510	$16.50
Interior tab	05-00511	$4.95
Pulley bracket	05-00512	$13.50
Pulley bracket	05-00513	$13.50
Forward elevator pulley half	05-00514	$22.50
Flap lever hinge - weld on fuselage or seat	05-00516	$29.50
Shock strut	05-00518	$119.75
fuel selector bracket	05-00520	$23.99
Tailspring bracket	05-00521	$33.50
Tailspring mount pad - forward	05-00522	$33.50
Aileron pulley bracket	05-00523	$9.50
Floorboard tabs	05-00524	$8.60
Floorboard tabs	05-00525	$5.85
Cabane Vee	05-00526	$258.95
Elevator horn	05-00530	$29.50
Rudder horn blank	05-00531	$45.90
RH rudder pedal assy.	05-00532	$144.75
LH rudder pedal assy.	05-00533	$151.75
RH brake pedal assy.	05-00534	$150.95
LH brake pedal assy.	05-00535	$154.99
3/8" U Channel - 6' Lengths	05-04564	$8.95
Exhaust stack rear - PA18 150 hp	05-00543	$659.00
Muffler assy. - PA18 150 hp	05-00544	$698.00

PA18 LANDING GEAR
Specify right or left side.
11/4 axle, heavy duty; FAA-PMA
P/N 05-00489 ..... $555.00
11/2 axle, heavy duty; FAA-PMA
P/N 05-00490 ..... $557.00
EXTENDED LANDING GEAR AVAILABLE – CALL FOR QUOTE!

REAR TORQUE TUBE SUPPORT & BEARING
Weld on; FAA-PMA ..... P/N 05-00497 ..... $165.75

FRONT TORQUE TUBE SUPPORT & BEARING
Weld on; FAA-PMA ..... P/N 05-00498 ..... $201.95

HEAVY DUTY 5/8 LIFT STRUT FORK
Rolled threads, stainless, heat treated.
P/N 05-00501 ..... $114.99

TOP DECK SUPERSTRUCTURE
P/N 05-00502 ..... $545.00
Add $30 crate charge

JACK SCREW TOWER
P/N 05-00503 ..... $244.95
$20 CRATE FEE

MUFFLER BAIL U452-093
Muffler Bail Welded inside muffler out let to guard against Flame Tube failure and obstruction of exhaust outlet.
P/N 05-02150 ..... $38.50

TAIL REPAIR SECTION - 4'
Without Jack screw tower.
P/N 05-00504 ..... $1,759.00
With Jack screw tower
P/N 05-00505 ..... $1,116.00
$20 CRATE FEE

FUEL QUANTITY TRANSMITTER FOR PIPER AIRCRAFT
McFarlane fuel quantity transmitters are a direct replacements for originally installed Stewart Warner type fuel quantity transmitters. Eliminates the need for expensive transmitter conversion kits that require replacement of fuel gauges and wiring. These transmitters are engineered to be compatible with the original fuel quantity gauge and wiring which uses time proven technology and reliability.
Each transmitter is manufactured using the new Stewart Warner "thick film ceramic" resistor technology. The benefits are longer life and increased accuracy. All components are thoroughly tested to ensure reliable operation.
NOTE: Does NOT include screw/seal assembly or gasket (see accessories to order seperatly).
MC68101-02 kit ..... P/N 05-04874 ..... $282.95
Accessories - See our website for application information.
Transmitter MC68101-02 ..... P/N 05-04870 ..... $253.95
Gasket MC461-931 ..... P/N 05-04871 ..... $11.50
GA Gasket SKET MC462-021 ..... P/N 05-04872 ..... $9.50
Screw Seal Assy. MC1802 ..... P/N 05-04873 ..... $3.95

LUSCOMBE PARTS

(FAA/PMA APPROVED)

LUSCOMBE 8E & 8F EXHAUST STACKS

Left Hand Exhaust Stack ..... P/N 05-07805 ..... $581.00
Right Hand Exhaust Stack ..... P/N 05-07810 ..... $589.00

LUSCOMBE CABIN HEAT SHROUD

8E & 8F AND 8A-2pc Stacks ..... P/N 05-07820 ..... $274.95

CARBURETOR & CABIN HEAT SHROUD

For Luscombe 8A ..... P/N 05-08115 ..... $353.00

RUDDER & ELEVATOR HINGE PIN & BRACKET

Hinge Pin ..... P/N 05-07825 ..... $27.50
Hinge Pin Bracket ..... P/N 05-07830 ..... $21.99

GAS CAP & LANDING LIGHT LENS

Luscombe Gas Cap ..... P/N 05-07835 ..... $121.75
Landing Light Lens ..... P/N 05-07840 ..... $43.85
Landing Light Lens ..... P/N 05-07845 ..... $45.50

VERTICAL FIN FRONT ATTACH

Fitting P/N 05-07985 ..... $193.75

Note: This fitting is welded 4130 steel and complies with all provisions of A.D. 79-25-05. This fitting is required only on those Luscombes with the "round tip" vertical stabilizer.

TAILWHEEL LEAF SPRINGS

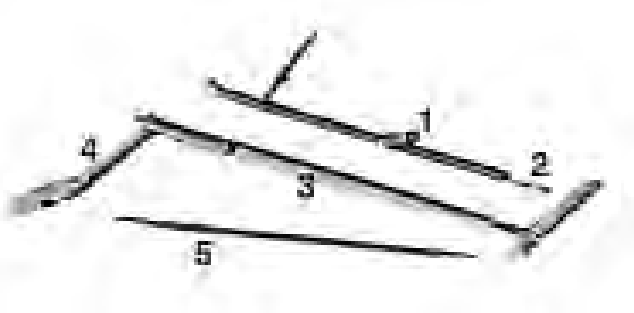
Complete Assembly ..... P/N 06-14600 ..... $192.75
Main Leaf Only ..... P/N 06-14700 ..... $49.75

ALL-ALUMINUM LANDING GEAR FAIRING
FOR STANDARD GEAR

Left ..... P/N 05-07865 ..... $181.75
Right ..... P/N 05-07870 ..... $181.75

For Silflex Gear
Left ..... P/N 05-07875 ..... $240.95
Right ..... P/N 05-07880 ..... $240.95

FAA/PMA LANDING GEAR PARTS
(FOR STANDARD GEARS)



Left Hand Jack Strut (1) ..... P/N 05-07885 ..... $462.00
Right Hand Jack Strut (1) ..... P/N 05-07890 ..... $458.00
Fork End (S-9) (2) ..... P/N 05-07895 ..... $60.75
Left Hand Lower Leg (3) ..... P/N 05-07900 ..... $831.00
Right Hand Lower Leg (3) ..... P/N 05-07905 ..... $825.00
Left Hand Upper Arm (4) ..... P/N 05-07910 ..... $1,015.00
Right Hand Upper Arm (4) ..... P/N 05-07915 ..... $1,098.00
Tie Rod without fittings, 361/4" long (5) ..... P/N 05-07920 ..... $353.00
Left Hand Jack Strut (Silflex) ..... P/N 05-07930 ..... $537.00

FAA/PMA WING PARTS

Left hand aileron ..... P/N 05-00452 ..... $2,384.00
Right hand aileron ..... P/N 05-00453 ..... $2,628.00
Left hand lift strut (metal wing) ..... P/N 05-00454 ..... $1,609.00
Right hand lift strut (metal wing) ..... P/N 05-00455 ..... $1,705.00
Carry-thru spar (front or rear) ..... P/N 05-00456 ..... $360.00

FAA/PMA TAIL SECTION PARTS

Fin, square tip ..... P/N 05-07940 ..... $1,727.00
Rudder, square tip ..... P/N 05-07945 ..... $1,100.00
Rudder Horn for square tip rudder ..... P/N 05-07950 ..... $77.75
Tailwheel Leaf Spring Assembly ..... P/N 06-14600 ..... $192.75
Main Leaf only ..... P/N 06-14700 ..... $49.75
Rudder & Elevator Hinge Pin ..... P/N 05-07970 ..... $27.50
Rudder & Elevator Hinge Pin Bracket ..... P/N 05-07975 ..... $19.50

AP

LUSCOMBE PARTS

(FAA/PMA APPROVED)

AP

ALL ALUMINUM COWLING

Nose Cowl	P/N 05-07990	$1,140.00
Bottom Cowl	P/N 05-07995	$677.00
Top Cowl	P/N 05-08000	$350.00
L/H Cowl	P/N 05-08005	$127.75
R/H Cowl	P/N 05-08010	$127.75

Note: Cowling is trimmed oversize requiring a finish trim for each individual airplane.

FIREWALL DISHPAN

Used on Luscombe with an electrical system.

P/N 05-08015 ..... $416.00

FIREWALL TO ENGINE MOUNT RUBBER BUSHING

6 ea. required per aircraft.

P/N 05-08020 ..... $36.50

LUSCOMBE ENGINE MOUNT

For all Continental powered Luscombe, A-65 thru C-90

P/N 05-08025 ..... $1,325.00

MANUALS

8A Owner's Manual	P/N 13-00230	$4.75
8E Owner's Manual	P/N 13-00235	$4.95
8 Series Master Parts List, illustrated	P/N 13-00240	$19.90
Service Manual, early fabric wings	P/N 13-00245	$11.75

BLANK INSTRUMENT PANEL

P/N 05-08030 ..... $418.00

CONTROL CABLES
(GALVANIZED)

Brake Cable Assembly	P/N 05-08035	$80.75
Elevator Cable, SN 1-4199	P/N 05-08040	$119.75
Elevator Cable, SN 4200 and up	P/N 05-08045	$127.75
Left Hand Rudder Cable	P/N 05-08050	$110.95
Right Hand Rudder Cable	P/N 05-08055	$110.95
Stick to Aileron Cable	P/N 05-08065	$122.75
Left Hand or Right Hand Aileron Balance Cable. 16 ft., 7/8 in.	P/N 05-08070	$98.75
Left Hand or Right Hand Aileron Balance Cable. 15 ft., 10-3/4 in.	P/N 05-08075	$93.75
Forward Trim Cable	P/N 05-08080	$105.85
Aft Trim Cable Assembly (2 req'd)	P/N 05-08085	$94.80

8A EXHAUST COMPONENTS
FITS ALL A-65 CONTINENTAL ENGINES

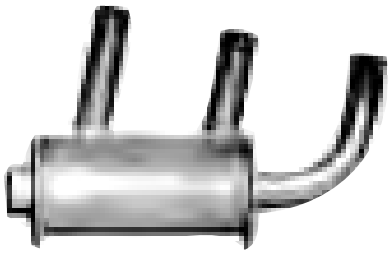
Rear Crossover	P/N 05-08090	$222.95
Left Hand Stack	P/N 05-08095	$197.85
Right Hand Stack	P/N 05-08100	$198.85
Exhaust Clamp	P/N 05-08105	$45.80
Complete Assembly (includes 2 exhaust clamps)	P/N 05-08110	$508.00

LUSCOMBE 8A CARBURETOR & CABIN HEAT SHROUD

Fits on U8627-5 Stack ..... P/N 05-08115 ..... $353.00

(TYPE CERTIFICATE APPROVED)

EXHAUST SYSTEM



Muffler
SN 1-3109 ..... P/N 05-08120 ..... $762.00
SN 3110 and up ..... P/N 05-08125 ..... $822.00

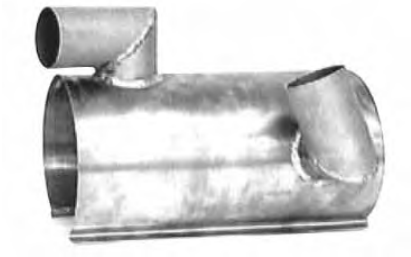
Perforated Tube
SN 1-3109 ..... P/N 05-08130 ..... $210.95

Perforated Tube
SN 3110 and up ..... P/N 05-08135 ..... $204.95

Tailpipe, Left Hand
SN 112-3109 ..... P/N 05-08140 ..... $277.95
SN 3110 and up ..... P/N 05-08145 ..... $272.95

Tailpipe, Right Hand
SN 112-3109 ..... P/N 05-08150 ..... $294.95
SN 3110 and up ..... P/N 05-08155 ..... $257.95

HEAT SHROUDS



Carb. Heat Shroud ..... P/N 05-08165 ..... $356.00
Cabin Heat Shroud, For SN 744 & up ..... P/N 05-08170 ..... $264.95
Shroud Clip ..... P/N 05-08175 ..... $53.85

COMPLETE SPINNER ASSEMBLIES

READY FOR INSTALLATION FOR STINSON WITH WOOD OR METAL PROPELLERS.

Wood Propeller Spinner Assembly ..... P/N 05-08180 ..... $509.00
Metal Propeller Spinner Assembly ..... P/N 05-08185 ..... $597.00

CUFF AIR INDUCT

For 108, 108-1, 108-2, 150 hp. (SN 1-2249)
P/N 05-08190 ..... $133.75
For 108-2, 108-3, 165 hp. (SN 1-2249)
P/N 05-08195 ..... $135.75

FUEL GAUGE & SENDER

DIRECT REPLACEMENT FOR ORIGINAL AC GAUGE AND SENDER

Gauge ..... P/N 05-08200 ..... $170.85
Sender ..... P/N 05-08205 ..... $292.95

RUDDER ARM

P/N 05-08210 ..... $121.75

CARBURETOR AIR FILTER

For Franklin 150-165 hp. Stinson 108 Series ..... P/N 05-08215 ..... $76.75

Leading Edge Slat for all 108 Series ..... P/N 05-08220 ..... $360.00
Leading Light Lens ..... P/N 05-08225 ..... $57.90

STINSON MANUALS

108 Series Parts Catalog
P/N 05-08230 ..... $21.50
General Service Manual
P/N 05-08235 ..... $40.50
Service Bulletins and Letters
P/N 05-08240 ..... $23.50
Stinson Specs, ADs and STCs
P/N 05-08245 ..... $9.70
108 CAA Operating Limits
P/N 05-08250 ..... $5.50
108-1 CAA Operating Limits
P/N 05-08255 ..... $6.99
108-2 CAA Operating Limits
P/N 05-08265 ..... $5.50
108-3 CAA Operating Limits ..... P/N 05-08270 ..... $5.70
108-1 Owner's Manual ..... P/N 05-08275 ..... $12.50
108-2 Owner's Manual ..... P/N 05-08280 ..... $13.50
108-3 Owner's Manual ..... P/N 05-08285 ..... $13.50
108-1 Seaplane Operating Limits ..... P/N 05-08290 ..... $4.99
108-2 Seaplane Operating Limits ..... P/N 05-08295 ..... $4.99
108-3 Seaplane Operating Limits ..... P/N 05-08300 ..... $6.50
108 Ski-Plane Supplement ..... P/N 05-08305 ..... $1.90
108-1 Ski-Plane Supplement ..... P/N 05-08310 ..... $1.69
Appendix A Supplement ..... P/N 05-08315 ..... $1.62
Stinson Story of Aircraft Progress ..... P/N 05-08320 ..... $17.90
Stinson Time-Speed-Distance Computer ..... P/N 05-08325 ..... $11.50
Stinson Computer Instructions ..... P/N 05-08330 ..... $6.50

STINSON LOGO PATCH

2-1/2" x 3", ready to be ironed or sewn on.
P/N 14-00148 ..... $3.85

AP

(TYPE CERTIFICATE APPROVED)

ALUMINUM NOSE COWL

Applicable to 108 through 108-3 series Stinsons.

Nose Cowl	P/N 05-08335	$958.00
Bottom Cowl	P/N 05-00086	$1,672.00
Left side Cowl	P/N 05-00087	$754.00
Right side Cowl	P/N 05-00088	$755.00

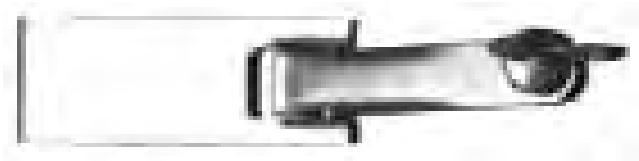
LANDING GEAR FAIRINGS

Left Fairing	P/N 05-08340	$230.95
Right Fairing	P/N 05-08345	$242.95

FUSELAGE TO LANDING GEAR FILLETS

Left	P/N 05-08350	$375.00
Right	P/N 05-08355	$375.00

ENGINE COWL LEVER ASSEMBLY



Cowl Fastener Assembly	P/N 05-08365	$75.75
Cowl Fastener Pin	P/N 05-08370	$1.12
Cowl Fastener Receptacle	P/N 05-08375	$3.70
Receptacle Cup	P/N 05-08380	$24.99

WING LIFT STRUTS

Front Strut	P/N 05-08385	$1,058.00
Rear Strut	P/N 05-08390	$1,050.00

LANDING LIGHT LENS

P/N 05-08225 ..... $57.90

PITOT TUBE

P/N 05-08395 ..... $242.95

CONTROL SURFACE BEARING

P/N 05-08400 ..... $24.99

CONTROL CABLES

Description	No. Req'd	P/N	Price
Aileron Idler Cable	2	P/N 05-08405	$96.75
Aileron Control Cable	2	P/N 05-08410	$87.75
Flap Control Cable	2	P/N 05-08415	$80.75
Rudder Cable—1946, 1947	2	P/N 05-08420	$96.90
Rudder Cable, 1948	2	P/N 05-08425	$124.75
Aileron Idler Cable (in fuselage)	1	P/N 05-08430	$52.90
Control Column Cable, Left Half	1	P/N 05-08435	$113.99
Control Column Cable, Right Half	1	P/N 05-08440	$105.75
"Up" Elevator Cable	1	P/N 05-08445	$78.75
"Down" Elevator Cable	1	P/N 05-08450	$78.75
Upper Flap Control Cable (in fuselage)	1	P/N 05-08455	$73.75
Elevator Tab Control Cable, SN 1 thru 2249	1	P/N 05-08465	$74.75
Elevator Tab Control Cable, SN 2250 and up	1	P/N 05-08470	$85.75
Rudder Trim Cable, SN 2250 and up	2	P/N 05-08475	$47.70
Rudder Trim Driver Cable, SN 2250 and up	1	P/N 05-08480	$67.75

STRUT FILLETS

Rear Lift Strut Upper Fillet

Left	P/N 05-08485	$145.85 ea.
Right	P/N 05-08490	$131.75 ea.

Forward Lift Strut Upper Fillet

Left	P/N 05-08495	$68.75 ea.
Right	P/N 05-08500	$64.75 ea.

Lift Strut, Lower Fillet, left.
P/N 05-08505 ..... $168.75 ea.

Lift Strut, Lower Fillet, right
P/N 05-08510 ..... $168.75 ea.

RIBS

FAA/PMA'd

Description	Models	OEM P/Ns	Part No.	Price
Main Wing Rib	Most 7 &11 Series	5-142	05-06069	$113.75
Main Wing Rib	8GCBC	5-376	05-06123	$105.95
Main Wing Rib	8kcab	5-357L (left)	05-06118	$78.75
		5-357R (right)	05-06117	$49.90
Wing Tip Rib	Most 7 &11 Series	5-143	05-06070	$95.75
Aileron Bay Rib	Most 7 &11 Series	5-181	05-06097	$117.75
Aileron Bay Rib	8KCAB	2-1978L (left)	05-06253	$20.95
		2-1978R (right)	05-05254	$685.00
Aileron Rib Inboard	8GCBC	5-377R (right)	05-06255	$78.99
Aileron Bay Rib	8GCBC	5-374	05-06122	$129.95
		5-375	05-06256	$68.99
Aileron Flap Rib - Inside	Most 7, 8 & 11 Series	3-445	05-06257	$19.50
Aileron Flap Rib - End	Most 7, 8 & 11 Series	3-446	05-06258	$33.25
Flap Bay Rib	8GCBC	5-373	05-06259	$68.99
Flap Bay Support Rib	8GCBC	5-378 (left)	05-06260	$78.99
		5-378 (right)	05-06261	$78.99
Rib Tank Trailing Edge	7EC, 7FC, 7KC, 7ECA, 7GC, 7HC, 7KC, 7GCA, 7ECA, 7GCAA, 7KCAB	3-1183	05-05769	$44.60
Nose Rib, Tank Area	7ECA, 7GCBC, 7GCAA, 7KCAB, 8GCBC	3-1516	05-05802	$46.75
Wing Tip Ribs w/Strip	7EC thru 7KCAB	4-1030 (left)	05-05876	$217.95
		4-1030 (right)	05-05877	$249.95
Aileron and Flap Rib	Most 7, 8 & 11 Series	3-445	05-06257	$19.50
Rib - Trailing Tank Area	8KCAB	4-1527	05-06262	$26.55
Butt Rib	8KCAB	5-365 (left)	05-06119	$206.95
		5-365 (right)	05-06120	$240.95
Butt Rib	Most 7 & 11 Series	7-445L (left)	05-06169	$126.90
		7-445R (right)	05-06170	$126.90
Rib Assy. Butt Rib (wing with wing tank)	Most 7 & 11 Series	7-791L (left)	05-06220	$212.95
		7-791R (right)	05-06221	$212.95
Rib Replacement Sections for 5-142				
Rear Section	Most 7 &11 Series	5-185-1	05-06098	$35.50
Nose Section	Most 7 &11 Series	5-185-2	05-06099	$45.50
Rear Section, w/support, same as 5-185-1, includes 1-8875 support	Most 7 &11 Series	5-185-5	05-06101	$86.75

Other Aeronca ribs are available. Please call for availability and price for your specific needs!

RIB COMPONENTS

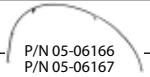
FAA/PMA'd

Description	Models	OEM P/Ns	Part No.	Price
Rib Reinforcement - Flap Bay	7GCB, 7GCBA, 7GCBC	2-1590 (left)	05-06263	$15.80
		2-1590 (right)	05-06264	$15.80
		2-1591 (left)	05-06265	$15.80
		2-1591 (right)	05-06266	$15.80
Rib Reinforcement - Flap Inboard Forward	7GCB, 7GCBA, 7GCBC	2-1598	05-06267	$16.90
Rib Reinforcement - Flap Inboard Aft	7GCB, 7GCBA, 7GCBC	2-1599	05-06268	$15.50
Rib Stiffener	Most 7 & 11 Series	2-699	05-05691	$28.85
Wing Tip Rib Strip	Most 7EC & up Series	4-1030-1	05-05874	$10.50
Wing Tip Rib Angle	Most 7EC & up Series	4-1030-2	05-05875	$5.00

WING TIPS

FAA/PMA'd

Description	Models	OEM P/Ns	Part No.	Price
Wing Tips - Fiberglass	8KCAB	7-1506L (left)	05-06269	$128.99
		7-1506R (right)	05-06165	$133.95
Wing Tips - Fiberglass	7EC, 7GC, 7GCA, 7FC, 7HC,7JC, 7GCB, 7GCBC, 7KC, 7ECA, 7GCAA	5-267L (left)	05-06270	$214.95
Wing Tips - Fiberglass	8GCBC	7-1480L (left)	05-06271	$198.99
		7-1480R (right)	05-06164	$295.95
Wing Tip Bow - Metal	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 11AC, 11B, 11C	7-440L (left)	05-06166	$224.95
		7-440R (right)	05-06167	$299.95



Note on Model Eligibility: We have made every effort possible to detail installation eligibility for Aeronca parts based upon the best information we have available. If you are uncertain as to whether a specific OEM part number may be installed on your aircraft, you must consult either your aircraft owner or service manuals, or check with your mechanic. We do not warrant that models listed in the catalog are accurate in all instances. Please call us if you have questions about specific part numbers and model eligibility and we can research your question prior to your order.

AERONCA/BELLANCA REPLACEMENT PARTS

WOOD WING SPARS, FITTINGS & COMPONENTS ALL FAA/PMA'D

For wood spar A.D. inspection use our 18" or 36" ProVision Fiber Optic Scopes.

Description	Models	OEM P/Ns	Part No.	Price
Front Spar L/R Rear Spar L/R	7AC, 7B, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7ACA, 11AC, 11B, 11C (Spars are used with metal wingtip bow only)	5-146L (left front)	05-06071	$992.00
		5-146R (right front)	05-06072	$992.00
		5-147L (left rear)	05-06073	$964.00
		5-147R (right rear)	05-06074	$964.00
Front Spar L/R Rear Spar L/R	7EC, 7FC, 7GC, 7GCA, 7HC, 7KCAB 7ECA, 7KC, 7GCAA (Spars are used with fiberglass wingtip only)	5-262L (left front)	05-06105	$992.00
		5-262R (right front)	05-06106	$992.00
		5-263L (left rear)	05-06107	$964.00
		5-263R (right rear)	05-06108	$964.00
Rear Spar L/R Front Spar L/R	7HC, 7GCB, 7GCBC	5-270L (left rear)	05-06111	$964.00
		5-270R (right rear)	05-06112	$964.00
		5-271L (left front)	05-06113	$992.00
		5-271R (right front)	05-06114	$992.00
Front Spar Strut Attach Fitting	All Models Except 8KCAB	2-892	05-05741	$37.50
Front Spar Attach Fitting	8KCAB	2-1969	05-06272	$44.95
Front Spar Root Fitting	8KCAB	1-9878	05-06273	$17.70
Rear Spar Root Fitting	All Models	2-703	05-05695	$124.95
Wing Root Drag Wire Lug	Most 7, 8, & 11 Series	1-2299	05-05389	$26.75
Wood Spar Nails	All Models	114	05-06274	$23.00 /lb.

* Pricing and availability of spars is highly dependent upon price and availability of Sitka Spruce. Please call for current prices and delivery lead time.

P/N 05-06128

LIFT STRUTS AND FITTINGS FAA/PMA'D

P/N 05-06109

Lift Struts are sealed and made of high quality 4130N Streamline Tubing, not mild steel.

Lift Struts	7A, 7ACA, 7B, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7JC, 7KC, 7KCAB	5-392 (front)	05-06128	$728.00
		5-268 (rear)	05-06109	$517.00
Lift Struts	11A, 11B, 11C	5-162 (front)	05-06083	$849.00
		5-160 (rear)	05-06082	$603.00
Strut Fork	All Models	1-2543	05-06275	$72.85
Rear Strut Upper Fitting	All Models Except 8KCAB	1-2335-1	05-05402	$29.50
Front Strut Attach Fitting	All Models Except 8KCAB	2-892	05-05741	$37.50
Strut Attach Fitting	8KCAB	2-1976	05-06276	$338.00
Strut Attach Fitting	All Models Except 8KCAB	2-893	05-05742	$163.95

JURY STRUTS & COMPONENTS FAA/PMA'D

Jury Strut Spreader	All 7 Series	1-2286 (spreader)	05-05386	$61.50
Jury Strut Spreader	8GCBC	1-10359 (spreader)	05-06277	$32.60
Jury Strut Spreader	8KCAB	1-10106 (spreader)	05-06278	$43.50
		1-10358 (rear)	05-06280	$43.90
Jury Strut Spreader	11A, 11AC	1-2461 (spreader)	05-05449	$57.75
Jam Nut (Code 5)		AN316-8R	AN316-8R	$0.44

LEADING EDGES ALL FAA/PMA'D

Leading Edges P/N 05-05984	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCAA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, 7ACA, 7KC, 11AC, 11B, 11C	4-548-1 (inside)	05-05974	$53.75
		4-548-2 (inside middle)	05-05975	$52.85
		4-548-3 (outside middle)	05-05976	$45.75
		4-548-4 (outside)	05-05977	$39.90
		7-556L (tip)	05-06212	$60.75
		7-556R (tip)	05-06213	$61.85
Leading Edge Skin - Wing	7GCBC S/N 899-76 & UP, 8GCBC S/N 191-76 & UP	4-548-17R	05-05984	$42.00
Leading Edge Stiffener	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCBC, 7HC, 7KC	1-10000-2	05-05334	$29.85
Leading Edge Stiffener	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC	4-1678-1	05-05961	$65.50
		4-1678-2	05-06281	$23.99
		4-1678-3	05-06282	$32.50
Leading Edge Stiffener	8KCAB	4-1519-1	05-06283	$18.75
		4-1519-2	05-06284	$24.50
Leading Edge Skin - Stall Warning	7GCBC 7ECA, 7GCAA, 7KCAB 8GCBC	4-1679-1	05-06285	$54.50
		4-1679-2	05-06286	$39.65
		4-1679-3	05-05962	$66.75
Leading Edge Skin - Tip	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA	4-1123L	05-05882	$39.75
		4-1123R	05-05883	$39.75
Leading Edge Skin - Outboard	8KCAB	4-1517-1	05-05934	$61.25
Leading Edge Skin - Middle	8KCAB	4-1517-2 (right)	05-05935	$66.25
		4-1517-5 (left)	05-05936	$47.50
Leading Edge - Inboard	8KCAB	4-1737L (left)	05-05968	$89.50
		4-1737R (right)	05-05969	$89.50

TRAILING EDGES ALL FAA/PMA'D

Wing Trailing Edge	8KCAB	2-1977	05-06287	$21.85
Wing Trailing Edge	7ACA, 7ECA, 7GCAA, 7KCAB, 7GCBC, 8KCAB	2-1915	05-05651	$43.50
Wing Trailing Edge	7ACA, 7BCM, 7CCM, 7DC, 7EC, 7FC 7GC, 7HC, 7GCBA, 7ECA, 7GCAA	3-515	05-05836	$55.90
Wing Trailing Edge	7AC, 11AC	3-515-1	05-05837	$46.60
Wing Trailing Edge	8GCBC	2-2085	05-05669	$22.25
Flap Bay - Trailing Edge	7GCB, 7GCBA, 7GCBC, 8GCBC	4-1092 (right)	05-06288	$120.95
		4-1092 (left)	05-06289	$120.95
Aileron Trailing Edge	All Models	3-542	05-05851	$39.60
Channel Aileron Bay Trailing Edge	8KCAB	2-1979	05-06290	$17.75
Aileron Bay Trailing Edge	All Models Except 8KCAB	5-175R (right)	05-06093	$100.95
		5-175L (left)	05-06092	$100.95
Trailing Edge Flap Bay Cover	7GCB, 7GCBA, 7GCBC (41-1/8")	2-1594-1 (right)	05-05625	$53.00
		2-1594-1 (left)	05-05626	$53.00
Trailing Edge Flap Bay Cover	7GCB, 7GCBA, 7GCBC (41.88")	2-1594-2 (right)	05-05627	$53.00
		2-1594-2 (left)	05-05628	$53.00
1" Trailing Edge Material(longest length available is 7 feet)		1870	05-06291	$4.50 / ft.

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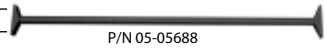
OTHER WING COMPONENTS - ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Drag Wire	Most 7, 8 and 11 Series	1-2527-1	05-05459	$38.00
Drag Wire	Most 7, 8 and 11 Series	1-2527-2	05-06292	$25.50
Drag Wire	Most 7, 8 and 11 Series	1-2595-1	05-05480	$83.50
Drag Wire	Most 7, 8 and 11 Series	1-2595-2	05-05481	$83.50
Wing Root Drag Wire Lug	Most 7, 8 and 11 Series	1-2299	05-05389	$26.75
Wing Compression Strut	All Models except 8KCAB	2-694	05-05688	$111.95
Flap Hinge Inboard-Left	7GCB, 7GCBA, 7GCBC, 8GCBC	1-9015L (left)	05-06293	$97.75
Flap Hinge Inboard-Right	7GCB, 7GCBA, 7GCBC, 8GCBC	1-9015R (right)	05-06294	$97.75
Flap Fairing-Lower	7GCBC, 8GCBC	1-9803	05-06295	$14.25
Gap Cover	8KCAB	3-1448R (right)	05-05798	$56.75
		3-1448L (left)	05-05797	$56.75
Gap Cover	8KCAB	4-1553R (right)	05-05945	$60.75
		4-1553L (left)	05-05944	$60.75
Front Wing Gap Cover	Most 7 Series	3-451L (left)	05-05820	$34.50
Front Wing Gap Cover	Most 7 Series	3-451R (right)	05-05821	$32.90
Top Rear Wing Gap Cover	Most 7 Series	3-453L (left)	05-05823	$24.00
Top Rear Wing Gap Cover	Most 7 Series	3-453 R (right)	05-05824	$22.95
Top Center Wing Gap Cover	Most 7 Series	3-452	05-05822	$23.50
Bottom Rear Wing Gap Cover	Most 7 Series	3-454L (left)	05-05825	$24.70
Bottom Rear Wing Gap Cover	Most 7 Series	3-454R (right)	05-05826	$21.80
Bottom Center Wing Gap Cover	Most 7 Series	3-455	05-05827	$18.85
Inspection Cover Assy.	Most 7, 8 & 11Series	3-639	05-05868	$34.75
Airspeed Pitot Head	Most 7 & 11 Series	3-535	05-05845	$189.50
Spacer Aileron Sector and Hinge	7A, 7ACA, 7B, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB, 8KCAB, 8GCBC, 11A, 11B, 11C	1-2576	05-05470	$8.60
Aileron Spar	Most 7 Series	5-157	05-06079	$64.85
Aileron Control and Balance Cable	7AC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7HC, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-2339	05-05404	$59.50
Cabin Aileron Control Cable	Same as 1-2339	1-2397	05-05728	$50.50
Aileron Balance	Most 7, 8 & 11 Series	5-179R (right)	05-06096	$93.50
		5-179L (left)	05-06095	$93.50
Fairlead-Aileron Balance Cable	All Models	1-2396	05-05427	$26.50
Pulley - Aileron Control	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB	1-10309	05-05348	$49.50
Spacer - Aileron Sector & Hinge Bracket	Most 7, 8, & 11 Series	1-2576	05-05470	$8.60
Bearing - Aileron Sector	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	B65PS	05-06296	$6.65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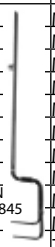
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P/N 05-05348

INSTRUMENT PANELS - ALL FAA/PMA'D

P/N 05-05914

P/N 05-06007

P/N 05-06075

P/N 05-06127

Description	Models	OEM P/Ns	Part No.	Price
Instrument Panel blank no holes	7AC, 7BCM, 7CCM, 7DC	5-150	05-06075	$93.75
Instrument Panel	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	4-1428	05-05914	$87.90
Interior Panel Left Front	7A, 7BCM, 7B, 7CCM, 7DC	4-608	05-06007	$97.25
Instrument Panel	7ECA, 7GCAA, 7GCBC, 8KCAB, 8GCBC	5-390	05-06127	$114.95
Lower Instrument Control Panel	7ECA, 7GCAA, 7GCBC, 8KCAB, 8GCBC	4-1734	05-05967	$58.80
Radio Panel	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	2-1919-1	05-05652	$58.75
Electrical Panel Blank	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	4-1363	05-05885	$43.70

DOOR COMPONENTS - ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Fiberglass Door	7EC, 7FC, 7GC, 7HC, 7GCA, 7GCB, 7GCBA, 7KC	7-1084-1	05-06298	$497.00
Fiberglass Door	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	7-1265	05-06144	$604.00
Upper Door or Window Handle Assy. *Meets AN, MS, NAS, or MIL-Spec	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB,	C602-6222916A	05-06299	$48.60
Photo Door Frame	8GCBC	7-1457-1 (window)	05-06157	$299.95
		7-1457-2 (lower)	05-06158	$342.95
Door Hinge	7A, 7BCM, 7CCM, 7DC, 7EC	1-2423	05-05439	$22.65
Cabin Door Latch	7AC, 7BCM, 7CCM, 7DC, 7EC, 15AC	1-2594	05-05479	$77.75
Cabin Door Stop Assy.	All models except 8KCAB	1-3514	05-05529	$37.50
Clamp	All models except 8KCAB	1-3514-1	05-05530	$7.50
Tube	All models except 8KCAB	1-3514-2	05-05531	$8.00
Brace Assembly Door Latch	All 7 Series & 8KCAB	2-1451	05-05615	$69.50
Wood Spacer	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	7-1265-6	05-06145	$9.75
Door Moulding	7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB	1-9927	05-05597	$32.00

P/N 05-06144

P/N 05-06157

P/N 05-06158

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WINDOWS, WINDOW SETS & SKYLIGHTS - ALL FAA/PMA'D

FAA/PMA'd. Factory fresh, free from distortion. Manufacturer guarantees their windows and skylights to be optically perfect and free from defects. Please specify year, model and serial number of your aircraft when ordering. Many out-of-date aircraft have been modified and measurements included with the order will help alleviate any problems if your aircraft is not standard. Check or charge card number must accompany order. Orders are noncancellable and nonreturnable. All windows and skylights available in green or grey tint at additional 20% charge. Windows and skylights requiring a Certificate of Authenticity for export have an additional $80.00 charge. Windows and skylights, Shipped FOB factory. Prepayment required.

Description	Models	LP Aero P/N	OEM P/Ns	Cat. No.	Price
Left Front Sliding Window Forward (clear)	Most 7 Series	231	3-572 (replaces 3-469, window only)	05-02783	$37.50
Left Front Sliding Window Rearward (clear)	Most 7 Series	232	3-573 (replaces 3-470, window only)	05-02784	$34.90
Rear Window (Left or Right) (clear)	Most 7 Series	233	7-463	05-02785	$52.75
Right Front Door Window (clear)	Most 7 Series	234	7-538	05-06406	$45.50
Right Door Window Bubbled	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	291	4-1446	05-02821 (clear)	$104.90
				05-06409 (green)	$126.75
Left Rear Bubbled Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	290	7-1256-L	05-06411 (clear)	$110.75
Right Rear Bubbled Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	289	7-1256-R	05-02820 (clear)	$110.75
Left Front Swinging Bubbled Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC	297	4-1487	05-06438 (clear)	$103.95
				05-06439 (green)	$124.75
				05-06440 (gray)	$124.75
Left or Right Door - Front Sliding Window (clear)	11AC, 11BC, 11CC, S11AC, S11BA, S11CC	225	4-715	05-06441	$45.00
Left or Right Door - Rear Sliding Window (clear)	11AC, 11BC, 11CC, S11AC, S11BA, S11CC	226	4-714	05-06444	$34.50
Left or Right Rear Window (clear)	11AC, 11BC, 11CC, S11AC, S11BA, S11CC	227	4-594	05-06447	$38.65
Left Front Pilot Window (clear)	14-19-3A, 17-30, 17-30A, 17-31A, 17-31ATC (Viking)	816	196940-1	05-06450	$160.75

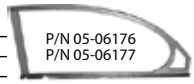
SKYLIGHT

Skylight	7ACA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, 8KCAB	288	7-1286	05-02818 (clear)	$138.85
				05-02819 (green)	$138.85

WINDOW SETS

Window Set - Includes one each right and left rear bubble windows, right door bubble window, left front swinging bubble window	289, 290, 291 & 297	05-06464	$346.95
Window Set - Includes one each left front sliding window fwd., left front sliding window rwd. right and left rear bubble window and right door bubble	231, 232, 289, 290 & 291	05-06465	$345.00

WINDOW & WINDSHIELD FRAMES & COMPONENTS



Rear Window Frame	7AC, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCB, 7HC	7-461 (right)	05-06176	$212.95
		7-461 (left)	05-06177	$218.95
Rear Window Sill Strip (wood)	7AC, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB	2-786	05-05723	$19.50
Transom Window Frame	All 7 Series Models	2-822	05-05731	$19.50
Retainer - Left Side Windshield	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GCAA, 7GCBA, 7GCBC, 7KCAB	3-473	05-05831	$32.00
Retainer - Right Side Windshield	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GCAA, 7GCBA, 7GCBC, 7KCAB	3-474R (right)	05-05832	$20.65
Retainer - Right Side Windshield	7GCAA, 7GCBC	3-474-1R (right)	05-06301	$11.50
Retainer Windshield - Top	7AC, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA	3-549	05-05854	$16.50
Retainer Windshield -Pair - Windshield to Wraparound	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7HC	7-487	05-06194	$84.75/pr.
Rear Window Channel - Bottom	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1875R (right)	05-05635	$42.00
		2-1875L (left)	05-05634	$42.00
Rear Window Channel - Top	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1876R (right)	05-05637	$47.75
		2-1876L (left)	05-05636	$47.75
Rear Window Channel - Aft	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-9919R (right)	05-06302	$14.50
		1-9919L (left)	05-06303	$14.50
Top Window Aft Edge Strip	7BCM, 7CCM, 7EC, 7FC, 7GC, 7GCA, 7GCB, 9GCBA, 7HC	4-656	05-06018	$21.00
Moulding - Rear Window Upper	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1877R (right)	05-06304	$19.50
		2-1877L (left)	05-06305	$19.50
		2-1877-1R (right)	05-06306	$19.50
		2-1877-1L (left)	05-06307	$19.50
Retainer Windshield -Side - Windshield to Wraparound	7ECA, 7GCAC, 7GCAA, 8KCAB	3-474-2R	05-06308	$23.25
		3-474-2L	05-06309	$14.50
Retainer - Right Side Windshield to Wraparound (bottom)	7ACA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	4-1369R (right)	05-05887	$67.75
		4-1369L (left)	05-05886	$67.75
Left Front Window Frame	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	7-1318	05-06310	$223.95
Retainer Windshield -Top - Windshield to Greenhouse	7ACA, 7ECA, 7GCAA, 7GCBA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1880	05-05638	$26.00
		2-1880-1	05-05639	$26.50
Top Window Support Assy.	7ECA, 7GCAA, 7KCAB, 7GCBC, 8GCBC	3-1396	05-05787	$131.95
Top Window Support Assy.	7BCM, 7CCM, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA	3-585	05-05859	$156.75
U Rubber Channel	Meets AN, MS, NAS, or MIL-Spec	CH-35	05-02200	$1.35
Hinge for Left Side Window	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	1-9872	05-05595	$19.50
Sliding Window Center Stiffener	Most 7 & 11 Series	1-2417-1	05-05436	$24.75
End Stiffener Left Rear Sliding Window	Most 7 Series	1-2418-1	05-05437	$28.75
End Stiffener Left Front Sliding Window	Most 7 Series	1-2418-2	05-05438	$28.75
Sliding Window Track Moulding Upper (31.37")	Most 7 Series	2-853-1	05-05736	$53.50
Sliding Window Track Moulding Lower (37.43")	Most 7 Series	2-853-2	05-05737	$47.50

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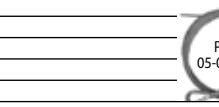
BRAKE COMPONENTS & TOE BRAKE KITS - ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Toe Brake Kit -Gerdes System. Wheels & brakes not included.	7AC, 7ACA, 7BCM, 7CCM, 7EC, 7ECA, 7FC, 7GCBC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7KCAB	4-1624K	05-06311	$2,049.00
Toe Brake Conversion Kit - Converts VanSickle or Goodyear brakes systems to Cleveland wheels and brakes for aircraft with oleo gear only! Includes parts list, three installation drawings and two brake line drawings and two STCs (SA34CH &5A507CH)	7AC, 7BCM, 7CCM, 7EC, 7ECA, 7FC, 7GCBC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7HC, 7KCAB	4-1624OG	05-06312	$4,950.00
Toe Brake Conversion Kit - Converts Gerdes brake system to Cleveland wheels and brakes for aircraft with spring steel gear only! Includes parts list three installation drawing and one STC (SA334CH)	7ACA, 7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB, 8GCBC	4-1624SG	05-06313	$4,231.00
Brake Sys. Cleveland Conv. Kit. Converts mechanical brakes to hydraulic heel brakes with oleo gear only. Includes parts list and installation drawing.	7ACA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, 8KCAB	4-1557K	05-06314	$3,773.00
Heel Brake Conversion Kit - Converts existsing hydraulic heel brakes to hydraulic toe brakes. Does not include new wheels, brake discs, calipers or spacers. Can be used on aircraft with spring steel gear	7ACA, 7ECA, 7GCBC, 7GCAA, 7KCAB 8KCAB, 8GCBC	4-1624K	05-06311	$2,049.00
Master Cylinder Extension	For the above Part No. 4-1557K brake kit.	2-1887	05-05641	$66.75
Rudder Pedals, Toe Brake P/N 05-05809	7ECA, 7GCAA, 7GCBC, 7KCAB, 7ACA, 8KCAB	3-1537-1 (front)	05-05809	$79.50
		3-1537-2L (left rear)	05-05810	$79.50
		3-1537-2R (right rear)	05-05811	$79.85
Brake Torque Plate	7AC, 7BCM, 7CCM, 7EC, 7FC, 7GC, 7HC, 11A, 11BC	1-2258	05-06315	$19.99
Brake Cable	7AC, 7BCM, 7DC, 7EC	1-2358-2	05-05409	$32.70
Eyebolt Brake Cable	11AC	1-2499	05-05457	$34.00
Brake Rod	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	1-9850	05-06316	$27.85
Parking Brake Cable Assembly	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	1-9945-1	05-05592	$10.00
Parking Brake Cable	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	1-9945-2	05-05599	$15.50
Cable Brake Assembly, LH	11A, 11B, 11C	2-7762	05-06317	$52.75
Cable Brake Assembly, RH	11A, 11B, 11C	2-7763	05-06318	$52.75
Parking Brake Balance Beam	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCBA, 7HC, 7JC	2-796	05-05726	$119.95
Tube, Parking Brake Beam	7Ac, 7BCM, 7CCM, 7DC	2-796-1	05-05727	$13.25
Parking Brake Lever Release Plate	All 7 & 11 Series Models	1-2325	05-05396	$25.50
Parking Brake Lever Spring	All 7 & 11 Series Models	1-2519	05-05458	$14.95
Brake Pedal Connecting Rod	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-9911	05-05596	$40.25
Hydraulic Brake Line Assembly	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7ECA, 7GCBC, 7GCAA, 7KCAB, 7KC	1-8966	05-05579	$38.00
Brake Pedal	7A, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KCAB, 8GCBC, 8KCAB	1-2613L	05-06319 (left)	$33.75
		1-2613R	05-06320 (right)	$33.75
Brake Link	7A, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7JC	2-718	05-05703	$74.50
Toe Brake Rudder Pedal	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	3-1534	05-05803	$117.95
Bracket Toe Brake Master Cylinder P/N 05-05807 P/N 05-05806	All 7 & 8 Series Models	3-1536 (right)	05-05807	$76.75
		3-1536 (left)	05-05806	$76.75



OLEO STRUT & COMPONENTS - FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Repair, Oleo Strut Assembly (no bounce) One year Warranty. Allow four to six weeks turnaround.	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7ECA	3-665	05-06321	$710.00
Repair, Oleo Strut Assembly (standard) One year Warranty. Allow four to six weeks turnaround.	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7ECA	3-433	05-06322	$461.00
Oleo Strut Frame	Most 7 & 11 Series	7-1004	05-06133	$495.95
Landing Gear Oleo Frame Cover	7AC, 7BCM, 7CCM, 7DC	4-10000	05-05872	$56.75
Landing Gear Oleo Fairing	7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCBC, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KCAB, 7KC, 11A, 11B & 11C	4-701L	05-06027	$33.50
		4-701R	05-06028	$38.75
Channel - Strut Frame	All 7 & 11 Series	2-673	05-05680	$21.50
Landing Gear Frame Tube	Most 7 & 11 Series	7-1004-1	05-06134	$53.50
Oleo Bushing, Shock Strut	Most 7 & 11 Series	1-2565	05-06323	$49.65
Piston Rod Assembly	7AC, 7BCM, 7CCM, 7DC, 11A, 11B, 11C	1-2255	05-05375	$129.95
Piston Rod	7AC, 7BCM, 7CCM, 7DC, 11A, 11B, 11C	1-2255-1	05-05376	$55.75
Piston Rod Assembly	Most 7 & 11 Series	2-952	05-05758	$221.95
Piston Rod	Most 7 Series	2-952-1	05-05759	$89.50
Oleo Spring for no bounce oleo assembly	7AC,7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCAA, 7GCBC, 7ECA, 7GCAA, 7GCAB, 7KC	3-666	05-06324	$37.50
Oleo Spring	7KC, TA, O-58A, O-58B	1-320	05-05522	$73.50
Landing Gear Oleo Strut, Lower Tube	7AC, 7BCM, 7CCM, 7DC, 11AC, 11B, 11C	1-2253	05-05374	$117.95
Oleo Spring	7AC, 7BCM, 7CCM, 7DC, 11AC, 11B, 11C	1-2256	05-05378	$55.85
Aeronca Tube - Cylinder Assembly	Most 7 & 11 Series	3-668	05-05870	$352.95
Taxi Spring	Most 7 & 11 Series	2-953	05-05760	$68.75
Oleo Packing 12"	Most 7 & 11 Series (need one per strut)	1-2119	05-05373	$22.70
Retainer Oleo Shock Strut Spring	7AC-7DC & 11 Series	1-316	05-06325	$38.85

Note on Model Eligibility: We have made every effort possible to detail installation eligibility for Aeronca parts based upon the best information we have available. If you are uncertain as to whether a specific OEM part number may be installed on your aircraft, you must consult either your aircraft owner or service manuals, or check with your mechanic. We do not warrant that models listed in the catalog are accurate in all instances. Please call us if you have questions about specific part numbers and model eligibility and we can research your question prior to your order.

AERONCA/BELLANCA REPLACEMENT PARTS

FIBERGLASS WHEEL FENDERS & BRACKETS ALL FAA/PMA'D

Description	Model		LH	RH	LH	RH	Price
Fender, LH/RH	7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCB, 7GCAA, 7GCBC,7HC, 7KCAB	P/N 05-06141	7-1141LH	7-1141RH	-	05-06141	$466.95
Plate Cover for 7-1141 LH/RH			2-1640LH	2-1640RH	-	05-06142	$466.95
Fender, LH/RH	7GCBC, 7ECA, 7GCAA, 7KCAB, 8KCAB		7-1301LH	7-1301RH	05-06326	05-06327	$242.95
Wheel Pant Cover for 7-1301 LH/RH			2-1945LH	2-1945RH	05-05654	05-05655	$43.75
Wheel Pant Support Bracket	7EC, 7ECA, 7FC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7GCAA, 7HC, 7KCAB			2-100081	05-05613		$28.55
Wheel Pant Support Tube	7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7KCAB	P/N 05-06327		1-8790	05-05546		$70.25

LANDING GEAR, FAIRINGS & COMPONENTS ALL FAA/PMA'D

Description	Models	OEM #	Part No.	Price
Landing Gear Axle Strut	7AC, 7BCM, 7DC, 11A, 11C	7-807	05-06222	$567.00
Scout Axle	8GCBC	3-1549	05-06328	$156.75
Scout Landing Gear - Left	8GCBC	7-1461L	05-06329	$750.00
Spring Gear Axle	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	3-1600	05-06330	$318.95
Landing Gear Axle Fitting	Most 7 & 11 Series	1-2260	05-05379	$28.75
Axle Upper End Fitting (4" long)	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7GC, 7GCA, 7GCB, 7GCAA, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB	1-9997-1	05-06331	$39.95
Axle Upper End Fitting (6-1/4" long)	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7GC, 7GCA, 7GCB, 7GCAA, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB	1-9997-2	05-06332	$39.95
Landing Gear Axle Strut	7EC w/Mechanical Brakes	7-1062	05-06136	$730.00
Landing Gear Axle Strut	7EC w/Hydraulic Brakes, also 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7KC	7-1080	05-06139	$744.00
Landing Gear Yoke Plate	Most 7 Series	1-2326	05-06333	$28.99
Landing Gear Wheel Retaining Nut	Most 7, 8 & 11 Series	1-706	05-06334	$35.50
Landing Gear Axle Spring	7ECA, 7GCAA, 7GGCBC, 7KCAB, 8KCAB	2-1917	05-06335	$181.75
Axle Tube	7ECA, 7GCAA, 7GGCBC, 7KCAB, 8KCAB	2-1917-1	05-06336	$121.75
Axle Strut Tube	7EC, 7ECA, 7GCAA, 7GCBC, 7HC, 7KCAB	4-1138	05-06337	$429.00
Wheel Pant Axle Nuts	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	2-2145	05-06338	$52.75
Tail Wheel Spring	7ACA, 7EC, 7GC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8KCAB, 8GCBC	2-1525	05-06339	$18.90
Fitting Assembly	7ACA, 7EC, 7FC, 7GCA, 7GCB, 7GCBA, 7GCBC, 7GC, 7HC, 7KC, 7ECA, 7GCAA, 7KCAB, 8KCAB	18854	05-05555	$59.85
Stud Tail Leaf Spring	7ACA, 7EC, 7FC, 7GC, 7GCA, 7GCA, 7HC, 7GCB, 7GBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8KCAB	18854-1	05-05556	$9.50
Fitting	7A, 7ACA, 7B, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8KCAB, 11A, 11B, 11C	1555-1	05-05536	$14.90
Fairing Clip (narrow)	Most 7, 8, & 11 Series	1-2273	05-05381	$7.25
Oleo Packing		1-2119	05-05373	$22.70
Landing Gear Wheel Retaining Nut	7ECA, 7GCBC, 7GCAA, 7KCAB, 8KCAB, 8GCBC	1-10538	05-06340	$38.50
Landing Gear Oleo Strut Piston	7AC, 7BCM, 7CCM, 7DC, 11AC, 11BC	1-318	05-06341	$30.00
Spring Retainer		1-316	05-06342	$18.50

P/N 05-06136
P/N 05-05555
P/N 05-05556
P/N 05-05536
P/N 05-06340

STRINGERS ALL FAA/PMA'D

Requirements for the 7AC Models	# per Aircraft	Style	Length in Inches	OEM P/Ns	Part No.	Price
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	$36.75
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	$36.75
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	$23.50
Stringer	2	Bull Nose	101"	1-2367-2	05-05416	$23.85
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	$38.75
Stringer	2	Bull Nose	144-1/2"	1-2679-1	05-05486	$33.85
Requirements for the 7EC - 7FC Models						
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	$36.75
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	$36.75
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	$23.50
Stringer	2	Mushroom	101"	1-2367-2	05-05416	$23.85
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	$38.75
Stringer	2	Mushroom	125"	1-2679-6	05-05489	$24.70
Requirements for the 7GC, 7GCA, 7GCB, 7HC Models						
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	$36.75
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	$36.75
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	$23.50
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	$38.75
Stringer	2	Mushroom	125"	1-2679-6	05-05486	$33.85
Requirements for the 7ECA, 7GCBC, 7GCAA, 7KCAB Models						
Stringer	3	Bull Nose	80"	1-2367-1	05-05421	$36.75
Stringer	2	Bull Nose	101"	1-2367-2	05-05415	$23.50
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	$36.75
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	$36.75
Stringer	2	Bull Nose	144-1/2"	1-2679-1	05-05486	$33.85
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	$38.75
Requirements for the 8GCBC Model						
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	$38.75
Stringer	2	Bull Nose	80"	1-2367-1	05-05415	$23.50
Stringer	2	Bull Nose	101"	1-2367-2	05-05416	$23.85
Stringer	2	Bull Nose	144-1/2"	1-2679-1	05-05486	$33.85
Add if greenhouse is used	2	Mushroom	111"	1-9992	05-05608	$32.50
Requirements for the 8KCAB Model						
Stringer	2	Mushroom	111"	1-9992	05-05608	$32.50
Stringer	2	Mushroom	103-1/8"	1-2366	05-05414	$38.75
Stringer	3	Bull Nose	80"	1-2367-1	05-05415	$23.50
Stringer	2	Bull Nose	101"	1-2367-2	05-05416	$23.85
Stringer	1	Mushroom	84-11/16"	1-2376-1	05-05421	$36.75
Stringer	1	Mushroom	92-3/16"	1-2376-2	05-05422	$36.75
Requirements for the 11AC Model						
Stringer	2	Mushroom	120"	1-2679-2	05-05486	$33.85
Stringer	1	Bull Nose	132"	1-2367-6	05-05418	$19.50
Stringer	4	Bull Nose	117-1/2"	1-2367-3	05-05417	$29.50
Stringer	2	Bull Nose	103"	2-771	05-05719	$23.90
Stringer	2	Mushroom	113-1/2"	2-772	05-05720	$39.50

Mushroom
P/N 05-05421
P/N 05-05414
P/N 05-05608

Bull Nose
P/N 05-05421
P/N 05-05486

NOTE: Some parts on this page are primed or varnished in accordance to FAA Approved Drawings.

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AIRCRAFT SPRUCE WEST
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AIRCRAFT SPRUCE EAST
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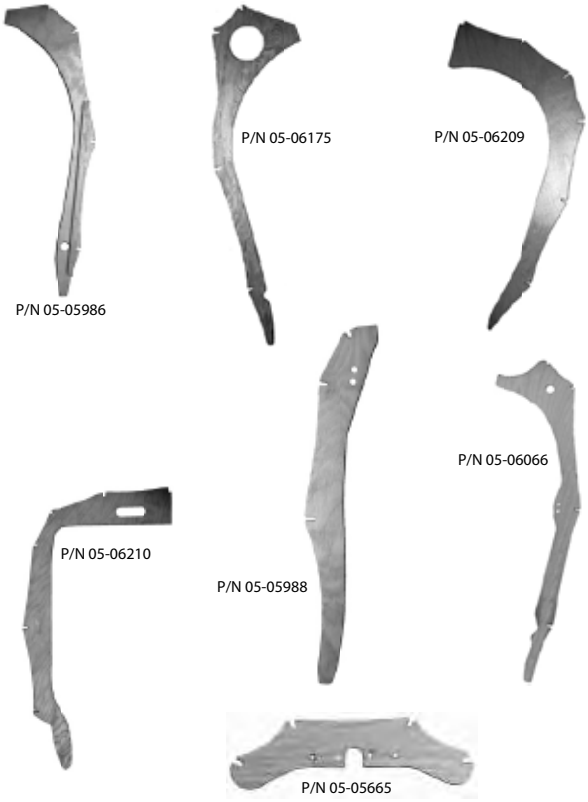
Prices Subject to Change Without Notice

BULKHEADS ALL FAA/PMA'D

Requirements for the 7AC Models	# per Aircraft	OEM P/Ns	Part No.	Price
Bulkhead	2	4-555	05-05986	$42.50
Bulkhead	2	4-556	05-05987	$28.95
Bulkhead	2	4-557	05-05988	$28.60
Bulkhead	2	7-455	05-06175	$48.85
Requirements for the 7EC & 7FC Models				
Bulkhead	2	4-555	05-05986	$42.50
Bulkhead	2	4-556	05-05987	$28.95
Bulkhead	2	4-557	05-05988	$28.60
Bulkhead	2	7-455	05-06175	$48.85
Bulkhead	2	5-393	05-06130	$39.99
Requirements for the 7GC, 7GCA, 7GCB, 7HC Models				
Bulkhead	2	4-556	05-05987	$28.95
Bulkhead	2	4-555	05-05986	$42.50
Bulkhead	2	5-393	05-06130	$39.99
Bulkhead	2	7-455	05-06175	$48.85
Bulkhead	2	4-557	05-05988	$28.60
Requirements for the 7ECA, 7GCAA, 7GCBC, 7KCAB Models				
Bulkhead	2	7-1259	05-06143	$51.80
Bulkhead	2	5-393	05-06130	$39.99
Bulkhead	2	4-555	05-05986	$42.50
Bulkhead	2	4-556	05-05987	$28.95
Bulkhead	2	4-557	05-05988	$28.60
Bulkhead	1	2-2046	05-05665	$25.50
Requirements for the 8GCBC Models				
Bulkhead	2	7-1259	05-06143	$51.80
Bulkhead	2	5-393	05-06130	$39.99
Bulkhead	2	4-555	05-05986	$42.50
Bulkhead	2	4-556	05-05987	$28.95
Bulkhead	2	4-1541	05-06342	$18.50
Bulkhead	1	2-2046	05-05665	$25.50
Requirements for the 8KCAB Models				
Bulkhead	2	7-1259	05-06143	$51.80
Bulkhead	2	5-10000	05-06066	$37.50
Bulkhead	2	4-555	05-05986	$42.50
Bulkhead	2	4-556	05-05987	$28.95
Bulkhead	2	4-1541	05-06342	$18.50
Bulkhead	1	2-2046	05-05665	$25.50
Requirements for the 11AC Models				
Bulkhead	2	4-586	05-05999	$47.95
Bulkhead	2	4-587	05-06001	$31.65
Bulkhead	2	4-589	05-06002	$28.50
Bulkhead	2	7-510	05-06209	$37.60
Bulkhead	2	7-512	05-06210	$48.75



Description	Aircraft Application	OEM #	Part No.	Price
Control Stick Torque Tube	7A, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCAA, 7GCB, 7GCBC, 7KC, 7KCAB, 8KCAB, 11C	2-816	05-05729	$133.95

FLOORBOARDS ALL FAA/PMA'D

Requirements for the 7AC Models	# per Aircraft	OEM P/Ns	Part No.	Price
Floorboard	1	5-158L	05-06080	$89.75
Floorboard	1	5-158R	05-06081	$89.75
Floorboard	1	3-484	05-05833	$66.75
Requirements for the 7EC Models				
Floorboard	1	5-158L	05-06080	$89.75
Floorboard	1	5-158R	05-06081	$89.75
Floorboard	1	4-878	05-06343	$80.00
Requirements for the 7FC Models				
Floorboard	1	5-261L	05-06344	$69.95
Floorboard	1	5-261R	05-06345	$69.95
Floorboard	1	3-484	05-05833	$66.75
Requirements for the 7GC, 7GCA, 7GCB, 7HC Models				
Floorboard, All models	1	4-1032	05-05878	$38.50
Floorboard, 7GC, 7GCA, 7GCB only	1	5-158L	05-06080	$89.75
Floorboard, 7HC only	1	5-261R	05-06345	$69.95
Floorboard, 7GC, 7GCA, 7GCB only	1	5-158R	05-06081	$89.75
Floorboard, 7HC only	1	5-261L	05-06344	$69.95
Requirements for the 7ECa Models				
Floorboard	1	5-296L	05-06115	$79.50
Floorboard	1	5-296R	05-06116	$79.50
Floorboard	1	4-1032	05-05878	$38.50
Floorboard	1	4-1378	05-05891	$68.00
Requirements for the 8GCBC & 8KCAB Models				
Floorboard	1	5-296L	05-06115	$79.50
Floorboard	1	5-296R	05-06116	$79.50
Floorboard	1	4-1032	05-05878	$38.50
Floorboard	1	4-1378	05-05891	$68.00
Floorboard	1	4-1600	05-05946	$60.75
Requirements for the 11AC Models				
Floorboard	1	3-510	05-05835	$52.90
Floorboard	1	3-511	05-06346	$49.85
Floorboard Clamp for all Models EXCEPT 11 Series	-	1-2575	05-05469	$8.75

P/N 05-06080

P/N 05-06081

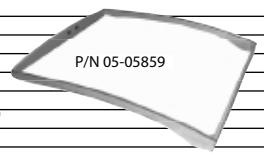
P/N 05-06116

P/N 05-06115

TOP CABIN ASSEMBLY & COMPONENTS ALL FAA/PMA'D

Requirements for the 7AC, 7ACA, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBC, 7ECA, 7GCAA, 7HC, 7KC, 7KCAB, 8GCBC Models	OEM P/Ns	Part No.	Price
Top Cabin Assembly	3-525	05-05842	$217.95
Requirements for the 7BCM & 7CCM			
Top Window Support Assembly	3-585	05-05859	$156.75
Requirements for the 11AC Models			
Top Cabin Components, Sides	5-170	05-06090	$63.50
Top Cabin Components, Front	5-171	05-06091	$63.50
Top Cabin Components, Rear	5-163	05-06084	$46.75
Top Cabin Components, Middle	5-178	05-06094	$27.25
Requirements for the 8GCBC w/greenhouse Models			
Top Cabin Assembly	3-1396	05-05787	$131.95
Requirements for the 8KCAB Models			
Top Cabin Assembly	3-1439	05-06347	$110.75

P/N 05-05842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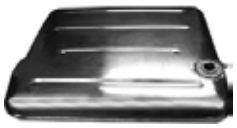
AERONCA/BELLANCA REPLACEMENT PARTS

FUEL TANKS & COMPONENTS ALL FAA/PMA'D


P/N 05-06349

P/N 05-06131
P/N 05-06132

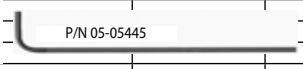
P/N 05-06215

Description	Models	Strap Length	OEM P/Ns	Part No.	Price
13 Gallon Wing Tank Kit LH/RH	7AC, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7KC		7-10001K (includes 2 tanks, hardware and plumbing)	05-06348	$2,832.00
			7-10001L (left tank only)	05-06131	$957.00
			7-10001R (right tank only)	05-06132	$957.00
18 Gallon Fuel Tank LH/RH	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC, (8GCBC 35 gal. only)		7-1449L	05-06349	$1,274.00
			7-1449R	05-06155	$1,274.00
6 Gallon Aux. Fuel Kit LH/RH	7BCM		7-1001LK	05-06350	$584.00
			7-1001RK	05-06351	$584.00
Fuel Tank Strap (inboard & outboard) for tank 7-10001	7ECA, 7GCAA, 7GCBC, 7KCAB	28.938"	2-942-8	05-05854	$16.50
20 Gallon Fuel Tank LH/RH	8KCAB		7-1403L	05-06151	$1,653.00
			7-1403R	05-06153	$1,272.00
Fuel Tank Strap	8KCAB	30.00"	2-761-9	05-05716	$33.00
		23.38"	2-761-10	05-06352	$17.50
		9.68"	2-761-1	05-05709	$30.50
6 Gallon Fuel Tank LH/RH	7CCM, 7DC, 7EC		7-772L	05-06215	$546.00
			7-772R	05-06216	$637.00
Fuel Tank Strap (inboard) for tank 7-772	7CCM, 7DC, 7EC	28.375"	2-942-2	05-05752	$19.50
Fuel Tank Strap (outboard) for tank 7-772	7CCM, 7DC, 7EC	27.75"	2-942-5	05-05758	$221.95
Fuel Tank Strap for tank 7-511	11AC	77.875"	2-761-1	05-05709	$30.50
		39.50"	2-761-2	05-05710	$30.50
		11.00"	2-761-3	05-05711	$27.60
Fuel Tank Strap for tank 7-460	7AC, 7CCM, 7DC, 7E	67.50"	2-761-5	05-05712	$33.00
Fuel Tank Strap for tank 7-460	7AC	45.50"	2-761-6	05-05713	$29.50
Fuel Tank Strap	7KCAB	21.00"	2-761-7	05-06560	$29.60
Fuel Tank Strap	7ECA, 7GCAA, 7GCBC, 7KCAB	29.63"	2-761-8	05-06561	$28.75
Fuel Tank Channel Support	8KCAB		4-1496	05-06353	$39.95
Wing Tank Channel Support	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC		4-1498	05-06354	$45.50
Fuel Manifold, front	7EC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC		1-8880-1	05-06355	$43.70
Fuel Manifold, front	7EC, 7ECA, 7FC, 7JC		1-8880-2	05-05567	$35.50
Fuel Manifold, rear	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7GCBC, 7ECA, 7GCAA, 7KC, 7KCAB, 8GCBC, 8KCAB		1-10037	05-06356	$61.75
Fuel Manifold Assembly, rear	7EC, 7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7JC, 7KC, 7KCAB, 8GCBC, 8KCAB		2-1577-2	05-05623	$109.95
Fuel Shut Off Tube	7A, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7HC		1-2456-1	05-05445	$34.25
Non-Vented Fuel Cap	Most 7 & 11 Series		1-2593-2	05-05478	$15.75
Vented Fuel Cap	Most 7 & 11 Series		1-2593-1	05-06357	$8.50
Fuel Tank Vent Fitting	8GCBC		1-10522	05-06358	$19.95
Fuel Shut Off Universal Joint	Most 7 Series		1-2458	05-05448	$30.95
Spacer	7ECA, 7GC, 7GCA, 7GCB, 7GCBA, 7HC		1-8871-8	05-05565	$9.00

P/N 05-05623

P/N 05-05478

P/N 05-05448

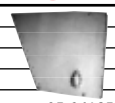

P/N 05-05445

AERONCA WING TANK KIT - For models 7AC, 7BCM, 7CCM, 7EC, 11AC, 11BC. Simple installation. Kit comes complete with left and right hand tanks, fittings, fuel line, mounting brackets, installation instructions and drawings. Fuel capacity is 5 gallons for each tank. Includes two Cat. No. E-482-000 fuel caps. FAA/PMA'd.

P/N 05-06359 ..... $1,128.00 / set

COWLING PARTS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Top Cowl	7AC & 11AC	7-473	05-06185	$395.95
Bottom Cowl	7AC, 7B, 7BCM, 7CCM, 7DC, 11AC, 11B	7-472	05-06184	$371.95
Bottom Cowl Scoop Deflector	7AC, 7B, 7BCM, 7CCM, 7DC, 11AC, 11B, 11C	4-730	05-06029	$61.50
Windshield Retainer	Most 7 Series	7-487	05-06194	$84.75
Engine Cowling Assemblies	7EC, 7FC	7-1068 (upper)	05-06137	$340.00
		7-1069 (lower)	05-06138	$332.95
Lower Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 1965 to Early 1973	7-1282-2	05-06147	$494.95
Complete Upper Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 1965 to Early 1973	7-1282-1	05-06146	$494.95
Complete Upper Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	7-1282-3	05-06360	$499.00
Angle Support Cowl Upper	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	2-1890-1	05-06361	$6.50
Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB 1973, 8KCAB w/150 hp	7-1455-1 (upper)	05-06156	$566.00
		7-1455-2 (lower)	05-06362	$406.00
Cowling	8KCAB w/180 hp, 1973	7-1455-3 (lower)	05-06363	$399.00
Cowling	7ECA, 7GCAA, 7GCBC, 7KCAB, 1974 to 1980, 8KCAB w/150 hp only	7-1469-1 (upper)	05-06364	$582.00
		7-1469-2 (lower)	05-06159	$537.00
Cowling	8KCAB w/180 hp, 1973	7-1482-1 (upper)	05-06365	$395.95
		7-1482-2 (lower)	05-06366	$323.95
Bracket Landing Light		2-1912	05-05648	$31.75
Nose Bowl Fiberglass	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 11AC	4-576	05-06367	$399.00
Nose Bowl Fiberglass	7EC, 7FC	7-1081	05-06140	$322.00


P/N 05-06185

Cat. No. 714691

P/N 05-06159

P/N 05-06140

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AERONCA/BELLANCA REPLACEMENT PARTS

FIREWALLS ALL FAA/PMA'D

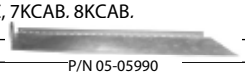
P/N 05-06043

P/N 05-06368

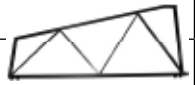
P/N 05-05950

Description	Models	OEM P/Ns	Part No.	Price
Firewall (no large holes)	7AC, 7BC, 7CC, 7EC, 7FC, 7GC, 7GCB, 7HC, 7JC, 7KC, 7GCA, 7GCBA, 7GCAA, 7GCBC, 7KCAB, 7ECA, 8KCAB, 11AC, 11BC, 11CC	4-860-2	05-06043	$216.95
Firewall (2 large holes)	Same as 4-860-2 (but two holes like 4-1640)	4-860-1	05-06368	$203.95
Firewall (2 large holes, w/bottom cut out, Scout)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB. w/cutout	4-1640	05-05950	$93.75
Service Kit - Frame Reinforcement Kit	7AC, 7BCM	(Required for 85 hp Conversion)	05-06375	$128.75
Fitting, Belly Skin	7GCAA, 7ECA, 7GCBC, 7KCAB, 8GCBC	1-10246	05-06369	$5.65

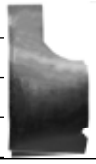
ELEVATORS & COMPONENTS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Cat. No.	Price
Elevators	8KCAB	4-1701 (left)	05-06370	$602.00
		4-1703 (right)	05-06371	$602.00
Elevators P/N 05-06045 P/N 05-06046	7AC, 7ACA,7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7JC, 11AC, 11BC, 11CC *4-864 replaces 4-544 per service bulletin #19 *4-865 replaces 4-543 per service bulletin #19	4-544 (left)*	05-06045	$606.00
		4-543 (right)*	05-06046	$606.00
Elevators	7ECA, 7GCAA, 7KCAB, 7GCBC P/N 05-05929	4-1699 (left)		$527.15
		4-1669 (right)	05-05960	$449.00
Elevator Frame Assembly, RH	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1479	05-05929	$566.00
Guard Tab Cable Pulley	7A, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB. 8KCAB. 11A, 11B, 11C	1-2399	05-05430	$6.85
Elevator Trim Tab	All Models  P/N 05-05990	4-562	05-05990	$51.95
Elevator Trim Cable	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	2-1905	05-05646	$82.75
Elevator Trim Control Cable	7AC, 7EC, 7FC, 7GC, 7GCA, 7HC	2-698	05-05690	$84.75
Up Elevator Control Cable	7A, 7B, 7BCM, 7CCM, 7DC, 7EC, 7FC	3-471	05-05830	$157.95
Up Elevator Cable	7ECA, 7GC, 7GCA, 7HC, 7KC, 8KCAB, 8GCBC	3-1072	05-05764	$226.95
Down Elevator Control Cable	7AC, 7EC, 7FC	2-686	05-05686	$150.95
Down Elevator Cable	7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBC, 7HC, 7KC, 7KCAB, 8GCBC, 8KCAB	2-1534	05-05619	$111.75
Elevator Stop Bolt	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA, 7KC, 11AC, 11BC, 11C	1-2540	05-05461	$21.00

STABILIZER FRAME & COMPONENTS ALL

Description	Models	OEM P/Ns	Cat. No.	Price
Stabilizer Frame	7EAC, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	4-1478	05-05928	$596.00
Stabilizer Frame	7AC, 7ACA, 7BCM, 7CCM, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7JC, 11AC, 11BC, 11CCM  P/N 05-05928	4-863	05-06044	$566.00
Stabilizer Frame *4-863 replaces 4-542 per service bulletin #19	7AC, 7BCM, 7CCM, 7DC, 11AC, 11B	4-542*	05-05971	$293.95
Stabilizer Drag Wire Assy., Lower	7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	3-1107-2	05-05766	$169.95
Stabilizer Drag Wire Assy., Upper	7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	2-1746-4	05-05632	$126.95
Stabilizer Brace Wire	Most 7, 8, and 11 Series	1-2340	05-05405	$46.60
Stabilizer Brace Wire Lug	Most 7, 8, and 11 Series	1-2357	05-05408	$9.50

WRAPAROUNDS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Wraparounds (includes LH & RH)	7AC, 7BCM	7-509	05-06202	$991.00
Wraparounds (includes LH & RH)	7ECA, 7GCAA, 7GCBC (1965-1966)	7-509-6	05-06205	$848.00
Wraparounds (includes LH & RH)	7ECA, 7GCAA, 7GCBC, 7KCAB, (1967-1973)  P/N 05-06374	7-509-7	05-06208	$552.00
Wraparounds (includes LH & RH)	7GCBC, 7ECAA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	7-1472	05-06374	$355.00

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AERONCA LOGO HAT

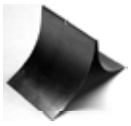
Go back with us to a bi-gone era and wear the symbols of these vintage aircraft. These hats are chino washed unconstructed cotton twill. They have velcro closures and pre-curved bills. They are putty with navy sandwich bills.

P/N 14-00176 ..... $9.85

AP

AERONCA/BELLANCA REPLACEMENT PARTS

ENGINE BAFFLE ASSEMBLY & COMPONENTS ALL FAA/PMA'D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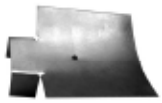
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P/N 05-06376

P/N 05-06180

P/N 05-06186

P/N 05-05955

P/N 05-05814
P/N 05-05816

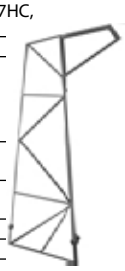
P/N 05-06059

Description	Models	OEM P/Ns	Part No.	Price
Inter-Cylinder Baffle - Cylinder Head	7AC, 7BC, 7CC, 7DC, 7EC, 7FC, 7JC, 11AC, 11B, 11C	1-1737	05-05371	$18.65
Inter-Cylinder Baffle	7AC, 7BC, 7CC, 7DC, 7EC, 7FC, 11AC, 11B, 11C	1-873	05-05544	$10.50
Stiffener R.F. Cylinder Baffle	7AC, 11AC	2-726	05-05706	$24.75
Baffle Cylinder - Right Rear	7BCM, 7CCM, 7DC, 7EC, 7ECA, 7FC, 7JC, 11B, 11C	3-631	05-05867	$35.95
Cylinder Head Baffle Spring Rod	7AC, 7BC, 7BCM, 7CCM, 7dc7ec, 7fc, 11a, 11b, 11c	1-2424	05-05440	$5.70
Cylinder Head Baffle Spring	7AC, 7BC, 7BCM, 7CCM, 7dc7ec, 7fc, 11a, 11b, 11c	1-1776	05-06376	$14.60
Baffle, Crankcase	7AC, 11AC	7-470 (right)	05-06180	$111.95
		7-469 (left)	05-06178	$96.75
		7-471 (upper)	05-06182	$66.75
Cylinder Baffles	7AC, 11AC	7-475 (right rear)	05-06186	$82.50
		7-476 (left rear)	05-06188	$73.25
		7-477 (right front)	05-06190	$184.95
		7-478 (left front)	05-06191	$172.95
Bracket Front Cylinder Baffle (Component to 7-477 & 7-478)	7AC, 7CCM, 7DC, 11AC	1-2414R	05-05434	$10.25
		1-2414L	05-05433	$10.25
Engine Baffle Assembly	7GCBC, 7KCAB, 7GCAA, 8KCAB w/150 hp only	3-1395R (right side)	05-05785	$98.50
		3-1395L (left side)	05-05783	$108.95
Engine Baffle Assembly	7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1421 (left front)	05-05908	$108.95
		4-1422 (right front)	05-05910	$123.95
		4-1427 (right rear)	05-05912	$196.95
		4-1430 (left rear)	05-05915	$211.95
Engine Baffle Assembly	7BCM, 7CCM, 7DC, 7EC, 7FC, 7ECA, 7JC, 11B, 11C	3-629 (left)	05-05863	$92.75
		3-630 (right)	05-05865	$90.75
Engine Baffle Assembly	8GCBC, 8KCAB	3-1563R (right side)	05-05816	$37.50
		3-1563L (left side)	05-05814	$45.90
		4-1654 (right front)	05-05955	$162.75
		4-1653 (left front)	05-05954	$183.75
		4-1656 (right rear)	05-05957	$97.50
		4-1658 (left rear)	05-05959	$169.75
Engine Baffle Assembly	7CCM, 7DC, 11C	4-674 (left rear)	05-06024	$225.95
		4-673 (right rear)	05-06022	$111.95
Engine Baffle Assembly	7CCM	4-684 (left front)	05-06026	$108.95
Engine Baffle Assembly	7BCM, 11BC	4-736 (right rear)	05-06030	$109.95
		4-738 (left rear)	05-06034	$148.95
Engine Baffle Assembly	7ECA - LYCOMING O-235	4-1749 (left rear)	05-05970	$118.95
Engine Baffle Assembly	7DC, 11B, 11C	4-737-3 (left front)	05-06033	$105.95
Engine Baffle Assembly	7BCM, 7CCM	4-737-4 (left front)	05-06032	$105.95
Engine Baffle Assembly	7BCM, 7CCM, 7DC, 11B, 11C	4-739 (right front)	05-06035	$208.95
Crankcase Baffle Assembly	7DC, 7EC, 7FC, 7JC, 7KC, 11B, 11C	4-740 (upper)	05-06037	$94.75
		4-741 (lower left)	05-06039	$73.00
		4-742 (lower right)	05-06041	$58.75
Engine Baffle Assembly	7EC, 7FC	4-879 (left front)	05-06057	$132.95
		4-880 (right front)	05-06059	$144.95
		4-881 (left rear)	05-06061	$106.95
		4-882 (right rear)	05-06063	$132.95
Flange Air Heater Inlet	7A, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7JC, 7KC, 11AC, 11BC, 11CC	1-2442	05-05442	$44.75
Engine Baffle w/1" holes	8GCBC	4-1657	05-05958	$73.50
Engine Baffle Seal Material *Meets AN, MS, or Mil-Dpec	Sold per square foot.	T8071-1	05-06377	$31.50

If the baffle you need is not listed, please call and inquire. We have many more Aeronca, Bellanca and Champion baffles. Too many to list here.

TAIL FEATHER COMPONENTS & HARDWARE ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Rudder	7AC, 7B, 7BCM, 7CCM, 7DC, 11A, 11B, 11C * 4-866 replaces 4-545 by Service Bulletin #19	4-545*	05-06047	$455.95
Rudder	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1376	05-05890	$920.00
Rudder	7AC, 7ACA, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCA, 7GCB, 7GCBA,7HC, 7KC, 11CC, 11BC	4-866	05-06047	$455.95
Rudder	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1697	05-06378	$700.00
Guard - Rudder Cable Pulley	Most 7 and 11 Series	1-2398-1 (painted)	05-05429	$9.50
		1-2398-2 (unpainted)	05-06379	$4.95
Hinge Bushing	Most 7EC and up Series, 8GCBC & 8KCAB (.25 ream)	1-3737	05-06380	$5.60
Hinge Bushing	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	1-3737-1	05-06381	$6.50
Bolt (Code 5)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	AN23-40	AN23-40	$1.18
Pin (Code 5)	7, 8 & 11 Series	AN394-71	05-06382	$1.06
Rudder Pedal Control Bearing Block	11B, 11C	1-2892-2	05-06383	$50.70
Cable - Front to rear rudder pedal	7AC, 7BCM, 7CCM, 7DC, 7EC, 7GC, 7GCBC, 7CCA, 7GCBA, 7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC	1-2280	05-05384	$71.75
Rudder Control Cables, Left & Right	11AC, 11B , 11C	1-2496-2 (left)	05-05455	$53.75
		1-2496-3 (right)	05-05456	$53.75
Rear Rudder Pedal Spring	Most 7 Series	1-2568	05-06384	$13.65
Rudder Pedal Spring	Most 7 Series	1-769	05-06385	$13.70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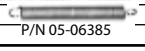
P/N 05-06384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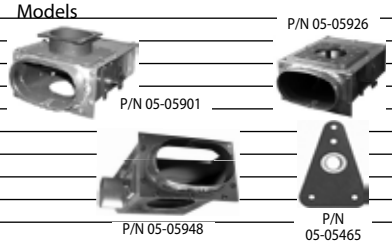
CARB AIR SCOOP AND HEATER BOX ASSEMBLIES FAA/PMA'D



Description	Models	OEM P/Ns	Part No.	Price
Carb Air Box Assy. with filter	7AC, 7CCM, 11AC, 11B, 11C	4-601	05-06005	$736.00
Carb Air Scoop Box Housing only	7AC, 7BCM, 7CCM, 7DC, 11AC	4-602	05-06006	$93.00
Carb Air Box Assy.	7GCAA, 7KCAB, 7GCBC	4-1407	05-05901	$561.00
Carb Air Box Assy.(LYC 0-235)	7ECA	4-1435	05-05918	$423.95
Carb Air Box Assy. (Scout)	8GCBC	4-1637-1	05-05949	$376.95
Carb Air Box Assy. with filter	7EC, 7FC, 7JC	4-877-3	05-06056	$680.00
Carb Air Box Assy.	7KCAB	4-1454	05-05926	$498.00
Carb Air Box Assy.	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	4-1637	05-05948	$320.00
Carb Air Scoop Bearing Plate Assy.	Most 7 & 11 Series	1-2563	05-05465	$30.75
Carb Air Scoop Valve Shaft Arm	Most 7 Series	1-8950	05-05573	$71.75
Carb Air Scoop Flap	7ECA, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBA, 7GCBC, 7HC, 7KC, 7KCAB	1-9155	05-05590	$16.75
Carb Air Scoop Valve Assy.	7GCBC, 7ECA, 7GCAA, 7KCAB	2-2141	05-05670	$33.50
Carb Air Scoop Valve Assy.	8KCAB	2-2142	05-06386	$30.95
Carb Air Scoop Valve	7AC, 7FC, 7GC, 11AC	2-787	05-05724	$50.25
Carb Air Scoop Lid	7AC, 7CCM, 7DC, 7EC, 7FC, 11AC	2-835	05-05732	$37.75
Carb Air Scoop Box Housing only	7ECA, 7GCAA, 7GCBC, 7KCAB	3-1385	05-05778	$76.95
Carb Air Scoop Box Housing only	7AC, 7BCM, 7CCM, 7DC, 7EC, 7FC, 7JC	4-1011	05-05873	$267.95
Air Box Outer Housing	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	3-1546	05-05812	$223.95
Carb Air Scoop Flange	7GCBC, 7ECA, 7GCAA, 7KCAB, 8KCAB, 8GCBC	2-2083	05-05667	$62.00
Heater Carburetor Elbow	7AC,7BCM, 7CCM, 7DC, 7EC, 7FC, 11AC	2-738	05-05708	$52.75
Flange - Carb Heat Inlet	7AC, 7BCM, 7CCM, 11AC	1-2492	05-05454	$22.80
Rear Seat Heater Box Assy.	7ECA, 7GCBC, 7GCAA, 7KCAB, 8GCBC, 8KCAB	2-2122	05-05674	$118.75
Air Filter	7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB	CA121pl	05-06387	$23.85
NAPA Air Filter - Direct replacement of FRAM	7GCA, 7GCB, 7GC, 7HC *EXPERIMENTAL ONLY	CA161pl	05-06388	$23.75

HARDWARE PARTS ALL FAA/PMA'D

Description	Models	OEM P/Ns	Part No.	Price
Aileron Control Sector Bushing	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC	1-10369	05-06389	$31.50
Socket-Control Stick Bushing	Most 7 & 8 Series	1-2550	05-06390	$16.50
Oleo Shock Strut Bushing	Most 7 & 11 Series	1-2565	05-06323	$49.65
Fairlead Pulley Bushing	Most Models. Except 8GCBC	1-2636	05-06391	$6.00
Oleo Strut Bushing	Most 7 & 11 Series. Except 7AC, 11AC	1-2788	05-05505	$14.85
Hinge Bushing	Most 7EC and up Series, 8GCBC & 8KCAB (.25 ream)	1-3737	05-06380	$5.60
Hinge Bushing	Most 7EC and up Series, 8GCBC & 8KCAB (.187 ream)	1-3737-1	05-06381	$6.50
Cable - Front to rear rudder pedal	7AC, 7BCM, 7CCM, 7DC, 7EC, 7GC, 7GCBC, 77CCA, 7GCBA,7ECA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC.	1-2280	05-05384	$71.75
Stabilizer Cable Wire Brace	Most 7, 8, & 11 Series	1-2340	05-05405	$46.60
Rudder Control Cables, Left & Right	11AC, 11B , 11C	1-2496-2 (left) 1-2496-3 (right)	05-05455 05-05456	$53.75 $53.75
Air Duct Flange	Most 7EC-7KCAB, 8 Series	1-3670	05-06392	$9.65
Rectangular Gasket	Most 7 & 8 Series	1-10019	05-06393	$6.50
Large Light Bracket Retainer	7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7KC	1-8745	05-06394	$16.85
Cleveland O-Ring*		101-50353	05-06395	$7.95
Cushioned Clamps - Loop-type, Cushioned, line support clamps, made of alluminum alloy. Cushion is non-fuel resistant.				
5/8" Clamp*		MS21919-DG10	MS21919-DG10	$0.41
1/8" Clamp*		MS21919-DG2	MS21919-DG2	$0.43
3/16" Clamp*		MS21919-DG3	MS21919-DG3	$0.38
1/4" Clamp AN742-4*		MS21919-DG4	MS21919-DG4	$0.25
7/16" Clamp*		MS21919-DG7	MS21919-DG7	$0.58
Pulley - Aileron Control	7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB	1-10309	05-05348	$49.50
Pulley - Fairlead (aluminum)	Most 7, 8 & 11 Series	1-2395	05-06397	$14.85
Pulley Guard (rudder cable)	Most 7, 8 & 11 Series	1-2398-1	05-05429	$9.50
Pulley*		(AN210) MS24566-4B	MS24566-4B	$23.50
Anti Friction Bearing Pulley (Non-Metallic)*	MS24566-3B	MS24566-3B	MS24566-3B	$18.90
Pulley - Aileron Control Cable	7GCBC, 7ECA, 7GCAA, 7KCAB, 8GCBC	1-10365	05-06398	$47.55
Cylinder Head Baffle Spring	Most 7AC-7FC, & 11Series	1-1776	05-06376	$14.60
Rear Rudder Pedal Spring	Most 7 & 8 Series	1-2568	05-06384	$13.65
Rudder Pedal Spring	Most 7 & 8 Series	1-769	05-06385	$13.70
Torque Tube Bearing Block (phenolic)	Most 7 Series and 8KCAB	1-2599	05-06399	$56.75
Torque Tube Bearing Block (aluminum)	7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	1-10370	05-06400	$59.95
Fabric Hold Down Washer	Most 7 & 11 Series	1-2331	05-06401	$0.23
Clamp -1-1/2" Diameter Tube	7CCM, 7EC, 7FC, 7HC, 7GCBC, 7ECA, 7GCAA, 7KCAB, 7KC	1-2939	05-05515	$14.75
Clamp Assembly 1-1/2" Diameter Tube	7CCM, 7EC, 7FC, 7GC, 7GCA, 7HC, 7GCB, 7ECA, 7GCAA, 7KCAB, 7KC	1-2941	05-05516	$38.00
Bowden Cables - (solid wire ends). Spiral wound galvanized wire casing. Used for push-pull controls of any length. I.D. .078 and O.D. 7/32" dia.				
Bowden Cable Casing, 38-1/8" long	7ECA	1-2578-11	05-06402	$21.50
Bowden Cable Casing, 56" long	7ECA	1-2578-12	05-06403	$26.80
Bowden Cable Casing, 56" long	7AC, 7CCM, 7DC, 7EC, 7FC, 7GC, 7GCB, 7JC	1-2578-3	05-05472	$37.25
Bowden Cable Casing, 24-3/4" long	7EC, 7BCM, 11AC, 11B	1-2578-4	05-05473	$42.00
Bowden Cable Casing, 16" long	11AC, 11B	1-2578-5	05-06404	$10.00
Bowden Cable Casing, 21" long	11AC, 11B	1-2578-6	05-05474	$42.00
Bowden Cable Casing, 23" long	11AC, 11B	1-2578-7	05-05475	$42.00
Bowden Cable Casing, 52-3/4"" long	7GCBA	1-2578-8	05-06405	$23.99

* Meets AN, MS, or Mil-Spec

Note on Model Eligibility: We have made every effort possible to detail installation eligibility for Aeronca parts based upon the best information we have available. If you are uncertain as to whether a specific OEM part number may be installed on your aircraft, you must consult either your aircraft owner or service manuals, or check with your mechanic. We do not warrant that models listed in the catalog are accurate in all instances. Please call us if you have questions about specific part numbers and model eligibility and we can research your question prior to your order.

AERONCA – CHAMPION – CITABRIA PARTS

(FAA/PMA APPROVED)

AP

WING LIFT STRUTS

New, Improved Steel Struts—Sealed and Oiled to prevent Internal Corrosion. (Except Decathlon aluminum front struts)

7AC Front Strut	P/N 05-08515	$559.00
7AC Rear Strut	P/N 05-08520	$444.00
11AC Front Strut	P/N 05-08525	$528.00
11AC Rear Strut	P/N 05-08530	$456.00
Citabria Front Strut	P/N 05-08535	$575.00
Decathlon Front Strut, Left	P/N 05-08545	$759.00
Decathlon Front Strut, Right	P/N 05-08550	$784.00
Decathlon Rear Strut	P/N 05-08555	$442.00
Scout Front Strut	P/N 05-08565	$459.00
Scout Rear Strut	P/N 05-08570	$295.95

WING LIFT STRUT FORK

P/N 05-08575 ..... $69.90

7AC CONTROL CABLES (GALVANIZED STEEL)

Short Aileron Cable (2 req'd)
P/N 05-08580 ..... $33.50

Rudder Cable, Long (2 req'd)
P/N 05-08585 ..... $90.75

Rudder Cable, Short (2 req'd)	P/N 05-08590	$65.75
Aileron Control Cable (4 req'd)	P/N 05-08595	$48.65
Brake Cable and Housing Assembly (2 req'd), (PMA App.)	P/N 05-08600	$96.75
Brake Cable Only (2 req'd)	P/N 05-08605	$29.50
Down Elevator Cable (1 req'd)	P/N 05-08610	$113.99
Cown Elevator Cable	P/N 05-08615	$125.75
Trim Cable (2 req'd)	P/N 05-08620	$73.75
Up Elevator Cable (1 req'd)	P/N 05-08625	$157.85

AERONCA WING TANK KIT

Comes complete with left and right hand tanks, fittings, fuel line, mounting brackets, installation instructions and drawings. Fuel capacity is 5 gallons for each tank. Includes two Cat. No.05-06359 fuel caps.

P/N 05-06359 ..... $1,128.00

CITABRIA AIR INDUCTION TUBE

P/N 05-08630 ..... $18.90

CITABRIA FUEL GAUGE COVER

P/N 05-08635 ..... $76.75

TAILBRACE WIRE LUG

P/N 05-08640 ..... $8.75

EXHAUST SYSTEM FOR 7AC / 11AC

LH Stack	P/N 05-08705	$251.95
RH Stack	P/N 05-08710	$260.95
Heat Muff	P/N 05-08715	$224.95

CITABRIA FUEL VENT DEFLECTOR

P/N 05-08655 ..... $65.75

STAINLESS STEEL TAILBRACE WIRE

7AC, 7EC, 7FC—UPPER & LOWER

Citabria, Decathlon, Scout—Lower

1. Wire Only	P/N 05-08665	$43.50
3. Assembly	P/N 05-08670	$67.25

Citabria, Decathlon, Scout—Upper

2. Wire Only	P/N 05-08675	$40.75
4. Assembly	P/N 05-08680	$64.50

ALL ALUMINUM COWLING

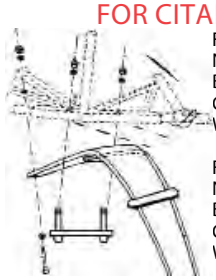
Nose Cowl	P/N 05-08685	$1,326.00
Fuselage Cowl (7AC only)	P/N 05-08690	$668.00
Top Cowl	P/N 05-08695	$354.00
Bottom Cowl	P/N 05-08700	$322.00

LANDING GEAR U-BOLTS

Citabria/Decathlon	P/N 05-08645	$140.75
Scout (new style)	P/N 05-08650	$136.75

(Hardware required—see below)

LANDING GEAR ATTACH HARDWARE FOR CITABRIA, DECATHLON, SCOUT



For Citabria and Decathlon

Nut (6 required)	P/N 05-08720	$18.50
Bolt (2 required)	P/N 05-08725	$29.50
Cupped Washer (2 req.)	P/N 05-08730	$0.70
Washer (6 required)	P/N 05-08735	$0.47

For Scout

Nut (6 required)	P/N 05-08720	$18.50
Bolt (2 required)	P/N 05-08745	$35.50
Cupped Washer (2 req.)	P/N 05-08730	$0.70
Washer (6 required)	P/N 05-08735	$0.47

OLEO SHOCK STRUT

Fits 7ECA, 7GCAA and 7GCBC:

with High Energy Taxi Spring	P/N 05-08740	$889.00
with Standard Spring	P/N 05-08750	$735.00
Fits 7AC and 11AC	P/N 05-08755	$799.00
7AC and 11AC Spring Only	P/N 05-08760	$53.85

LANDING GEAR OLEO CASE FRAME

Oleo Case Frame (Uncovered)

7AC & 11AC Series	P/N 05-08765	$583.00
Early Citabria	P/N 05-08770	$496.00

TAILWHEEL LEAF SPRINGS – COMPLETE SETS

Citabria/Decathlon (short)
P/N 05-08780 ..... $152.75

Scout (long) ..... P/N 05-08785 ..... $176.75

LANDING GEAR AXLE ASS'Y. FOR AERONCA & CITABRIA

Early Citabria Axle Strut	P/N 05-08790	$629.00
Aeronca Axle Strut	P/N 05-08795	$781.00

AERONCA HINGE BUSHING

P/N 05-06380 ..... $5.60

AERONCA REAR RUDDER PEDAL SPRING

P/N 05-08063 ..... $12.90

AERONCA RUDDER PEDAL SPRING

P/N 05-06385 ..... $13.70

AERONCA TAILSPRING U BOLT

P/N 05-08066 ..... $33.75

AERONCA WING SPIN SUPPORT BLOCK

P/N 05-08069 ..... $3.35

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

ERCOUPE – FORNEY – ALON PARTS

(TYPE CERTIFICATE APPROVED)

ALL ALUMINUM COWLING

NOSE COWL ASSEMBLIES

With no cold air intake hole
P/N 05-08800 ..... $991.00

With cold air intake hole
P/N 05-08805 ..... $1,062.00

SIDE COWL ASSEMBLIES

DZUS Fasteners ..... P/N 05-08810 ..... $503.00
CAMLOC Fasteners ..... P/N 05-08815 ..... $521.00

BOTTOM COWLS

P/N 05-08820 ..... $597.00

SPARK PLUG FAIRINGS

Mooney Fairing (top in photo, approx. 17 inches long)
P/N 05-08825 ..... $90.75

Ercoupe Fairing (bottom in photo, approx. 14-3/4 inches long) .....
P/N 05-08830 ..... $104.80

ERCOUPE ENGINE MOUNT

P/N 05-08835 ..... $2,069.00

FILLER NECK GROMMET

P/N 05-08840 ..... $20.50

NOSE GEAR STEERING BALL

This is the original type steering ball as used on Ercoupe, Forney and Alon.

P/N 05-08845 ..... $11.75

IMPROVED STEERING JOINT BALL KIT

This kit consists of rod-end bearing and all necessary hardware. It is FAA approved for all Ercoupe, Forney, Alon and M-10. For use with the part number 52035 push-rod that has the male threaded stud. (Steering Collar not included)

..... P/N 05-08905 ..... $116.75
Push Rod ..... P/N 05-08910 ..... $159.99

EXHAUST SYSTEM FOR ERCOUPE 415 SERIES & EARLY FORNEY

Left Hand Stack (stainless)
P/N 05-08920 ..... $610.00
Right Hand Stack (Stainless)
P/N 05-08930 ..... $624.00
Muffler ..... P/N 05-08935 ..... $697.00
Carburetor Heat Shroud
P/N 05-08940 ..... $150.95
Cabin Heat Shroud
P/N 05-08945 ..... $240.95

CABIN HEAT SHROUD ASSEMBLY FOR ALL ERCOUPE MODELS AFTER 1945

P/N 05-08945 ..... $240.95

ERCOUPE WINDOW WELTS

Ercoupe Window Welt 53169
(2 are required per plane, sold each)
P/N 05-08950 ..... $46.85

LANDING GEAR SHOCK PADS

This material has superior weathering qualities. This unaffected by hydraulic fluid and has greater resistance to static load.
Pads (8 required per plane)
P/N 05-08850 ..... $6.99

Washer (SN 813 and up) (14 required per plane)
P/N 05-08855 ..... $15.85

AP

6 GALLON FUSELAGE TANKS

For Ercoupe, welded alum., SN 2623 &up
P/N 05-08865 ..... $1,918.00

For Forney, Alon
P/N 05-08870 ..... $1,670.00

For M-10
P/N 05-08875 ..... $1,642.00

WELDED 9-GALLON WING TANK

For Forney, Alon and M-10 Models with gauge in left hand tank.

Left Hand Tank (48147)
P/N 05-08885 ..... $1,594.00

Right Hand Tank
P/N 05-08890 ..... $2,010.00

CARBURETOR HEAT SHROUD FOR ALL ERCOUPE MODELS

P/N 05-08895 ..... $167.75

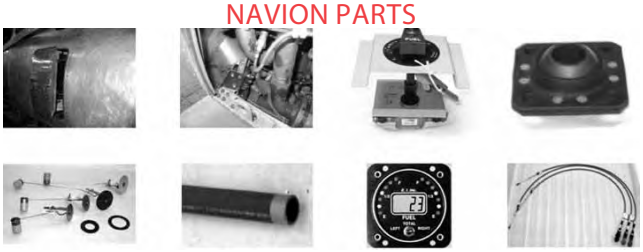
BLANK INSTRUMENT PANEL

Lay out your instrument and radio arrangement using this blank Ercoupe Panel which has locating holes only for the two control columns. FAA field approval required. ..... P/N 05-08900 ..... $342.00

NAVION – TAYLORCRAFT PARTS

(FAA/PMA APPROVED)

NAVION PARTS



Aircraft Spruce is a factory authorized distributor for these Navion parts manufactured under FAA/PMA approval. These parts are eligible for installation on all Navion models unless otherwise noted.

Description	Navion P/N	Part No.	Price
Fuel Selector Valve Main-off	147-30013-201	05-04271	$980.00
Fuel Selector Valve Main-Auxoff	147-30013-202	05-04272	$1,106.00
Fuel Selector Valve Left-Main-RGT-O	147-30013-203	05-04273	$962.00
Digital fuel qty gauge Main	147-40002-1001	05-04274	$666.00
Digital fuel qty gauge MN/AUX	147-40002-1002	05-04275	$673.00
Digital fuel qty gauge L/R	147-40002-1003	05-04276	$641.00
Fuel level Transmitter 5 hole	173-70010-20	05-04277	$291.95
Fuel level Transmitter 6 hole	173-70010-10	05-04278	$304.95
Fuel level Transmitter AUX TNK	145-51071-4	05-04279	$306.00
Fuel level Transmitter TIP TNK	161.30015.67	05-04280	$320.00
Flush Fuel Cap	147-30012-150	05-04281	$692.00
Gear Switches Main - Nose	147-40002-10	05-04282	$84.50
Mixture Cable-Vernier	205-30001-1002	05-04283	$457.00
Propeller Cable-Vernier	205-30001-1003	05-04284	$462.00
Baggage Door	--	05-04285	$1,855.00
Overhead Panel	147-40002-136-1	05-04286	$358.00
Cable Roller Assembly Set of 4	145-52301-3	05-04287	$88.75
Primary Monitor - CHT, EGT, and more	147-40002-1007	05-04288	$2,099.00
Pilot & Co-Pilot Sholder Restraints	173-53001	05-04289	$1,159.00
Nose Gear Seal Kits	145-S145-34102-900	05-04290	$121.95
Main Gear Seal Kit	145S33102-900	05-04291	$20.85
Aft. Equipment rack	147-40005	05-04292	$1,566.00
Texas Patch LH	161-31023-1	05-04293	$112.95
Texas Patch RH	161-31023-2	05-04294	$112.95
Canopy Felt with Inst Letter 28	--	05-04295	$65.85
Heated Pitot Tube Mast	161-51002-11	05-04296	$131.00
Sloped Windshield	162-31801	05-04297	$1,020.00

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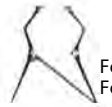
(FAA/PMA APPROVED)



TAYLORCRAFT ENGINE MOUNT

For 65 hp. Continental ..... P/N 05-08955 ..... $774.00
For 85 hp. Continental ..... P/N 05-08960 ..... $1,012.00

TAYLORCRAFT EXHAUST SYSTEM

For all 65 hp. Continental engines in B series through BC 12 series.

P/N 05-08965 ..... $1,221.00

TAYLORCRAFT B, BC, & LIFT STRUTS
(OILED AND SEALED)

TaylorCraft Front Lift Strut ..... P/N 05-08970 ..... $652.00
TaylorCraft Rear strut ..... P/N 05-08975 ..... $551.00
Note: all post WWII will not work on a Taylor A/C F/L2M

TAYLORCRAFT LEADING EDGE SKINS

Outboard Leading Edge (54 1/4") ..... P/N 05-08980 ..... $87.75
Center Leading Edge (57 1/4") ..... P/N 05-08985 ..... $97.75
Inboard Leading Edge (64") ..... P/N 05-08990 ..... $107.90

Note: all post WWII will not work on a Taylor A/C F/L2M

TAYLORCRAFT HEAT SHROUD

P/N 05-08995 ..... $934.00

TAYLORCRAFT ALUMINUM NOSE COWL

Applicable to B series and BC12D Continental powered Taylorcraft (cowl grills not included)

P/N 05-09005 ..... $914.00

TAYLORCRAFT NOSE COWL GRILLS

Stamped aluminum grills with natural aluminum finish. For all standard Taylorcraft nose cowls.
Left Grill
P/N 05-09010 ..... $55.85
Right Grill
P/N 05-09015 ..... $55.85

TAYLORCRAFT TAILWHEEL SPRING SET

P/N 05-09020 ..... $129.75

TAYLORCRAFT WHEEL FENDER

FAA approved Taylocraft Fiberglass Wheel Fender Fits 6.00 x 6-6ply tires and other classic models. Code 4.
P/N 05-07231 ..... $224.00

TAYLORCRAFT AILERON BALL STUD

P/N 05-07229 ..... $28.55

TAYLORCRAFT PARTS

SEALED TAYLORCRAFT LIFT STRUT ASSEMBLIES

Front Clamp

Rear Clamp

Aero Fabricators, the manufacturing division of The Wag-Aero Group, now has FAA approval to manufacture NEW sealed lift strut assemblies as well as approval to REPAIR and seal existing lift strut assemblies (as long as there is no corrosion) for Taylorcraft Models a, bc, bcs, bc-65, bcs-65, bc12-65, bcs12-65, bc12-d, bcs12-d, bc12-d1, bcs12-d1, bc12d-85, bcs12d-85, bc12d-85, bcs12d-4-85, bf, bfs, bf-60, bfs-60, bf-65, bf12-65, bl, bls, bl-65, bls-65, bl12-65, bls12-65, fa-iii, 19, f19, f21, f21a, f21b, f22, f22a, f22b, f22a. These sealed lift struts satisfy the requirements of AD 2007-16-14. All FAA/PMA'D.

Description	Major	Minor	Wall Thickness	Cat. No.	Price ea.
Rear Lift Strut w/clamp	1.78	1.06	.049	05-05172	$749.00
Rear Jury Strut clamp only				05-05173	$15.00
Front Lift Strut w/clamp	2.76	1.44	.049	05-05174	$886.00
Front Jury Strut clamp only				05-05175	$13.50
Remanufactured Front Sealed Lift Strut with out clamp				05-06243	$418.00
Remanufactured Rear Sealed Lift Strut with out clamp				05-06244	$400.95

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TAYLORCRAFT PARTS

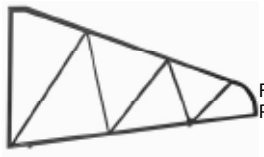
P/N 05-05176

P/N 05-05178

P/N 05-05177

P/N 05-05179

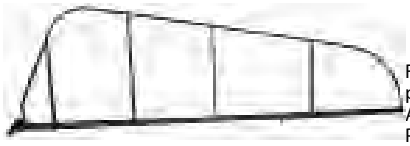
Description	OEM Part No.	Part No.	Price
Taylorcraft Trim Tab Frame For L24A, B and M models. Made of wood. FAA/PMA'D	D-4026	05-05176	$82.75
Taylorcraft Trim Tab For L2, L2A and TG6. FAA/PMA'D	B-410	05-05177	$15.55
Taylorcraft Bungee Tool	---	05-05178	$207.95
Taylorcraft Rudder For BC12D. Direct replacemnt for OEM P/ND-A410. FAA/PMA'D	---	05-05179	$567.00



TAYLORCRAFT STABILIZER

For BC12D. Direct replacemnt for OEM P/ND-A419. FAA/PMA'd

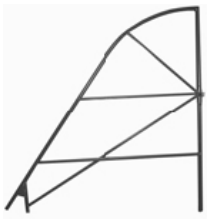
P/N 05-05180.....$673.00



TAYLORCRAFT ELEVATOR, RH

For BC12D. Direct replacemnt for OEM P/ND-A420. FAA/PMA'd

P/N 05-05181.....$552.00



TAYLORCRAFT VERTICAL FIN

For BC12-D aircraft and it is a direct replacement for OEM P/N D-A40. Fabricated to current aviation material standards using new rigid fixturing to maintain drawing specifications. These are manufactured uncovered. FAA/PMA'd

P/N 05-08378.....$532.00

TAYLORCRAFT LOGO PATCH

4-3/8" x 1-5/8", ready to be ironed or sewn on.

P/N 14-00151.....$2.50

P/N 05-05185
P/N 05-05186

P/N 05-05187

TAYLORCRAFT WING FUEL TANKS

6 gallon Wing Fuel Tanks, For Models B, B12, BC, BC12D, BCS, BCS12D, 19, F19, F21. OEM P/N 1546. FAA/PMA'd

LH.....P/N 05-05185.....$655.00
RH.....P/N 05-05186.....$562.00

TAYLORCRAFT FUSELAGE FUEL TANK

12 gallon Fuselage Fuel Tanks, For Models B12, BC12D, 19, F19. OEM P/N 0797. FAA/PMA'd.....P/N 05-05187.....$680.00

TAYLORCRAFT TAIL FLYING WIRES - Stainless Steel. FAA/PMA'd

Size	OEM Part No.	Part No.	Price ea.
38-1/2"	A-460	05-05188	$32.70
40-5/8"	A-461	05-05189	$39.65
36-1/2"	A-4029	05-05190	$39.95
44"'	D-40	05-08392	$39.85

Set of FourTaylorcraft Fying Wires. Includes 2 each A461, D-40 wires, 8 each nipples A-986, end insert A4002 and 8/36" hex nut; two each fuselage straps A4001, fin straps A4008; four each stabilizer straps A4009 . P/N 05-10540.....$399.95

TAYLORCRAFT DRAG WIRES - Made from 304 Stainless Steel, 1

Description	PN	Price
Inboard, 42-1/4"	05-08056	$12.95
Outboard, 64"	05-08057	$14.85
Lift Strut Fitting, 33-1/32"	05-08058	$14.50
Drag Wire Nipple	05-08059	$7.95

TIE RODS AND ACCESSORIES

Description	OEM Part No.	Part No.	Price ea.
Nipple for #8-36 tie rods. FAA/PMA'd	A-986	05-05193	$9.50
Tie Rod End Insert. FAA/PMA'd	A-4002	05-05194	$16.50
Tie Rod Fuselage Strap. FAA/PMA'd	A-4001	05-05195	$19.99
Tie Rod Fin Strap. FAA/PMA'd	A-4008	05-05196	$26.70
Tie Rod Stabilizer Strap. FAA/PMA'd	A-4009	05-05197	$26.70

TIE RODS AND ACCESSORIES

Description	OEM Part No.	Part No.	Price ea.
8/36"	---	05-05192	$0.22
8/36", MS35650-384	---	05-08061	$0.94

CLEVELAND WHEELS & BRAKES FOR HOMEBUILTS

Wheels with matching hydraulic disc brakes are made from magnesium alloy castings to give a lightweight, durable unit. Wheels complete with bearings and wheel covers. Brake assembly has linings installed. Sold in pairs only.

500 x 5, Wt. 5.75 Lbs. Each (Wheel P/N 40-78B, Brake P/N 30-9)
Kit P/N 199-102 (Std. Disc) ..... $1,295.00 /Pr
Kit P/N 199-102C (Chrome Disc) ..... $1,195.00 /Pr
Use Lining P/N 66-106. Fits 1-1/4" dia. axles.

600 x 6, Wt. 7-3/4 Lbs. Each (Wheel P/N 40-59A, Brake P/N 30-59A)
Kit P/N 199-104 (Std. Disc) ..... $2,472.00 /Pr
Kit P/N 199-104C (Chrome Disc) ..... $3,126.00 /Pr
Use Lining P/N 66-112. Fits 1-1/2" dia. axles.

600 x 6, with Master Cylinders for Defiant
Special set consists of (2) P/N 40-75B wheels, (2) P/N 30-52 brake assemblies and (2) P/N 10-34 master cylinders.
P/N 199-133X $1,729.00

500 x 5 NOSE WHEEL - Magnesium, with bearings.
For 1-1/4" dia. axle. ..... P/N 40-77C $665.00

600 x 6 NOSE WHEEL - Anodized aluminum, with bearings.
For 1-1/2" dia. axle. ..... P/N 40-56 ..... $1,244.00

LG

HEAVY-DUTY CLEVELAND WHEELS & BRAKES FOR HOMEBUILTS

The heavier-duty brake discs, linings and hardware in these kits will increase braking capacity for the heavier, faster-landing aircraft now being designed & built.

#199-93 UPGRADE KIT - For #199-102 standard wheels and brakes. Upgrades current 40-78B/ 30-9 to new 40-230/30-181 specs. Consists of #66-106 linings, discs, shims, bolts, rivets and nameplates for 2 wheels & brakes. P/N 199-93 ..... $558.00

#199-156 KIT (AIRCRAFT TO 1500 LBS) - Kit consists of two 40-230 wheel assemblies and two 30-181 brake assemblies. Uses #66-106 linings. Fits 1-1/4" dia. axles. Used on Vari-eze.
P/N 199-156 ..... $1,452.00

#199-152 KIT FOR LONG-EZ & COZY (AIRCRAFT TO 2200 LBS) - Kit contains two 40-151 wheel assemblies and two 30-133 brake assemblies. Uses #66-55 linings. Fits 1-1/4" dia. axles.
P/N 199-152 ..... $1,570.00

CLEVELAND WHEELS & BRAKES FOR AMPHIBIANS

Although magnesium wheels and brakes are considerably lighter, magnesium is subject to corrosion and should not be used for amphibious operation. Only organic linings should be used on all brakes. All parts of the 500 x 5 size wheels and brakes for amphibians are constructed of anodized aluminum for water resistance. Although a special 40-74 series of 600 x 6 wheels and brakes are manufactured for amphibious use, with chrome plated bearings and brake disc and water drainage holes, they are too costly for use on homebuilt aircraft.

The use of standard Cleveland aluminum wheels with standard bearings on amphibian aircraft is suggested. If bearings are kept well greased, reasonable service can be expected, but earlier bearing replacement should be anticipated.

500 x 5 (Anodized Aluminum)
Kit P/N 199-103 (Std. Disc) ..... $1,867.00 Pr
Kit P/N 199-103C (Chrome Disc) ..... $2,765.00 Pr
600 x 6 (Anodized Aluminum)
Kit P/N 199-105 (Std. Disc) ..... $1,643.00 Pr
Kit P/N 199-105C (Chrome Disc) ..... $2,189.00 Pr
500 X 5 ALUMINUM NOSE WHEEL, P/N 40-87C $859.00

AEROSHELL GREASE FOR WHEEL BEARINGS

Aeroshell #22 grease is recommended for lubrication of Cleveland wheel bearings and is also applicable to other similar wheel bearings. Meets Mil-G-81322. 14 oz. tube ..... P/N 08-05490 ..... $11.85

CLEVELAND HOMEBUILDERS SPECIAL WHEEL & BRAKE SET PACKAGES

PACKAGE NO. 1 -
Includes 2 Cleveland 5.00-5 magnesium wheels & brakes plus (2) 6 ply tires & tubes. (Wt. approx. 28 lbs.)

A w/McCreary Air Trac Tires & Tubes
P/N 06-00100 ..... $1,574.00
B w/Goodyear Flight Custom II Tires (Goodyear's latest design)
P/N 06-00200 ..... $1,768.00
C w/Lamb Tires & Tubes (11.400 x 5)
P/N 06-00300 ..... $1,376.00

PACKAGE NO. 2 -
Package No. 1 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 30 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-00400 ..... $2,752.00.
B w/G.Year Flight CustomII Tires & Tubes
P/N 06-00500 ..... $2,946.00
C w/Lamb Tires & Tubes (11.400x5)
P/N 06-00600 ..... $2,554.00

PACKAGE NO. 3 -
Includes 2 Cleveland 6.00-6 magnesium wheels and brakes plus two 4 ply tires and tubes. (Wt. approx. 32 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-00700 ..... $2,748.00
B w/G.Year Flight CustomII Tires & Tubes
P/N 06-00800 ..... $2,989.00

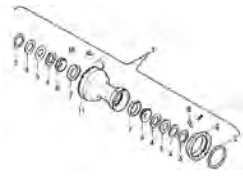
PACKAGE NO. 4 -
Package No. 3 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 34 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-00900 ..... $3,926.00
B w/G.Year Flight Custom II Tires & Tubes
P/N 06-01000 ..... $4,167.00

PACKAGE NO. 5 -
Includes 2 Cleveland 6.00-6 magnesium wheels & brakes plus two low-profile lightweight 6-ply 15x6.00-6 tires & tubes. (Wt. approx. 32 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-01100 ..... $2,817.00
B w/G.Year Flight Custom II Tires & Tubes
P/N 06-01200 ..... $2,947.00

PACKAGE NO. 6 - Package No. 5 plus 2 Cleveland #10-35 master cylinders. (Wt. approx. 34 lbs.)
A w/McCreary Air Trac Tires & Tubes
P/N 06-01300 ..... $3,995.00
B w/G.Year Flight Custom II Tires & Tubes
P/N 06-01400 ..... $4,125.00

PACKAGE NO. 7 FOR DEFIANT -
Includes 2 Cleveland 6.00-6 magnesium wheels & brakes (P/N 199-133X) plus (2) 6.00-6 McCreary 6 ply tires & tubes plus 2 master cylinders. P/N 06-01500 ..... $2,005.00

CLEVELAND WHEEL & BRAKE CONVERSION KITS



REPLACE 800 x 4 WHEELS ON PIPER AIRCRAFT

A bolt-on 600 x 6 wheel and brake conversion kit for Piper models: J3, J5C, PA11, PA12, PA14, PA15, PA16, PA17, PA18 & PA20 PA18-150 & PA18A-150 with Form 337. The 199-71-STC kit comes complete with STC paperwork so form 337 is not required. Accommodates tire sizes 600 x 6, 700 x 6, 800 x 6. No landing gear modifications required. Minor modification of hydraulic line required. Uses double puck brakes. Fits 1-1/4" diameter axle size only. Fits Piper J4/J5 but STC does not cover these aircraft.

Magnesium Model for general use

P/N 199-71 ..... $2,079.00

P/N 199-71-STC (w/full STC paperwork) $1,998.00

Aluminum Model for "AG" Service

P/N 199-71A $2,195.00

Part No.	Description	Qty
O40-09804	Wheel Assy.	2
030-06602	Brake Assy.	2
067-02900	Spacer	2
0 67-03200	Spacer	2
040-07602	Nose Wheel Assy.	1
067-03100	Spacer	2
157-01000	Dust Shield	2
102-00600	Screws	6
095-15100	Washers	6
207-00300	Hydraulic Line	2
50-29	Installation Drawing NLG	1
50-30	Installation Drawing MLG	1
	Supplemental type cert.	1

#199-52 NAVION CONVERSION KIT

Complete kit for co version to Cleveland 700 x 8 main gear and 600 x 6 nose wheel on Navion Models – A, B, C, D, E, F, G & H.

P/N 199-52 ..... $4,885.00

#199-52A NAVION CONVERSION KIT

Kit for conversion of maingear only.

P/N 199-52A $3,944.00

REQUEST QUOTATION ON UNLISTED MODELS

PIPER AZTEC – BRAKE

P/N 199-63 ..... $3,334.00

Description	Part No.	Qty.
Brake Assembly	30-96	2
Brake Disc	164-57	2
Nameplate	166-74	2
Installation Instructions	E.S.B. 7000-4	1

CESSNA – WHEEL & BRAKE

P/N 199-46 ..... $1,527.00

P/N 199-46C(Chrome) $1,709.00

(6.00x6) FOR CESSNA MODELS: 120, 140, (SN 8004 thru 13399), 140A (SN 13400 and up), 170, 170A, 170B, 172, 172A thru 172E, 175, 175A, 175B, 175C, P172D, 180, 180A thru 180E, 182, 182A thru 182G.

Description	Part Number	Qty.
Wheel Assy.	040-09701	2
Brake Assy.	030-06301	2
Bushing	145-02200	8
Bushing	145-01000	4
W & B Assembly Dwg.	20-134	1
Installation Instructions	50-24	1
Installation Instructions	50-25	1
Installation Instructions	50-26	1
Supplemental Type Certificate		1

GLOBE SWIFT

P/N 199-48 ..... $3,041.00

P/N 199-48C (Chrome) $2,924.00

Wheel and Brake Conversion Kit (6 00 X 6) for Globe Swift Models GC-IA, GC-IB.

NOTE: It will be necessary to change master cylinders and obtain the necessary axle hardware for conversion, Ref. dwg. 50-28. These parts can be obtained through Beech aircraft.

Description	Part Number	Qty.
Brake Assembly	030-07902	2
Wheel Assembly	040-11303	2
Spacer	067-02400	2
W & B Assembly Dwg.	20-130	1
Installation Drawing	50-23	1
Supplemental Type Certificate		1

BEECH – WHEEL & BRAKE

P/N 199-49 ..... $2,229.00

P/N 199-49C (Chrome) $2,881.00

(6.00x6) FOR BEECH AIRCRAFT MODELS: 35, A35 thru G35, 35R 35-33, 35-A33. 35-B33, 35-C33, 35-C33A, E33, E33A E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, V35B, 36, A36.

Description	Part Number	Qty.
Brake Assembly	030-05400	2
Wheel Assembly	040-08300	2
Spacer	067-02600	2
W & B Assembly Dwg.	20-69	1
Installation Drawing	50-28	1
Supplemental Type Certificate		1

BEECH – WHEEL & BRAKE

P/N 199-50 ..... $3,188.00

(7,00x8) FOR BEECH AIRCRAFT MODELS: 35, A35 thru G35, 35R, H35, J35, K35, M35, N35, P35, S35, D55, D55A, E55, E55A 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55A, 95-B55B, 95-C55, 95-C55A.

Description	Part Number	Qty.
Brake Assembly	030-06600	2
Wheel Assembly	040-09800	2
Spacer	067-02500	2
Spacer	067-02700	2
W & B Assembly Dwg.	20-135	1
Installation Drawing	50-27	1
Supplemental Type Certificate		1

NOTE: It will be necessary to change master cylinders and obtain the necessary axle hardware for conversion, Ref. dwg. 50-27. These parts can be obtained through Beech aircraft.

CESSNA – WHEEL & BRAKE

P/N 199-60 ..... $1,572.00

P/N 199-60C (Chrome) $1,889.00

(6.00x6) FOR CESSNA MODELS: 180, 180A, B, C, D, E, F, H, J. 185, 185A, B, A185E, A185F, 206E, 206F, TU206E, TU206F, 210, 210A, B, C. 210K, L, T210K, T210L.

Description	Part Number	Qty.
Wheel Assembly	040-07502	2
Brake Assembly	030-05200	2
Installation Drawing (210 series)	50-34	1
Installation Drawing (180,185,206 Series)	50-35	1
Supplemental Type Certificate (210 series)		1
Supplemental Type Certificate (180,185,206 Series)	20-64	1

NOTE: Kit to be used only on aircraft with 6.00 x 6 tires.

CESSNA – WHEEL & BRAKE

P/N 199-62 ..... $1,694.00

P/N 199-62C (Chrome) $2,089.00

(8.00x6) FOR CESSNA MODELS: 180, 180A, B, C, D, E, F, H & J. 185, 185A, B, A185E, A185E, A185F, 206E, F, TU206E, TU206F.

Description	Part Number	Qty.
Wheel Assembly	040-07504	2
Brake Assembly	030-05213	2
Installation Drawing	50-36	1
Supplemental Type Certificate		1

NOTE: Kit to be used only on aircraft with 6.00 x 6 tires.

CESSNA – WHEEL & BRAKE

P/N 199-84 ..... $1,768.00

P/N 199-84C (Chrome) $2,139.00

CESSNA APPROVED RETROFIT FOR THE FOLLOWING AIRCRAFT:

150, F150, A150, FA150, 152, A152, F152, FA152, 177, 177RG, F177RG, 182, A182, F182

Description	Part Number	Qty.
Wheel Assembly	030-07500(1)	2
Brake Assembly	040-11300(2)	2
Installation Drawing	50-36	1

NOTE CESSNA CROSS REFERENCE NUMBERS

(1) C-163030-113(LH) C-163030-114(RH) (2) C-163001-0104

CESSNA – WHEEL & BRAKE

P/N 199-84A $1,735.00

P/N 199-84AC (chrome) $2,025.00

CESSNA APPROVED RETROFIT FOR THE FOLLOWING AIRCRAFT: 172, F172, R172, FR172

Description	Part Number	Qty.
Wheel Assembly	030-07501(1)	2
Brake Assembly	040-11300(2)	2
Installation Drawing	50-37	1

NOTE CESSNA CROSS REFERENCE NUMBERS

(1) C-163030-011(LH) C-163030-112(RH) (2) C-163001-0104

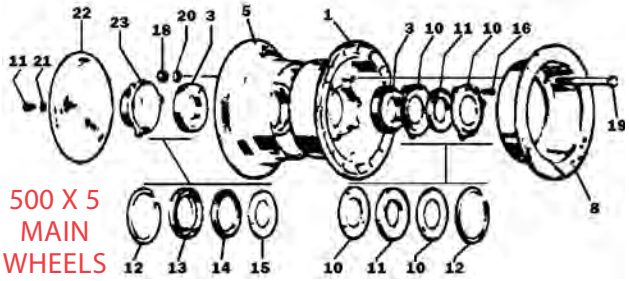
WE CARRY ALL CLEVELAND CONVERSION KITS

Cessna P210N	P/N 199-60A	$1,797.00
Cessna 310, 320	P/N 199-64	$4,250.00
Cessna 421, 340, 401, 402, 414	P/N 199-76	$4,195.00
Ercoupe	P/N 199-69	$2,623.60
Beech Duke	P/N 199-73	$3,465.00
Beech Musketeer	P/N 199-124	$2,175.00
Stinson	P/N 199-87	$2,038.00
Raytheon	P/N 199-123	$9,492.00
Raytheon	P/N 199-124C	$2,825.00
Raytheon	P/N 199-90	$7,723.00
Twin Otter DHC6-1, -100, -200, -300	P/N 199-92	$11,533.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE CONVERSION KIT LISTING

LG

FAA-APPROVED CLEVELAND WHEELS & BRAKES

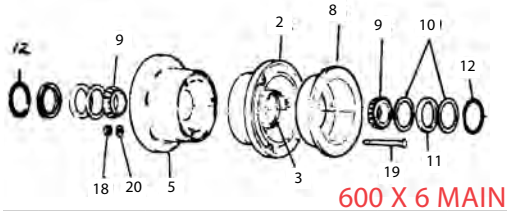


500 X 5 MAIN WHEELS

FIG	Cleveland P/N	Part No.	Description	Assembly Number	Qty. Per Assembly							Price Each
					40-12	40-12A	40-12B	40-19	40-19A	40-19B	40-78	40-78A	
1	161-5	161-00500	Inner Wheel Half Assy.		1	1	1						$775.00
	161-03100	161-03100	Inner Wheel Half Assy.								1		$396.00
	161-04100	161-04100	Inner Wheel Half Assy.									1	$329.95
3	08231	214-00300	Cup-Bearing		1	1	1	1	1	1	1	1	$26.50
5	162-00500	162-00500	Outer Wheel Half Assy.		1	1	1						$817.00
	162-02800	162-02800	Outer Wheel Half Assy.								1		$383.00
	162-03900	162-03900	Outer Wheel Half Assy.									1	$389.50
3	08231	214-00300	Cup-Bearing		1	1	1	1	1	1	1	1	$26.50
*	217-00100	217-00100	Grommet								1	1	$5.95
*	101-07200	101-07200	"O" Ring		1	1	1						$1.18
8	164-00400	164-00400	Brake Disc Assy.		1	1	1	1	1	1			$171.00
	164-17	164-01700	Brake Disc Assy.								1	1	$159.75
*	08125	214-00400	Cone-Bearing		2	2	2	2	2	2	2	2	$48.60
19	AN4-31A	103-10800	Bolt		3	3	3	3	3	3			$0.84
	AN4-22A	103-10500	Bolt								3	3	$0.39
20	AN960-416	095-10400	Washer			6	6	6	6	6	3	3	$0.03
18	AN365-428A	094-10300	Nut		3	3	3	3	3	3	3	3	$0.12
10	153-00800	153-00800	Ring-Grease Seal		2	2	4	2	2	4	4	4	$10.65
12	155-00200	155-00200	Ring-Snap		2	2	2	2	2	2	2	2	$14.50
11	154-00600	154-00600	Felt-Grease Seal		1	1	2	1	1	2	2	2	$7.55
23	158-00500	158-00500	Cap-Hub		1	1		1	1				$287.95
17	102-25100	102-25100	Screw		1	1		1	1				$13.65
21	095-15400	095-15400	Washer-Lock		1	1		1	1				$5.50
22	157-00500	157-00500	Shield-Dust		1			1					$68.50

MODEL NO. 40-78 wheel with brake disc and 1-1/4" dia. bearings as used on Cessna 150. P/N 40-78 .....$1,166.00

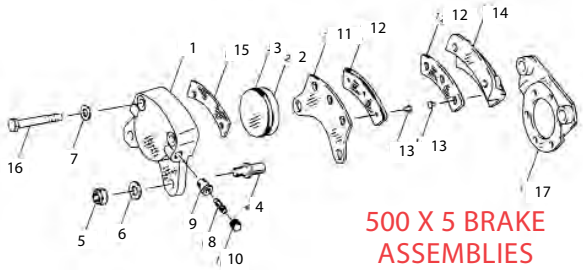
MODEL NO. 40-78B .....P/N 40-78B.....$1,164.00



600 X 6 MAIN WHEELS

FIG	Cleveland P/N	Part Number	Description	Assembly Number	Qty. Per Assembly						Price Ea.
					40-97	40-97A	40-97B	40-97C	40-97D	40-99	
2	161-03000	161-03000	Inner Wheel Half Assy.		1	1	1	1	1	1	$299.95
	161-02100	161-02100	Inner Wheel Half Assy.							1	$656.00
3	13836	214-00100	Cup-Bearing		1	1	1	1	1	1	$27.90
5	162-02700	162-02700	Outer Wheel Half Assy.		1	1	1	1	1		$292.95
	162-01900	162-01900	Outer Wheel Half Assy.							1	$689.00
	13836	214-00100	Cup-Bearing		1	1	1	1	1	1	$27.90
8	164-26A	164-02601	Brake Disc Assy.		1	1	1	1	1	1	$128.75
	164-02800	164-02800	Brake Disc Assy.							1	$159.95
9	214-00200	214-00200	Cone-Bearing		2	2	2	2	2	2	$39.85
19	AN5-35A	103-20400	Bolt		3	3	3	3	3		$1.38
	AN4-37A	103-11200	Bolt							6	$1.16
20	AN960-516	095-10500	Washer		3	3	3	3	3		$0.04
	AN960-416L	095-10200	Washer							6	$0.02
18	AN365-524A	094-10400	Nut		3	3	3	3	3		$0.15
	AN365-428A	094-10300	Nut							6	$0.12
10	153-00400	153-00400	Ring-Grease Seal		2	2		2	2	2	$10.65
	153-00300	153-00300	Ring-Grease Seal		1	1	2	1	1		$9.75
	153-01500	153-01500	Ring-Grease Seal		1	1	2	1	1		$14.50
	158-00300	158-00300	Cap-Hub							1	$47.60
11	154-00300	154-00300	Felt-Grease Seal		1	1		1	1	1	$7.85
	154-01300	154-01300	Felt-Grease Seal		1	1	2	1	1		$6.90
12	155-00100	155-00100	Ring Snap		2	2	2	2	2	2	$8.75
	154-12400	06-01778	Molded Grease Seal			1					$22.50
	154-12000	06-01782	Molded Grease Seal			1					$22.99

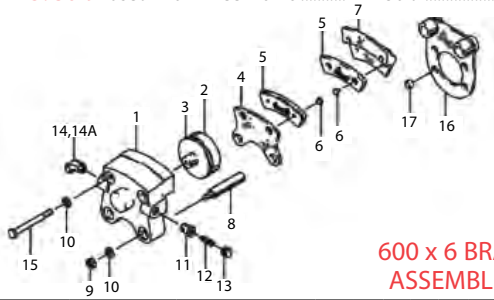
MODEL NO. 40-97A wheel with brake disc and 1.5" dia. bearings fits Cessna 172, 182 P/N 40-97A.....$740.00



500 X 5 BRAKE ASSEMBLIES

FIG	Cleveland P/N	Part No.	Description	Assembly Number	Qty. Per Assembly					Price Each
					30-9	30-9A(2)	30-9C	30-9D	30181A	
	91-00702	06-01203	Cylinder Assy.		1			1		$459.00
	91-04800	06-01204	Cylinder Assy.			1	1			$648.00
	91-17401	06-01205	Cylinder Assy.						1	$556.00
1	61-00601	061-00601	Cylinder		1			1	1	$365.00
	61-03901	061-03901	Cylinder			1	1			----
	92-00200	06-01206	Piston		1	1	1	1	1	$69.75
2	79-00300	062-00300	Piston		1	1	1	1	1	$74.75
3	101-02300	AN6227B-23	O-ring (MS28775-218)		1	1	1	1	1	$0.53
4		069-00400	Anchor bolt		2	2	2	2	2	$24.80
5	94-10300	AN365-428A	Nut (MS21044-N4)		2	2	2	2	2	$0.12
6	95-10400	095-10400	Washer (AN960-4-16)		2	2	2	2	2	$0.03
7	95-10200	095-10200	Washer (AN960-416L)		2	2	2	2	2	$0.02
8	079-00300	079-00300	Screw-Bleeder		1	1	1	1	1	$12.85
9	081-00100	081-00100	Seat-Bleeder		1	1	1	1	1	$18.60
10	183-00100	183-00100	Cap-Bleeder		1	1	1	1	1	$3.50
	073-00300	073-00300	Pressure Plate Assy.		1	1	1	1	1	$124.75
11	063-00500	063-00500	Pressure Plate		1	1	1	1	1	$96.75
12	066-10600	066-10600	Lining		1	1	1	1	1	$12.50
13	15-00200	105-00200	Rivet		3	3	3	3	3	----
	074-00200	074-00200	Back Plate Assy.		1	1	1	1	1	$187.95
14	064-00500	064-00500	Back Plate		1	1	1	1	1	$95.85
12	66-106	066-10600	Lining		1	1	1	1	1	$12.50
13	15-00200	105-00200	Rivet		3	3	3	3	3	----
15	68-00401	06-01196	Shim						1	$171.95
16	06-00011	103-12100	Bolt		2	2	2	2		$0.75
		103-11500	Bolt						2	----
17	075-00800	075-00800	Torque Plate Assy.		1	1	1		1	$198.75
	75-19300	06-01201	Torque Plate Assy.					1		$442.00

MODEL NO. 30-9 used with wheel 40-78 ..... P/N 30-9 .....$434.00



600 x 6 BRAKE ASSEMBLIES

FIG	Cleveland P/N	Part Number	Description	Assy Number	Qty. Per Assembly					Price Ea.
					30-56	30-56A	30-63	30-63A	30-63D	
	091-02200	091-02200	Cylinder Assy.				1	1	1	$545.00
1	061-01900	061-01900	Cylinder		1	1	1	1	1	$245.95
2	062-01600	062-01600	Piston		1	1	1	1	1	$60.75
3	101-05200	101-05200	"O" Ring		1	1	1	1	1	$0.70
	073-01100	073-01100	Press. Plate Assy.		1	1	1	1	1	$92.75
4	063-01200	063-01200	Plate-Press.		1	1	1	1	1	$68.95
5	66-105	66-155	Lining		1	1	1	1	1	$12.85
6	RA105-00200	RA105-00200	RIVET		2	2	2	2	2	$0.12
	074-01000	074-01000	Back Plate Assy.		1	1	1	1	1	$163.75
7	064-01500	064-01500	Plate-Back		1	1	1	1	1	$89.90
5	66-105	66-105	Lining		1	1	1	1	1	$12.85
6	RA105-00200	RA105-00200	Rivet		2	2	2	2	2	$0.12
8	069-00400	069-00400	Bolt-Anchor		2	2	2	2	2	$24.80
9	AN365-428A	094-10300	Nut		2	2	2	2	2	$0.12
10	AN960-416L	095-10200	Washer		4	4	4	4	4	$0.02
11	081-00100	081-00100	Seat-Bleeder		1	1	1	1	1	$18.60
12	079-00300	079-00300	Screw Bleeder		1	1	1	1	1	$12.85
13	183-00100	183-00100	Cap-Bleeder		1	1	1	1	1	$3.50
14	AN823-4D	104-00500	Fitting Tube		1	1				$8.50
15	AN4H-17A	103-11600	Bolt-Lock			2				$0.72
16	075-01600	075-01600	Torque Plate Assy.			1				$250.95
16	075-03700	075-03700	Torque Plate Assy.				1	1	1	$185.75
17	145-01000	145-01000	Bushing		2		2	2	2	$18.90

MODEL No. 30-63A used with wheel 40-97A .....P/N 30-63A..... $530.00
MODEL No. 30-52 Brake Assy .....P/N 30-52..... $894.00
MODEL No. 30-52N Brake Assy .....P/N 06-00106 .....$1,116.00

NOSE WHEELS

MATCO NOSE WHEELS

Matco Part No.	Our Part No.	Dia. (in.)	Bearing Axle dia.	Bearing Type Sealed	Width	Static Capacity (lbs.)	Load Limit (lbs.)	Weight (lbs.)	Price
MATERIAL: SPUN ALUMINUM									
MH6N	06-00537	6	0.625	Ball	5.325	660	2000	2.6	$82.75
MH6N-S	06-00539	6	0.625	Ball	5.325	660	2000	2.6	$82.75
MH6N.75	06-00538	6	0.75	Ball	5.325	660	2000	2.6	$83.75
MH6N-S.75	06-00540	6	0.75	Ball	5.325	60	2000	2.6	$78.50
MATERIAL: CNC CAST ALUMINUM									
NW40B	06-00541	4	6.25	Ball	3	660	2000	2.25	$86.75
NW40B.75	06-00542	4	0.75	Ball	3	660	2000	2.25	$86.75
NW40R	06-00543	4	0.75	Taper/Roll	3	1185	3560	2.25	$124.75
NW50	06-00544	5	0.75	Taper/Roll	3.88	1185	3560	3.24	$134.95
NW51	06-00545	5	0.75	Taper/Roll	3.88	1185	3560	3.24	$134.95
NW501.25	06-00546	5	1.25	Taper/Roll	3.88	1420	4260	3.24	$134.95
NW511.25	06-00547	5	1.25	Taper/Roll	3.88	1420	4260	3.6	$134.95
NW60	06-00548	6	1.25	Taper/Roll	3.5	1420	4260	3.24	$124.75
NW600	06-00549	6	1.25	Taper/Roll	4.5	1420	4260	3.24	$163.75
MATERIAL: DIE CAST ALUMINUM									
NW40EE	06-00550	4	0.625	Ball	3.25	660	2000	1.8	$47.80
NW50CC	06-00551	5	0.625	Ball	4.38	660	2000	2.7	$83.75
NW50CC.75	06-00552	5	0.75	Ball	4.38	660	2000	2.7	$82.75
NW51CC	06-00553	5	0.625	Ball	4.38	660	2000	2.7	$77.75
NW51CC.75	06-00554	5	0.75	Ball	4.38	660	2000	2.7	$73.99
NW50CC.75R	06-00555	5	0.75	Taper/Roll	4.38	1185	3560	2.8	$124.95
NW51CC75R	06-00556	5	0.75	Taper/Roll	4.38	1185	3560	2.8	$131.75
NW60CC	06-00557	6	0.625	Ball	4.38	660	2000	3.22	$83.75
NW60CC.75	06-00558	6	0.75	Ball	4.38	660	2000	3.22	$89.75
NW60CC.75R	06-00559	6	0.75	Taper/Roll	4.38	1185	3560	3.52	$117.75
NW600CC	06-00560	6	0.625	Ball	5.38	660	2000	3.47	$93.75
NW600CC.75	06-00561	6	0.75	Ball	5.38	660	2000	3.47	$93.75
NW600CC.75R	06-00562	6	0.75	Taper/Roll	5.38	1185	3560	3.52	$135.95
NW80CC-Z	06-00563	8	0.625	Ball	3	660	2000	5.02	$93.75

MATCO 6 INCH PNEUMATIC NOSE WHEEL ASSEMBLY

MATCO mfg produces the WHLTW35 inch nosewheel for use with aircraft requiring less than 660 pounds nose-wheel load.

Dimensions: The WHLTW35 uses 0.625 inch Sealed Ball bearings. It is 1.78 wide and weighs approximately 0.91 lbs.

Performance: The WHLTW35 is designed for the following standards:

• Static Capacity: 660 • Load Limit: 1980 • Also used in WHLT-6P Tail-wheel • This wheel uses the TIRT6X2ASY tire & tube assembly. The wheel is rated at 660 lbs static but the tire is only rated at 250 lbs static. This is the lightest weight 6 inch pneumatic wheel available!

P/N 06-01658 ..... $71.75

GROVE 4" NOSE WHEEL

Direct replacement for Brock and Gerdes 4" nose wheel. Use with 2.80-4 8" diameter tire on VE, LE, Cozy, etc. or with 4.10-4 10" diameter tire on Cozy Mark IV • Genuine Timkin • Felt Seals • CNC precision Machined to exact tolerances • Weight 1.87 lbs. • Corrosion resistant finish • Static Load Rating 900 pounds. Model 49-3A ..... P/N 06-00842..... $188.95

TIRE: Uses 2.80/2.50; 4 ply tire..... PN 06-08000 .....$47.95

GROVE 400X4 NOSE WHEEL

The perfect nose wheel for light sport aircraft such as the KR and Soneri. • Static Load Rating 900lbs • Genuine Timkin Bearings • Uses 3/4" Axle • Felt Seals • Weight 1.98 lbs Model 49-1A

P/N 06-00843 ..... $184.95

TIRE: Uses 400 x 8 ply tire

PN 06-00844 ..... $58.75

Uses 4.10 x 3.50 x 4 ply tire ..... PN 06-08102 ..... $25.85

GO-CART WHEELS

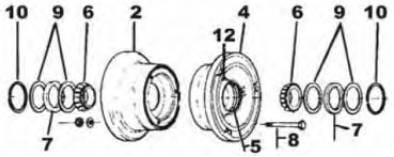
Cast aluminum wheels with 4" hub, for homebuilts and sailplanes. Used on Tri-Q conversion as nose-wheel. 3-1/4" wide. Complete with 5/8" dia. ball bearings. Wt. 1-1/2 Lbs.

P/N 06-16540 ..... $47.90 Ea.

HEGAR 6" NOSE WHEEL

The 6" Spun Aluminum nose wheel with 5/8 bearings. Comes centered when using the MX o-ring standard wheel hub but can also be purchased with the MX off-set hub (no o-ring with offset hub. Requires the use of a tube. .Comes complete with nuts, bolts, washers, valve stem, o-rings if required and the MX hub. May also be used as main wheels. P/N 06-01274..... $89.80

CLEVELAND NOSE WHEELS 500X5



#	Old Part No.	Part No.	Description	Qty Per Assy. 40-77	40-77A	40-85	40-87	40-87A	Price Each
2	162-28	162-02800	Outer Wheel	1	1	-	1	-	$383.00
	162-36	162-03600	Outer Wheel	-	-	-	-	1	$365.95
	08231	214-00300	Cup Bearing	1	1	1	1	1	$26.50
12	217-1	217-00100	Grommet	1	1	1	1	1	$5.95
4	161-31	161-03100	Inner Wheel Half Assy.	1	1	-	1	-	$396.00
	161-38	161-03800	Inner Wheel Half Assy.	-	-	-	-	1	$416.95
5	08231	214-00300	Inner Cup Bearing	1	1	1	1	1	$26.50
8	103-1050	AN4-22A	Bolt	3	3	3	3	3	$0.39
*	095-10400	AN960-416	Washer	6	6	6	6	6	$0.03
*	094-10300	AN365-428A	Nut	3	3	3	3	3	$0.12
9	153-1	153-00100	Ring-Grease Seal	-	-	-	4	4	$9.50
	153-8	153-00800	Ring-Grease Seal	4	4	-	-	-	$10.65
	21-104	153-00200	Ring-Grease Seal	-	-	4	-	-	$12.90
10	155-2	155-00200	Ring-Snap	2	2	2	2	2	$14.50
7	154-1	154-00100	Felt-Grease Seal	-	-	-	2	2	$10.80
	154-6	154-00600	Felt-Grease Seal	2	2	-	-	-	$7.55
6	08125	214-00400	Cone-Bearing	2	2	2	2	2	$48.60

500 X 5 NOSE WHEEL dimensions: 6.625 in. x 6.625 in. x 7 in.

P/N 40-77 ..... $665.00

500 X 5 NOSE WHEEL with 1-1/4" dia. bearings. Used on some models of Cessna 150, is typical of nose wheels used on general aviation aircraft. FAA-approved. P/N 40-77A $557.00

600 X 6 NOSE WHEEL with 1-1/2" dia. bearings. (not illustrated) is used on some models of Cessna 172 and 182. FAA approved.

P/N 40-76A $594.00

CLEVELAND BRAKE ASSEMBLY 30-59A

MFR Part No.	QTY Rqd	Description	Part No.	Price/Ea.
30-59A / 030-05901	-	Complete Cleveland 30-59A Assy	30-59A	$1,146.00
091-09600	1	091-09600 Cylinder Assy	06-01952	$757.00
061-07500	1	061-07500 Cylinder	06-01953	$356.00
092-04000	1	092-04000 Piston Assy	06-01954	$117.75
062-03900	1	062-03900 Piston	06-01955	$117.75
101-05200	1	O-Ring AN6230B-2	101-05200	$0.70
069-00400	2	069-00400 Bolt Anchor	069-00400	$24.80
094-10300	2	094-10300 Nut (MS21044-N4)	094-10300	$0.10
095-10200	4	095-10200 Washer AN960-416L	095-10200	$0.02
079-00300	1	Bleeder Screw 079-00300	079-00300	$12.85
081-00100	1	Bleeder Seat #081-00100	081-00100	$18.60
183-00100	1	Bleeder Cap 183-00100	183-00100	$3.50
073-04600	1	073-04600 Pressure Plate Assy	06-01956	$191.75
063-03400	1	063-03400 Pressure Plate	06-01957	$37.50
066-11200	2	Brake Lining # 66-112	066-11200	$19.85
105-00200	4	#105-2 4X4 BRAKE LINING RIVET	105-00200	$0.02
074-03600	1	074-03600 Back Plate Assy	06-01958	$237.95
064-02900	1	064-02900 Back Plate	06-01959	$178.75
103-11700	2	Bolt 103-11700	103-11700	$6.80
075-03700	1	Torque Plase Assy	075-03700	$185.75
145-01000	2	Bushing # 145-01000	145-01000	$18.90

LG

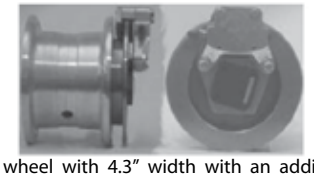
NOTE: Our prices include 2 wheels and 2 brakes (set), unless noted.

W51LT/LXT

The W51LT/LXT is a 5" wheel with a 4.775" width with an additional 1.23 inch caliper spacing. Bearing spacing is 3.084" and axle spacing is 1.00". The total weight of this wheel and brake assembly is 9.2 Lbs. The bearing axle diameter is 1.25". Torque rating is 4266 in-lb for the W51LT and is 6143 in-lb for the W51LXT. W51LT is recommended for Cozy Mark IV and the W51LXT is used on the Glasair.

W51LT..... P/N 06-00079 ..... $587.00
W51LT w/axles..... P/N 06-00568 ..... $743.00
W51LXT..... P/N 06-00412 ..... $647.00
W51LXT w/axles ..... P/N 06-00569 ..... $798.00

WE51



The WE51 is a 5" wheel with 4.3" width with an additional 1.39" caliper spacing. Bearing spacing is 3.27" and axle spacing is 0.945". The total weight of this wheel and brake assembly is 7.5 lbs. The bearing axle diameter is 1.25". Torque Rating (@450 PSI): 2085 inlb. Any 500X5 tire and tube combination can be used with this tire.

WE51 ..... P/N 06-00445 ..... $525.00
WE51 w/axles ..... P/N 06-00570 ..... $678.00

W51L

MATCO mfg produces a superior 5" wheel and brake assembly for use with aircraft requiring less than 1420 lbs per wheel. This model uses 1.25" TAPER/ROLL bearings. The W51L is a 5" wheel with 4.6" width with an additional 1.23" caliper spacing. Bearing spacing is 3.084" and axle spacing is 1.285". The total weight of this wheel and brake assembly is 6.6 lbs. The bearing axle diameter is 1.25".

W51L..... P/N 06-01710 .....$458.00

W50CC

The W50CC is a 5" wheel with a 3.7" width with an additional 1.75" caliper spacing. Bearing Spacing is 3.0" and axle spacing is 2.5". The total weight of this wheel and brake assembly is 4.5 lbs. excluding the axle assembly. This wheel uses a "Lamb" type tire which is 11x400x5 and requires a tube with a 90 degree valve stem. Torque Rating (@450 PSI): 1540 in-lb.

W50CC..... P/N 06-00470 ..... $470.00

W60CC .625

Matco mfg produces a superior inch wheel and brake assembly for use with aircraft requiring less than lbs per wheel. This model uses inch bearings.
This is a W60CCD .625 is a 6" inch wheel. The bearing axle diameter is .625 inches.
P/N 06-00938..... $231.95

MMHE6B

MHE6B-SC MHE6B

The MHE6B E SERIES is a 6" wheel with 5.375" width with an additional 1.39 inch caliper spacing. Bearing spacing is 2.71" and axle spacing is 0.68". The total weight of this wheel and brake assembly is 5.8 lbs. The bearing axle diameter is 1.25". Use on various light support aircraft. Torque Rating (@450 PSI): 2085 in-lb. Order axles separately.

MHE6B..... P/N 06-00444 .....$573.00
MHE6BSC..... P/N 06-00443 .....$573.00

W600XT

The W600XT is a 6" wheel with 6.3125" width with an additional 1.37" caliper spacing. Bearing spacing is 3.42" and axle spacing is 1.78". The total weight of this wheel and brake assembly is 11.9 lbs. The bearing axle diameter is 1.50". Torque Rating (@450 PSI): 6441 inlb. Static Capacity: 1860 lbs. Load Limit: 5580 lbs. Order axles separately.

W600XT..... P/N 06-00413 ..... $673.00

MH6B

The MH6B is a 6" wheel with 5.375" width with an additional 1.24" caliper spacing. Bearing spacing is 2" and axle spacing is 2". The total weight of this wheel and brake assembly is 4.4 lbs. The bearing axle diameter is 0.625". The NEW MH6B is now produced as a CNC spun wheel with a Tenzalloy hub center and a NEW higher torque caliper. Torque Rating (@450 PSI):1540 in-lb. StaticCapacity:660 lbs.

MH6B..... P/N 06-16810 ..... $459.00
MH6B-S ..... P/N 06-00447 ..... $463.00

W60

MATCO mfg produces a superior 6" wheel and brake assembly for use with aircraft requiring less than 1420 lbs per wheel. This model uses 1.25" TAPER/ROLL bearings. The W60 is a 6" wheel with 4.375" width with an additional 1.23" caliper spacing. Bearing spacing is 2.5" and axle spacing is 1.25". The total weight of this wheel and brake assembly is 7.1 lbs. The bearing axle diameter is 1.25".

W60 .....P/N 06-02160..... $463.00

W60CC .75

Matco mfg produces a superior 6" inch wheel and brake assembly for use with aircraft requiring less than 660 lbs per wheel. This model uses 0.75 inch BALL bearings. (Check the product comparison table for other bearing and caliper configurations). The W60CCD.75 is a 6" inch wheel with 4.38 inch width with an additional 1.75 inch caliper spacing. Bearing spacing is 3 inches and axle spacing is 1 inches. The total weight of this wheel and brake assembly is 5.55 pounds. The bearing axle diameter is 0.75 inches. This is a set of one wheel and one brake. P/N 06-00939.....$231.95

P/N 06-00448

P/N 06-00456

P/N 06-00462

P/N 06-01660

NOTE: Our prices include 2 wheels and 2 brakes (set)

Matco Part No	Aircraft Spruce	Bearing Axle Dia. BB=Ball TRB=Taper Roll	Load Limit (lbs.)	Static Capacity (lbs.)	Brake Reline Kit	Weight (lbs.)	Tire Size	Tire Type	Price
CNC SPUN WHEELS: INTERNAL CALIPER									
MH6B	06-16810	0.625BB	2000	660	BRL-2	4.4	6″	any 6″	$459.00
MH6B-S	06-00447	0.625BB	2000	660	BRL-2	4.4	6″	any 6″	$463.00
MH6B.62D	06-00448	0.625BB	2000	660	BRL-3	4.65	6″	any 6″	$568.00
MH6B.62D-S	06-00449	0.625BB	2000	660	BRL-3	4.65	6″	any 6″	$568.00
MH6B.75	06-00450	0.75BB	2000	660	BRL-2	4.4	6″	any 6″	$458.00
MH6B.75-S	06-00453	0.75BB	2000	660	BRL-2	4.4	6″	any 6″	$458.00
MH6B.75D	06-00451	0.75BB	2000	660	BRL-3	4.65	6″	any 6″	$569.00
MH6B.75D-S	06-00452	0.75BB	2000	660	BRL-3	4.65	6″	any 6″	$539.00
MH6BD.62	06-00454	0.625BB	2000	660	2BRL-2	5.18	6″	any 6″	$595.00
MH6BD.62-S	06-00455	0.625BB	2000	660	2BRL-2	5.18	6″	any 6″	$595.00
MH6BD.75	06-00456	0.75BB	2000	660	2BRL-2	5.18	6″	any 6″	$595.00
MH6BD.75-S	06-00457	0.75BB	2000	660	2BRL-2	5.18	6″	any 6″	$595.00
CNC SPUN WHEELS: EXTERNAL CALIPER									
MHE6B1.25	06-00444	1.25TRB	2700	900	BRL-1	5.8	6″	up to 6.00-6	$573.00
MHE6B1.25-C	06-00443	1.25TRB	2700	900	BRL-1	5.8	6″	up to 6.00-6	$573.00
CENTRIFUGALLY CAST WHEELS: INTERNAL CALIPER									
W40B	06-00458	0.625BB	2000	660	BRL-2	4.05	4″	any 4″	$451.00
W40-BDXT	06-00459	0.75BB	3560	1185	BRL-2	3.8	4″	2.80/2.50x4	$465.00
W40R	06-02210	0.75BB	3560	1185	BRL-2	4.05	4″	any 4″	$506.00
W50L	06-01860	0.625BB	2000	660	BRL-1	6.6	5″	11.0x4.05	$482.00
W50L.75	06-00833	0.75BB	2000	660	BRL-1	6.6	5″	11.0x4.05	$478.95
W50LD	06-00411	1.25BB	4260	1420	2BRL-1	8.9	5″	11.0x4.05	$575.00
W50LT	06-00461	1.25BB	4260	1420	BRL-6	9.2	5″	11.0x4.05	$594.00
W50LXT	06-00462	1.25BB	1420	4260	BRL-6	9.2	5″	11.0x4.05	$709.00
W50S1.25	06-01660	1.25BB	4260	1420	BRL-1	6.6	5″	11.0x4.05	$482.00
W50S.75	06-00463	0.75BB	4260	1185	BRL-1	6.6	5″	11.0x4.05	$476.00
W51L	06-01710	1.25BB	4260	1420	BRL-1	6.6	5″	5.00x5	$458.00
W51LD	06-00464	1.25BB	4260	1420	2BRL-1	8.9	5″	5.00x5	$516.00
W51LT	06-00079	1.25BB	4260	1420	BRL-6	9.2	5″	5.00x5	$587.00
W51LXT	06-00412	1.25BB	4260	1420	BRL-6	9.2	5′	5.00x5	$647.00
W51S1.25	06-01960	1.25BB	4260	1420	BRL-1	6.6	5″	5.00x5	$482.00
W62	06-02110	0.75BB	3560	1185	BRL-1	7	6″	any 6″	$474.00
F602	06-00465	0.75BB	3560	1185	BRL-1	7.8	6″	any 6″	$579.00
W60	06-02160	1.25BB	4260	1420	BRL-1	7.1	6″	any 6″	$463.00
F600	06-00466	1.25BB	4260	1420	BRL-1	7.8	6″	any 6″	$529.00
W600	06-00467	1.5TRB	5580	1860	BRL-6	11.9	6″	any 6″	$625.00
W600XT	06-00413	1.5TRB	5580	1860	BRL-6	11.9	6″	any 6″	$673.00
W600XLT	06-00468	1.5TRB	5580	1860	BRL-6	10.2	6″	any 6″	$744.00
W323A	06-00469	1.5TRB	5580	1860	BRL-323	13.75	6″	any 6″	$1,459.00
CENTRIFUGALLY CAST WEELS: EXTERNAL CALIPER									
WE51	06-00445	1.25TRB	4260	1420	BRL-1	7.5	6″	5.00x5	$525.00

MATCO WHEELS & BRAKES

MATCO DIECAST WHEELS

NOTE: Our prices include 2 wheels and 2 brakes (set); Bearing Axle: BB=Ball TRB=Taper Roll

P/N 06-00471

P/N 06-00485

P/N 06-00486

P/N 06-00489

Matco P/N	Our P/N	Bearing Axle Dia.	Load Limit (lbs.)	Static Cap.(lbs.)	Brake Reline Kit	Weight (lbs.)	Tire Size	Tire Type	Price
W50CC	06-00470	0.625BB	2000	660	BRL-2	4.57	5″	11.0 x 4.05	$470.00
W50CC.62D	06-00471	0.625BB	2000	660	BRL-3	4.82	5″	11.0 x 4.05	$539.00
W50CC.75	06-00472	0.75BB	2000	660	BRL-2	4.57	5″	11.0 x 4.05	$456.50
W50CC.75D	06-00473	0.75BB	2000	660	BRL-3	4.82	5″	11.0 x 4.05	$539.00
W50CCD.75	06-00474	0.75BB	2000	660	2 BRL-2	5.35	5″	11.0 x 4.05	$595.00
W50DCC.62	06-00475	0.625BB	2000	660	2 BRL-2	5.35	5″	11.0 x 4.05	$595.00
W51CC	06-00476	0.625BB	2000	660	BRL-2	4.57	5″	5.00-5	$470.00
W51CC.62D	06-00477	0.625BB	2000	660	2 BRL-3	4.82	5″	5.00-5	$539.00
W51CC.75	06-00478	0.75BB	2000	660	2 BRL-2	4.57	5″	5.00-5	$495.00
W51CC.75D	06-00479	0.75BB	2000	660	2 BRL-3	4.82	5″	5.00-5	$595.00
W51CCD.75	06-00480	0.75BB	2000	660	2 BRL-2	5.35	5″	5.00-5	$595.00
W51DCC.62	06-00481	0.625BB	2000	660	2 BRL-2	5.35	5″	5.00-5	$595.00
W60CC	06-00482	0.625BB	2000	660	BRL-2	5.55	6″	up to 6.00-6	$470.00
W60CC.75	06-00483	0.75BB	2000	660	BRL-2	5.55	6″	up to 6.00-6	$470.00
W600CC	06-00484	0.625BB	2000	660	BRL-2	5.85	6″	any 6 "	$489.00
W600CC.75	06-00485	0.75BB	2000	660	BRL-2	5.85	6″	any 6 "	$459.00
W60CCD.62	06-00486	0.625BB	2000	660	2 BRL-2	5.55	6″	up to 6.00-6	$616.00
W60CCD.75	06-00487	0.75BB	2000	660	2 BRL-2	5.55	6″	up to 6.00-6	$616.00
W600CCD.62	06-00488	0.625BB	2000	660	2 BRL-2	5.85	6″	any 6 "	$614.00
W600CCD.75	06-00489	0.75BB	2000	660	2 BRL-2	5.85	6″	any 6 "	$614.00
W60CC.75R	06-00490	0.75TRB	2000	1185	BRL-2	5.85	6″	up to 6.00-6	$490.00
W600CC.75R	06-00491	0.75TRB	2000	1185	BRL-2	6.15	6″	any 6 "	$565.00
W60CCD.75R	06-00492	0.75TRB	2000	1185	2 BRL-2	6.25	6″	up to 6.00-6	$616.00
W600CCD.75R	06-00493	0.75TRB	2000	1185	2 BRL-2	6.55	6″	any 6 "	$635.00
W80CC-Z	06-00494	0.625BB	2000	660	BRL-1	8.75	6″	4.80-8	$486.00

MATCO AXLE CHART

Matco P/N	Aircraft Spruce P/N	Dia. (In.)	Used on Models	Axle Assy	Comment	Axle Price	Assy Price
A1	06-00495	1.25	W50, W51, WE51L	AXLE1	AL Flange Mount	$56.95	78.85
A1A	06-00496	1.25	W50LD,W51LD,W50LT, W50LXT,W51LT,W51LXT	AXLE1A	AL Flange Mount	$61.75	$78.80
A1B	06-00497	1.25	WE51	AXLE1B	AL Flange Mount	$57.99	$78.80
A2	06-00498	1.25	W50S,W51S	AXLE2	AL Flange Mount	$57.75	$78.85
A3	06-00499	1.25	W60, WI60, WI60L	AXLE3	AL Flange Mount	$54.85	$76.85
A3A	06-00501	1.25	MHE51, MHE6B, MHE8B, MHE10B, MHE12B	AXLE3A	AL Flange Mount 5″ Cessna bolt pattern	$62.25	$77.75
A3C	06-00502	1.25	MHE51-SC, MHE6B-SC, MHE8B-SC, MHE10B-SC, MHE12B-SC	AXLE3C	AL Flange Mount 6″ Cessna bolt pattern	$62.75	$77.75
A4	06-16830	0.625	MHE6B,W50CC,W60CC,W40B	AXLE4	Steel Tube	$46.50	$48.50
A5	06-00503	0.75	W40BD	AXLE5	AL Flange Mount	$64.25	$66.50
A5G	06-00504	20mm	W40M	AXLE5G	Steel Flange Mount	$66.75	$71.75
A6	06-00505	1.5	W600,W600XT,WW600XLT	AXLE6	AL Flange Mount	$81.75	$93.85
A6M	06-00506	1.5	W600,W600XT,WW600XLT	AXLE6M	A6 Alternate Mount Ver.	$76.99	$93.75
A7	06-00507	0.75	MH6B,W50CC,W60CC,W40B	AXLE7	Steel Tube Mount	$54.75	$69.75
A8	06-00508	0.75	W62,MH6B.75,W50CC.7 MH6B5,260CC.75	AXLE8	Steel Tube	$52.75	$59.95
A13	06-00509	0.625	W80CC-Z	AXLE13	Steel Tube for Fork Mount	$51.75	$59.90
A15	06-00510	1.5	W323A	AXLE15	For W323A Compound W&B	$79.75	$98.75
A15M	06-00511	1.5	W323SA	AXLE15M	For W3238A Compound W&B	$103.95	$125.95
A16	06-00512	0.75	F602	AXLE16	Steel Tube for W62 w/F602 Spacer	$52.75	$58.85
A17	06-00513	0.75	W600CC.75	AXLE17	Steel Tube	$55.50	$56.85
A19	06-00514	0.75	W50CC.75, W51CC.75, W51CC.75R ONLY	AXLE19	Steel Tube	$56.85	$59.75
A20	06-00515	0.75	NW50.75R,NW51.75R	AXLE20	Steel Tube w/Spacers for Zenith 601	$48.50	$54.75

HEGAR WHEEL KITS

Spun aluminum wheel kit includes aluminum wheel halves, hubs,5/8 bearings, valve, tubeless kit and all necessary hardware, Compatible with Hegar brakes.
Note: Order tires separately.
4X6 Symmetrical(Quicksilver®)
P/N 06-00319 .....$89.75
6X6 Offset rim ..... P/N 06-00322 .....$97.25
6X6 Symmetrical (Quicksilver® ..... P/N 06-00323 .....$89.75
The following Hegar wheels are designed to fit Quicksilver® nose gear allowing clearance for the steering fork.
3.5X5 MX(L) Nose Wheel ..... P/N 06-00324 .... $111.95

HEGAR SPUN AND BILLET ALUMINUM WHEELS WITH BRAKES

6" SPUN ALUMINUM WHEEL - Includes. 2 - 6" spun aluminum wheels. 2 - 5" calipers and 4-1/2" rotors. all lines and fittings. axles included 5/8" or 3/4". 5/8" precision ball bearings are 800 GVW. 3/4" precision ball bearings are 1100 GVW. Note: To be run tubeless, but tubes may be used. 3-3/4 lbs. per side wheel and brake.

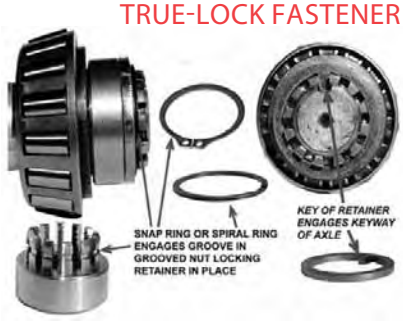
6S X 5 - 5" Wide Wheel X 6" Diameter..... P/N 06-01269.....$588.00
6S X 6 - 6" Wide Wheel X 6" Diameter..... P/N 06-01270.....$633.00

HEGAR BRAKE ACCESSORIES

Order the type of master cylinder(s) & actuator best suited to your aircraft. Standard keyed axles for all aircraft, except Quicksilver®.

Description	Part No.	Price
Heel-Operated Master Cylinder	06-00328	$67.75
Joystick-Mounted Master Cylinder	06-00329	$89.00
Foot Linkage	06-00330	$99.95
Hand Linkage	06-00331	$90.25
Axles, 5/8" Standard, Set Of 2	06-00332	$36.85
Axles, 5/8" Quicksilver® Set Of 2	06-00333	$63.25
Axles, 3/4" Standard, Set Of 2	06-00334	$36.50
Master Cylinder 5" Complete Single Lever 1/2" Bore	06-01277	$89.75
Master Cylinder 5" Complete Single Lever 5/8" Bore	06-01671	$89.75
Master Cylinder 5" Complete Dual T-Lever 1/2" Bore	06-01278	$136.95
Master Cylinder 5" Complete Dual T-Lever 3/4" Bore	06-01612	$175.75
Master Cylinder 5" Complete Dual T-Lever 5/8" Bore	06-01611	$175.75
Master Cylinder 7" Complete Dual T-Lever 1/2" Bore	06-01280	$136.95
Master Cylinder Complete 1/2" Bore MCT Motor Cycle	06-00329	$89.00
Master Cylinder Complete 3/4" Bore MCT Motor Cycle	15-05690	$132.75
Master Cylinder Only Rod End Type 1/2" Bore	15-04621	$69.50
Master Cylinder Only Motor Cycle Type 3/4" Bore	15-06337	$58.50
Master Cylinder Complete Heel Type 1/2 Bore	06-00328	$67.75
Master Cylinder 7" Complete Single T-Lever 1/2" Bore	06-01279	$89.75
Master Cylinder 7" Complete Single T-Lever 5/8" Bore	06-01775	$89.75

TRUE-LOCK FASTENER SYSTEMS



True-Lock aviation fastener systems reduce premature wear on your wheel-end assembly parts (brakes, bearings, axles, including tires and wheels). The True-Lock system eliminates the conventional axle nut system's inherent inferior torque setting characteristics imposed by the castle nut and cotter pin (end-play).
True-Lock is the only patented aviation wheel fastener system in the world that has been awarded an STC (Supplemental Type Certificate) by the FAA for axle nut technology. True-Lock LLC holds over 1,000 FAA certifications for aviation fastener design. All True-Lock fastener systems are guaranteed for the life of your aircraft and pay for themselves over time by reducing downtime and fewer replacement parts. So, If you want a wheel fastener system for your aircraft that sets the industry standard for vibration mitigation and cost reduction, then True-Lock is what you need.

The True-Lock fastener system is the next generation of fastener technology:

- FAA Certification on over 1,000 aircrafts.
- Significantly increases safety and reliability.
- Reuseable & cost effective.
- Maintenance Free - requires no cotter pins or safety wire!

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE PRICE LIST OF TRUE-LOCK FASTENER SYSTEMS.

JDM WHEELS, BRAKES AND AXLES

A quality built 6" wheel & brake designed for the homebuilt and ultralight flyer. Rated up to 2500 lbs. gross weight, these wheels easily accommodate 800 series tires for off-field landings and 600 series tires for low profile and an increase in speed. The brake disks made of cast iron provide for longevity and superior heat dissipation, while using Rapco brake pads to finish the system. The axles are 1-1/4" aluminum and use a 1-3/8" square bolt pattern. The kit does not include master cylinders, brake fluid line or axles and nuts. Each JDM brake and wheel including the axle weigh only 10.3 lbs. Kit includes 1 wheel and 1 brake.
6" wheel & Brake Assembly* (1-1/4" Tapered Roller Bearing)
P/N 06-03475.....$505.95 ea
1-1/4" Axle & Castle Nut ..... P/N 06-03480.....$96.00 ea

6S X 6 SPUN ALUMINUM WHEEL WITH BRAKE KIT

6" Spun Aluminum Wheel kit includes, 2 – 6" spun aluminum wheels, 2 – 6" calipers and 4-1/2" rotors, all lines and fittings, axles included 5/8" or 3/4". 5/8" precision ball bearings are 800 GVW, 3/4 precision ball bearings are 1100 GVW. To be run tubeless, but tubes may be used. Total weight per caliper, wheel, rotor and hub combined 3-3/4 lbs. Overall wheel width: 6.00 x 6" (3.5 rim w/ stem & 2.5" no stem)
5/8 Bearing .....P/N 06-01270 ..... $633.00

HEGAR 6 INCH BRAKE ASSEMBLY KIT WITHOUT WHEELS

Kit comes complete with two sets of hubs, 4.5" rotors, calipers, brake pads as shown along with two 8" axles with hardware, 15 feet of high pressure brake line and one bleeder kit. 5/8" or 3/4" bearing options.

5/8 Bearing .....P/N 15-05703 ..... $497.00
3/4 Bearing .....P/N 15-08293 ..... $586.00

MATCO HUB CAP KIT
FOR MH SERIES WHEELS

Responding to customer inquiries for a kit to allow installation of the current WHLWC wheel cover on MH series wheels, MATCO mfg has introduced the MHWC hub cap kit. The kit includes wheel covers and mounting hardware for 2 wheels. The WHLWC wheel covers are made from durable ABS polymer. The wheel covers can be painted to match customer requirements. Installation can be accomplished without removing the wheel. Installation on MH wheels using the CNC spun wheel halves (introduced in early 2001) can be accomplished in about 10 minutes, On earlier MH series wheels using stamped wheel halves, some trimming of the wheel cover may be required and installation may require about 30 minutes. Furnished unpainted. 2 wheel kit.

P/N 06-00446 ..... $17.80

MATCO BRAKE RELINE KITS

BRL-1

BRL-2

BRL-3

BRL-6

BRL-323

Matco Part No.	Our Part No.	Lining Model Used	Price each
BRL-1*	06-00571	4 of M66-106	$31.50
BRL-2*	06-00572	4 oF M66-103	$29.75
BRL-3*	06-00573	4 of M66-1052	$35.75
BRL-6*	06-00574	4 of M66-1052	$63.75
BRL-323	06-00575	4 of DR323	$241.95

*Reline kits include linings and rivets for 2 calipers.

MATCO TUBING & FITTINGS

Matco Part No.	Our Part No.	Description	Price
MSCNNR4/035	06-01133	Nylon II Tube .25	$1.25
MSC261P	06-01134	Ferrule and Nut	$2.19
MSC262P	06-01135	Union, Brass Fitting	$3.45
MSC264P	06-01136	T-Fitting, 1/4" Compression.	$6.50
MSC268P	06-01137	Straight fitting, 1/8" NPT - 1/4" Compression	$2.53
MSC268P-04X01	06-01138	Straight Fitting 1/16"	$8.50
MSC269P	06-01139	Brass Elbow, 90° 1/8" NPT - 1/4" Compression	$2.65
MSCNNR2/026	06-01140	Nylon II Tube, .125	$0.65
MSC164P	06-01142	T-Fitting, 1/8" NPT - 1/8" Compression	$11.50
MSC168P	06-01143	Straight Fitting, 1/8" NPT - 1/8" Compression	$4.35
MSC169P	06-01144	Brass Elbow, 90°, 1/8" NPT - 1/8" Compression	$5.35

MATCO 6" WHEELS & BRAKES FOR ULTRALIGHTS

This top quality wheel and brake set is excellent for use on high-performance ultralights. Set incl.: 2 aluminum wheels & brakes with 5/8" bearings, 2 axles, 2 spacers, 2 brake bleeder seats & valves, 4 brake line fittings, 12 ft. of 1/4" dia. x .035 wall brake line & 1 vertical master cylinder.

P/N 06-16800 ..... $631.00

Same as set #06-16800 except with 2 vertical master cylinders

P/N 06-16840 ..... $735.00

Same as set #06-16800 except with 1 laydown style master cylinder

P/N 06-16850 ..... $684.00

Same as set #06-16800 except with 2 laydown style master cylinders

P/N 06-16860 ..... $735.00

AVAILABLE SEPARATELY:

6" Wheel & Brake ..... P/N 06-16810 ..... $459.00

5" Nose wheel with 5/8" Bearings ..... P/N 06-16820 ..... $79.50

A-4 Axle, 9.75" Long, 5/8" Dia. ..... P/N 06-16830 ..... $46.50

AZUSA LITE NYLON WHEELS
4, 5 AND 6 INCH MODELS

Azusalite wheels are made from engineering grade Nylon which combines high tensile and compressive strengths and good impact resistance. Excellent for many homebuilt and ultralight aircraft applications since they weigh 60-70% less than aluminum wheels. Azusalite wheels are offered in 4", 5" and 6" models. Replacement parts and unlisted accessories available on request.

AZUSALITE 5" WHEEL – Used as the main wheels on the Mohawk ultralight, this 5 inch wheel features 5/8" I.D. sealed ball bearings and uses a 4.10 / 3.50 x 5 or 5.00 x 5 tire and tube.

P/N 06-02500 ..... $23.65

AZUSALITE 4" WHEEL – A 4 inch Azusalite wheel featuring 5/8" sealed ball bearings. Uses a 4.10 / 3.50 x 4 tire and tube.

P/N 06-02600 ..... $18.65

AZUSALITE 6" WHEEL – A 6 inch Azusalite wheel which comes complete with 5/8" sealed ball bearings. Uses a 4.10 / 3.50-6 or a 6.00-6 tire and tube. ..... P/N 06-02700 ..... $29.90

AZUSA TIRES & TUBES (SAWTOOTH TREAD)

4 .10 / 3.50 x 4 Tire & Tube

P/N 06-02800 ..... $20.85 Ea

4 .10 / 3.50 x 5 Tire & Tube

P/N 06-02900 ..... $24.00 Ea

4.10 / 3.50 x 6 Tire & Tube

P/N 06-03000 ..... $26.00 Ea

AZUSA RIBBED TIRE ROUND PROFILE RIBBED ROUND PROFILE

4.80 x 4.00 x 8 Tire & Tube ..... P/N 06-03010 ..... $26.50 Ea

AZUSA ALUMINUM WHEELS

5" AZUSA ALUMINUM WHEEL – Complete with 5/8" I.D. sealed bearing..... P/N 1144 ..... $26.50

5" AZUSA ALUMINUM WHEEL & BRAKE KIT – Kit consists of (2) #1144 wheels with 5/8" sealed bearings, (2) #2270 aluminum Azusa brakes, (2) #2211 brake drums (2) 11.400-5, 6-ply Lamb tires and Azusa #7131 (2) 340/300 x 5 tubes. P/N 06-03100 ..... $220.95

5" AZUSA ALUMINUM WHEEL – Complete with 3/4" bearing.

P/N 06-00376 ..... $34.50

6" AZUSA ALUMINUM WHEEL – Complete with 5/8" I.D. sealed bearings. Wt. 3.9 lbs. P/N 06-03200 ..... $39.95

6" AZUSA ALUMINUM WHEEL – Complete with 5/8" I.D. Timken bearings. Wt. 4.1 lbs. P/N 06-03300 ..... $59.50

6" AZUSA ALUMINUM WHEEL – Complete with 3/4" I.D. Timken bearings. Wt. 4.2 lbs. P/N 06-03400 ..... $48.50

8" AZUSA ALUMINUM WHEEL & BRAKE KIT – Kit consists of (2) #1175 wheels, (2)#2530 brakes, (2)#2542 drums, (2)4.80 x 4.00 tires and tubes, & hardware. P/N 06-03410 ..... $257.95

AZUSA BRAKES FOR AZUSA 5" & 6" WHEELS

These 4.5" brakes have a long actuating arm, 5/8" mounting hole, and bonded lining. Available in anchor style w/ built-in anchor & 2 cable mounting ears, or round style which features a round aluminum backing plate. Platform required w/ 5" Azusalite.

P/N	Description	Price
06-03415	Anchor Style Brake #2208	$39.90
06-03420	Round Style Brake #2270A	$32.50
01-00169	Brake Assy. 2272A (Right)	$37.60
01-00306	Brake Assy. 2272A (Left)	$37.75
06-03425	Brake Arm #2263	$1.28
06-03430	Spring #2264	$0.74
06-03435	Cam #8235	$4.65
06-03440	Platform #2259A	$6.50
06-03445	Lined Shoes (1/side) #2260	$19.50

AZUSA BRAKES FOR AZUSA 8" WHEELS

These 5" brakes are used on Azusa #1175 wheels only. Features a round aluminum backing plate and actuating arm which allows for 8 positions.

P/N	Description	Price
06-03450	Round Style Brake #2530	$35.75
06-03455	Brake Arm #2537	$4.75
06-03460	Spring #2539	$0.75
06-03465	Cam #2533	$7.95
06-03470	Lined Shoes (1/side) #2538	$18.65

AZUSA THREADED JACKSHAFTS

5/8-18 x 2" threads both ends, 3/16" keyway (full length of axles) black oxide plate x 8" Long.

P/N 06-01776 ..... $9.99

5/8-18 x 2" threads both ends, 3/16" keyway (full length of axles) black oxide plate x 10" Long.

P/N 06-01777 ..... $9.65

GROVE WHEEL & BRAKES

4 INCH WHEELS & BRAKES

P/N 40-101 Shown

Manufactured from aerospace grade aluminum

These 4" wheels are manufactured to the same exacting standards as the Grove 5" & 6" wheels.

They feature genuine Timken tapered roller bearings with felt grease seals.

40-1 wheel has 2-3/4" tire bead width.

40-3 wheel has 2-1/4" tire bead width.

GROVE WHEELS & BRAKES FEATURE:

- Aerospace grade materials
- Precision CNC machined
- Timken tapered roller bearings
- Felt grease seals
- Tubeless Option

From the chart below, select the proper static load rating, kinetic energy rating and brake torque for your aircraft.

Choose from Aluminum or Magnesium — Magnesium wheels weigh less than aluminum, but aluminum is more corrosion resistant. Both metals have similar strengths.

5 INCH WHEELS & BRAKES

P/N 57-124 Shown

Available in Aluminum or Magnesium

50 SERIES — Grove's basic 5" wheel.

51 SERIES — Lighter weight version of the 50 series.

55, 56 & 57 SERIES — Same wheel as the 50 series, but with heavier discs for greater kinetic energy and larger calipers for greater braking torque

6 INCH WHEELS & BRAKES

P/N 66-152 Shown

Available in Aluminum or Magnesium

60 SERIES — Grove's basic 6" wheel for 1-1/2" axles.

61 SERIES — Lighter weight version of the 60 series.

65 SERIES — Same as the 61 series, but for use with 1-1/4" axles.

66 SERIES — Same as the 60 series but with heavier discs for greater kinetic energy and larger calipers for greater braking torque.

LG

GROVE KIT NO.	OUR PART NO.	WHEEL NO.	STATIC LOAD RATING POUNDS	KINETIC ENERGY FT-LBS.	DISC THICK-NESS (INCHES)	BRAKING TORQUE INCH-LBS.	CALIPER NO.	PISTON DIA. (INCHES)	BRAKE PAD NO.	AXLE DIA. (INCHES)	WEIGHT LBS. (SEE REF. 1)	PRICE/ SET (SEE REF. 2)
FOUR INCH WHEELS AND BRAKES												
40-101	06-00858	40-3A	700	72,000	0.160	1,384	39-1A	1x1.250	66-106	0.75	4.05	$539.00
40-102	06-00859	40-1A	700	72,000	0.160	1,832	39-2A	1x1.438	66-106	0.75	4.16	$518.00
FIVE INCH WHEELS AND BRAKES												
50-101	06-00094	50-1A	1,285	120,149	0.190	2,364	30-1A	1x1.500	66-106	1.25	7.10	$687.00
50-201	06-00860	50-1M	1,285	120,149	0.190	2,364	30-1M	1x1.500	66-106	1.25	6.10	$698.00
51-101	06-00589	51-1A	800	120,149	0.190	2,364	30-1A	1x1.500	66-106	1.25	6.60	$680.00
51-201	06-00862	51-1M	800	120,149	0.190	2,364	30-1M	1x1.500	66-106	1.25	5.60	$720.00
55-112	06-00863	55-1A	1,285	162,315	0.250	3,283	31-2A	2x1.250	66-111	1.25	7.60	$781.00
55-212	06-00864	55-1M	1,285	162,315	0.250	3,283	31-2M	2x1.250	66-111	1.25	6.45	$734.00
56-113	06-00095	56-1A	1,285	205,146	0.313	3,283	31-3A	2x1.250	66-111	1.25	7.90	$758.00
56-213	06-00867	56-1M	1,285	205,146	0.313	3,283	31-3M	2x1.250	66-111	1.25	6.80	$780.00
57-124	06-00096	57-1A	1,285	246,175	0.375	4,345	32-4A	2x1.438	66-111	1.25	8.30	$812.00
57-224	06-00870	57-1M	1,285	246,175	0.375	4,345	32-4M	2x1.438	66-111	1.25	7.20	$857.00
SIX INCH WHEELS AND BRAKES												
60-162	06-00101	60-1A	1,750	206,406	0.250	5,052	36-2A	1x2.000	66-105	1.50	10.50	$893.00
60-262	06-00798	60-1M	1,750	206,406	0.250	5,052	36-2M	1x2.000	66-105	1.50	9.20	$914.00
61-111	06-00590	61-1A	1,200	170-149	0.190	3,947	31-1A	2x1.250	66-111	1.50	9.20	$898.00
61-211	06-00799	61-1M	1,200	170-149	0.190	3,947	31-1M	2x1.250	66-111	1.50	8.10	$936.00
65-203	06-01805	65-1M	1.250	170-149	0.190	3,868	30-3M	1X1.750	066-106	1.25	7.40	$982.00
65-207	06-00879	65-1M	1,250	170-149	0.190	3,868	30-7M	1x1.750	66-106	1.25	7.43	$912.00
65-211	06-00881	65-1M	1,250	170-149	0.190	3,947	31-5M	2x1.250	66-111	1.25	7.64	$906.00
65-222	06-00883	65-5M	1,250	206,406	0.250	5,219	32-6M	2x1.438	66-111	1.25	7.90	$899.00
66-152	06-00885	60-1A	1,750	206,406	0.250	7,735	35-6A	2x1.750	66-106	1.50	11.15	$979.00
66-154	06-00886	60-5A	1,750	280,188	0.375	7,735	35-4A	2x1.750	66-106	1.50	11.82	$1,061.00
66-252	06-00888	60-1M	1,750	206,406	0.250	7,735	35-6M	2x1.750	66-106	1.50	9.90	$1,043.00
66-254	06-00890	60-5M	1,750	280,188	0.375	7,735	35-4A	2x1.750	66-106	1.50	11.82	$1,047.00
67-174	06-00892	67-1A	2,500	280,188	0.375	7,735	37-8A	2x1.750	66-105	1.50	14.25	$1,428.00
67-274	06-00894	67-1M	2,500	280,188	0.375	7,735	37-4M	2x1.750	66-105	1.50	12.25	$1,516.00

NOTE: Braking torque calculated at 600 psi brake line pressure. Ref 1: Weight for one wheel, disc and caliper assy. Ref 2: Set includes two wheel assys.
"A" in wheel No. = Aluminum "M" in wheel No.= Magnesium

NOSE WHEELS

Genuine Aircraft Quality!

- Cast from aerospace grade materials
- Precision CNC Machined
- Timken Tapered Roller Bearings
- Felt Grease Seals

"GROVE P/N"	"OUR P/N"	WHEEL SIZE	STATIC LOAD RATING	AXLE DIA.	WEIGHT	PRICE
49-1A	06-00843	4 Inch	1,000 lbs	0.75"	1.98 lbs	$184.95
49-3A	06-00842	4 Inch	1,000 lbs	0.75"	1.87 lbs	$188.95
59-1A	06-00102	5 Inch	1,285 lbs	1.25"	3.90 lbs	$277.95
59-1M	06-00911	5 Inch	1,285 lbs	1.25"	2.90 lbs	$299.95
59-2A	06-00912	5 Inch	800 lbs	1.25"	3.40 lbs	$267.95
59-2M	06-00913	5 Inch	800 lbs	1.25"	2.40 lbs	$318.00
69-1A	06-00103	6 Inch	1,750 lbs	1.50"	6.00 lbs	$318.00
69-1M	06-00915	6 Inch	1,750 lbs	1.50"	4.80 lbs	$364.00

TUBELESS WHEELS

Brake Calipers utilize standard brake pads and O-ring seals. Discs are heat treated for longer life. Static Load Rating 1250 pounds per wheel. Kinetic Eneregy 168,934 ft-lb. Perfect for oversized tires such as the 26" Goodyear tire.
In the box:
2, 65-10 wheel assys
2, 32-1m caliper assys
2, 020-005 torque plate assys

Axle Diameter 1-1/4"
Static Load Rating 1,250lbs

P/N 06-00916.....$999.00

800X4 DISC BRAKE CONVERSION

STC Approved FAA-PMA

APPROVED MODELS INCLUDE:
J-3, J-4, J-5, PA-11, PA-12 PA-14, PA-15 PA-16, PA-17PA-18, PA-19 PA-20
Good news for owners of early Piper aircraft. Say good-bye to brake expander tube problems forever!

- No more soft brake pedal • Easy Installation
- Improved braking and ground handling

Maintain the classic cub look by installing modern disc brakes on your existing 800x4 wheels and tires. Use your existing wheels, tires, tubes, master cylinders and brake lines.

STC Kit comes complete with all parts, special tools and STC documentation. Installation requires only standard hand and rivet tools. No modifications are required to be made on the gear leg, or any other part of the aircraft.
P/N 06-00837.....$889.00

AXLE SHIMS

Reduce Tire Wear
Improve Ground Handling

TOE-IN/OUT REALIGNMENT SHIMS

Install these axle shims between your landing gear and axles to insure that your tires track true. Correct any misalignment of toe-in or out in 1/4° increments. Precision machined from 6061-T6 aluminum.

Price $23.50 each.

Correction	500X5	600X6
1/4°	06-00925	06-00928
1/2°	06-00926	06-00929
3/4°	06-00927	06-00930

CAMBER ADJUSTMENT SHIMS

Adjust the vertical alignment of your wheels with these camber adjustment shims. Precision machined from 6061-T6 aluminum.

Price: $23.50 each.

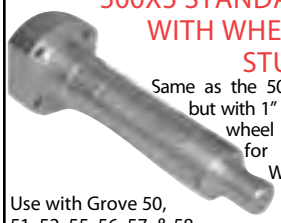
Correction	500X5	600X6
1/2°	06-00931	06-00934
1°	06-00932	06-00935
2°	06-00933	06-00936

500X5 STANDARD AXLE

Precision CNC machined from 2024-T3 aluminum with clear anodized protective finish Weight 0.92 lbs. 1.25" diameter Static Load Rating 1,285 lbs.

Use with Grove 50, 51, 52, 55, 56, 57, & 58 and Cleveland 500x5 P/N 06-00917.....$52.75

500X5 STANDARD AXLE WITH WHEEL PANT STUB



Same as the 500x5 standard axle but with 1" extension to attach wheel pant. End tapped for 1/4-28 screw Weight 0.95lb.

Use with Grove 50, 51, 52, 55, 56, 57, & 58 and Cleveland 500x5 wheels.
P/N 06-00601.....$59.75

600X6 STANDARD AXLE

Precision CNC machined from 2024-T3 aluminum with clear anodized protective finish Weight 1.28 lbs. 1.50" diameter Static Load Rating 1,750lbs

Use with Grove 60, 61, & 66 and Cleveland 600x6 wheels
P/N 06-00919.....$76.75

600x6 STANDARD AXLE WITH WHEEL PANT STUB

Same as the 600x6 standard axle but with 2" extension to attach wheel pant. End tapped for 1/4-28 screw Weight 1.43lb.

Use with Grove 60, 61, & 66, and Cleveland 600x6 wheels. P/N 06-00602.....$82.75

400X4 AXLES

Use with Grove 40-1A Wheel Weight 0.37 lbs.
P/N 06-00921.....$54.75
Use with Grove 40-3A Wheel Weight 0.38lbs
P/N 06-00922.....$56.85

Solid 7075-T6 aluminum with clear anodized finish. Diameter 0.75" Static Load Rating 700 lbs.

1-1/4" DIAMETER 600X6 AXLES

Same construction as the above axles, but with 1.25" diameter Use with Grove 65 Series Wheels.

With wheel pant stub.....P/N 06-00923.....$76.99
Without stub.....P/N 06-00924.....$73.85

GROVE MASTER BRAKE CYLINDERS

Clevis End—3/16" hole, 1/4" wide slot

Eye Bolt End—3/16" hole, 1/2" head diameter

Eye Bolt End - 3/16" hole, 3/8" head diameter

These master cylinders are the perfect choice for all Grove brake systems as well as use with other major brands that require a high pressure master cylinder. Consider the following when selecting the proper master cylinder for your aircraft:

1.The style (with or without integral reservoir, etc.)

2.The pin-to-pin length—this is the length between the upper and lower attach holes.

3.The attach type for the upper end (clevis, or eye bolt)

4.The attach type for the lower end (cross drilled, slotted, etc.)

REMOTE BRAKE FLUID RESERVOIRS

Quality machined from 6061 billet. Top is retained by snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance.

2.75" high 1.75" diameter Holds 2.42 fluid ozs. Weighs 3.6 ounces.

Designed to attach to firewall or other remote location. Adequate capacity to serve both master cylinders. Outlet has 1/8" female NPT thread at bottom of reservoir.

067-054 .....P/N 06-00819 .....$39.95

Normal installation requires two (one for each master cylinder.) Supplied with 1/8" NPT fitting. Attaches directly to your master cylinder. 1.98" high; 1.38" diameter Holds 1.10 fluid ounces Weighs 1.5 ounces.

067-050

P/N 06-00818.....$29.90

Cross Drilled - 3/16" holes inline with fitting and also 90° to fitting

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
670-1	06-00594	7.5"	Clevis	Inline	5.9 oz.	$178.85
670-2	06-00866	8.0"	Clevis	Inline	6.2 oz.	$178.95
670-3	06-00104	7.5"	Clevis	90° Offset	5.9 oz.	$179.50
670-4	06-00869	8.0"	Clevis	90° Offset	6.2 oz.	$179.00
670-8	06-01286	7.25"	Clevis	90° Offset	5.9 oz.	$188.95
670-13	06-00871	8.0"	3/8" Eye Bolt	90° Offset	6.2 oz.	$188.95
670-14	06-00872	8.0"	3/8" Eye Bolt	Inline	6.2 oz.	$188.95
670-15	06-00596	8.0"	1/2" Eye Bolt	90° Offset	6.2 oz.	$188.95
670-16	06-00873	7.5"	1/2" Eye Bolt	90° Offset	5.9 oz.	$188.95
670-17	06-00597	8.0"	1/2" Eye Bolt	Inline	6.2 oz.	$188.95
670-18	06-00875	7.5"	1/2" Eye Bolt	Inline	5.9 oz.	$188.95
670-19	06-00877	7.5"	3/8" Eye Bolt	90° Offset	5.9 oz.	$189.99
670-20	06-00878	7.5"	3/8" Eye Bolt	Inline	5.9 oz.	$188.95

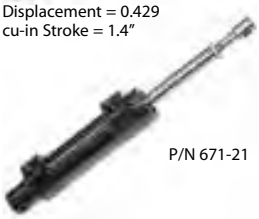
Displacement = 0.429 cu-in Stroke = 1.4"

P/N 670-1

90° Offset - 3/16" hole drilled 90° to fitting. Tab is inline with fitting.

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
671-20	06-00880	7.5"	1/2" Eye Bolt	Cross Drilled	5.9 oz.	$188.95
671-21	06-00882	7.5"	3/8" Eye Bolt	Cross Drilled	5.9 oz.	$188.95
671-22	06-00884	8.0"	1/2" Eye Bolt	Cross Drilled	6.2 oz.	$188.95
671-23	06-00887	8.0"	3/8" Eye Bolt	Cross Drilled	6.2 oz.	$188.95

Displacement = 0.429 cu-in Stroke = 1.4"



P/N 671-21

Inline -3/16" hole drilled inline with fitting Tab is offset 90° to fitting

Grove P/N	P/N	Pin-to-Pin Length	Upper Attachment	LowerAttachment	Weight	Price
672-1	06-00889	5.0"	Clevis	Cross Drilled	4.0 oz.	$179.85
672-2	06-00891	5.5"	Clevis	Cross Drilled	4.2 oz.	$178.50
672-3	06-00893	6.0"	Clevis	Cross Drilled	4.5 oz.	$180.75

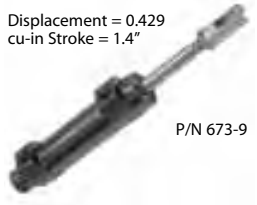
Displacement = 0.236 cu-in Stroke = .77"

P/N 672-1

Slotted -0.090" slot inline with fitting. 3/16" hole drilled 90° to fitting.

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
673-9	06-00895	7.5"	Clevis	Cross Drilled	5.9 oz.	$188.99
673-10	06-00896	8.0"	Clevis	Cross Drilled	6.2 oz.	$188.75
673-11	06-00897	7.5"	1/2" Eye Bolt	Left Offset	5.9 oz.	$188.75
673-12	06-00898	7.5"	1/2" Eye Bolt	Right Offset	5.9 oz.	$188.75
673-13	06-00899	7.5"	1/2" Eye Bolt	Slotted 90°	5.9 oz.	$188.95
673-14	06-00901	7.5"	1/2" Eye Bolt	Slotted Inline	5.9 oz.	$188.75

Displacement = 0.429 cu-in Stroke = 1.4"



P/N 673-9

Right Offset Tab 3/16" hole drilled 90° to fitting

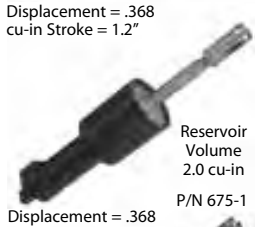
Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
674-1	06-00902	7.5"	Clevis	Cross Drilled	5.0 oz.	$178.85
674-2	06-00903	8.0"	Clevis	Cross Drilled	5.0 oz.	$190.75
674-3	06-00904	7.0"	Clevis	Cross Drilled	5.0 oz.	$179.95

Displacement = 0.429 cu-in Stroke = 1.4"

P/N 674-1

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
675-1	06-00097	8.0"	Clevis	Inline	8.1 oz.	$197.90
675-2	06-00905	7.5"	Clevis	Inline	7.9 oz.	$198.75
675-3	06-00593	8.0"	Clevis	90° Offset	8.1 oz.	$197.75
675-4	06-00906	7.5"	Clevis	90° Offset	7.9 oz.	$198.75

Displacement = .368 cu-in Stroke = 1.2"



Reservoir Volume 2.0 cu-in

P/N 675-1

Left Offset Tab 3/16" hole drilled 90° to fitting

Grove P/N	Our P/N	Pin-to-Pin Length	Upper Attachment	Lower Attachment	Weight	Price
676-1	06-00907	8.0"	Clevis	Inline	9.3 oz.	$218.95
676-2	06-00908	7.5"	Clevis	Inline	9.0 oz.	$215.95
676-3	06-00909	8.0"	Clevis	90° Offset	9.3 oz.	$217.95
676-4	06-00910	7.5"	Clevis	90° Offset	9.0 oz.	$215.95

Displacement = .368 cu-in Stroke = 1.2"

Reservoir Volume 3.05 cu-in

P/N 676-1

All master cylinders have a 5/8" bore, 1/8" NPT outlets, are rated at 1,000 psi for use with MIL-H-5606 hydraulic fluid.

LG

BERINGER WHEEL & BRAKE KITS

Upgrade your aircraft and save up to 9 lbs with high performance BERINGER® wheels and brakes. Complete main wheel and brake sets are designed to mount directly, replacing original equipment. Wheels are aluminum red anodized, fully CNC machined, with O-rings for Tubeless mounting.
Brake calipers use sintered metallic pads and stainless steel discs for increased lifetime.
The kit includes: 2 main wheels with brakes and stainless steel discs, tubeless tires (mounted and pressure tested), bolt-on axles, master cylinders, fluid reservoirs, hydraulic anti-skid, stainless steel brake lines and fittings and detailed installation manual.
If your aircraft is not listed below, please ask for a special quotation, we can equip 99% of the existing aircraft.

COMPLETE WHEEL AND BRAKE KITS

Beringer Part No.	Our Part No.	Aircraft Type	Wheel Assy.	Standard Tire (Other Size and Quality Available)	Price
FOR EXPERIMENTAL AIRCRAFT					
SLC04	06-01619	Lancair 320/360 (retractable LG)	JA-52-HE1	TL 11x4.00-5" 8PLY Aero Classic	$2,777.00
SLC01	06-01094	Lancair Legacy (retractable LG)	JA-51-HE2	TL 5.00-5"10PLY Condor	$3,075.00
SGL02	06-01622	Glasair III (retractable LG)	JA-51-HE2	TL 5.00-5"10PLY Condor	$3,075.00
SFA01	06-01623	Falco	JA-51-HE2	TL 5.00-5"10PLY Condor	$2,903.00
SLE01	06-02026	Long'Ez / Vari'Ez	JA-51-HE1	TL 5.00-5"10PLY Condor	$2,813.00
SLC05	06-02027	Cozy	JA-51-HE2	TL 5.00-5"10PLY Condor	$3,075.00
SJU05	06-02028	Jabiru J400/430	JA-51-HE2	TL 5.00-5"10PLY Condor	$2,742.00
FOR ULTRALIGHT AIRCRAFT AND LSA					
SRA02	06-01626	RANS Coyote (axle bolted with screws)	JAA01-SL	TL 15x6.00-6" 6PLY Sava	$2,747.00
SRA01	06-01627	RANS Coyote (axle bolted with flange)	JAA01-SL	TL 15x6.00-6" 6PLY Sava	$2,747.00
SPP01	06-01628	Pipistrel Sinus, Virus	JAA02-SL	4.00-6" 6PLY Sava	$2,471.00
SSK01	06-01629	Skyranger - Nynja	JAA02-SL	4.00-6" 6PLY Sava	$2,351.00
SSA01	06-01097	Zlin Savage (tire < 29 ")	JAA01-SL	w/o tires	$2,613.00
SSA02	06-01759	Zlin Savage (tire > 29 ") + 2 extra calipers	JAA01-SL	w/o tires	$2,991.00
SEU01	06-01761	Evektor Eurostar/Sportstar	JAA02-SL	4.00-6" 6PLY Sava	$2,505.00
SBR01	06-01762	Breezer	JA-01	TL 5.00-5"10PLY Condor	$2,555.00
SFD01	06-01763	Flight Design CTSW	JAA02-SL	TL 15x6.00-6" 6PLY Sava	$2,284.00
SPT01	06-01764	Tecnam P92	JAA02-SL	4.00-6" 6PLY Sava	$2,161.00
SPT02	06-01765	Tecnam P2008	JA-51-HE1	TL 5.00-5"10PLY Condor	$2,720.00
SZH05	06-01766	Zenair (all type)	JAA01-SL	TL 15x6.00-6" 6PLY Sava	$2,776.00
SBM02	06-02024	BRM XL8 (Bristell)	JA-01	TL 5.00-5"10PLY Condor	$2,549.00
SSC01	06-02025	TL Sting Carbon	JA-02	TL 11x4.00-5" 8PLY Aero Classic	$2,417.00
FOR VAN'S AIRCRAFT					
SRVFU01	06-01767	Fuselage kit-RV6,7,8,9-Basic set			$1,001.00
SRVFU02	06-01768	Fuselage kit-RV6,7,8,9-Basic set + copilot brakes			$1,581.00
SRVFU03	06-01769	Fuselage kit-RV6,7,8,9-Basic set + parking brake			$1,421.00
SRVFU04	06-01770	Fuselage kit-RV6,7,8,9-Basic set + parking brake + copilot brakes			$1,969.00
SRVFI02	06-01772	Finishing kit-RV6,7,8,9-Main wheels	JA-61	TL 5.00-5"10PLY Condor	$2,221.00
SRVFI03	06-01773	Finishing kit-RV8 Grove LG-Main wheels	JA-51-HE1	TL 5.00-5"10PLY Condor	$2,145.00

OPTIONS - CAN BE ORDERED SEPARATELY

Beringer Part No.	Our Part No.	Option	Description	Price
PKG01	06-02012	Parking brake valve kit	Provided with extra hose and fittings	$472.00
COP01	Call	Copilot brakes	Provided with extra hose and fittings	Call for Price
ZJB01	Call	Wheel caps (set of 2)	Available in different size	Call for Price
--	Call	Front wheel/Tail wheel	See hereunder, provided with tire and bolt on aluminum axle	Call for Price

FRONT WHEEL / TAIL WHEEL KITS – SPECIAL AXLE FOR EACH AIRCRAFT

Beringer Part No.	Our Part No.	Description	Wheel Assy.	Standard Tire (Other Size and Quality Available)	Weight (lbs.)	Price
SST02	06-02014	Front wheel 4.00-5"	JB-02	TL 11x4.00-5" 8PLY Aero Classic	6.36	$498.00
SST03	06-02016	Front wheel 5.00-5"	RA-002	TL 5.00-5" 10PLY Condor	8.78	$649.00
SST04	06-02017	Front wheel 4.00-6"	RA-009	TL 13x5.00-6" 8PLY Sava	6.23	$558.00
SST05	06-01633	Front wheel 3.50-4"	RA-003	4.00-4" 4PLY Kenda Axle Dia 0.24"	3.70	$354.00
SST10	06-02018	Tailwheel for replacement on Matco fork	RA-003	2.80/2.50-4" 4PLY Kenda	2.53	$354.00
SST11	06-02019	Tailwheel for replacement on Scott fork	RA-003	2.80/2.50-4" 4PLY Kenda	2.53	$354.00
JC-01	06-00957	Tailwheel for Pipistrel Sinus/Taurus	JC-01	200x50 with tube	1.83	$246.00

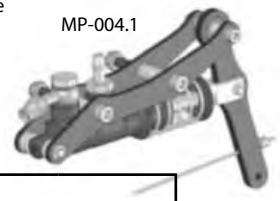
SUPPLEMENTAL TYPE CERTIFICATE – DELIVERED WITH AN EASA FORM1

Beringer Part No.	Our Part No.	Description	Price
STC-003	06-02020	Complete wheel and brake kit for Centrair Pegasus	$1,527.00
STC-004	06-02021	*FAA Approved Complete wheel and brake kit for Cirrus SR20/22 – Dual caliper system	$7,559.00
STC-005	06-02022	Complete wheel and brake kit for Schleicher ASW20	$1,527.00
STC-007	06-02023	Complete wheel and brake kit for Schempp-Hirth Ventus/Discus 2a	$1,542.00

BERINGER MASTER BRAKE CYLINDERS

These master cylinders have been designed for a very long life and ensure very long trouble free service. We have tested them at 200,000 cycles with success (twice the life of the aircraft).
The piston is protected from dust by a lipseal.
· available for DOT4 fluid OR for MINERAL (MIL FLUID) (seals are different, never mix)
· high quality aluminum alloy machined from solid on CNC
· 100% protected from corrosion: anodized coating and stainless steel components
· Light weight: more than 30% of weight saving compare to standard master cylinder
· Ultralow friction for improved efficiency

MP-004.1



MP-004.4

MP-002+ZM-001+ZM-001

MP-002+CHP-003+ZM-001

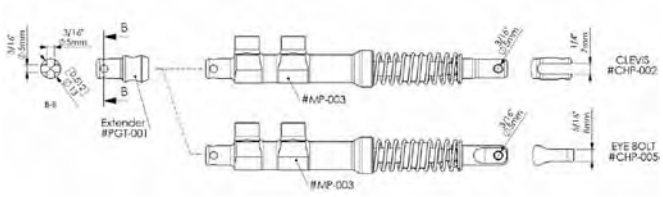
HAB02

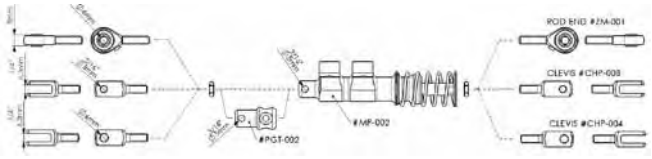
RUDDER MASTER CYLINDER ASSEMBLY

Beringer P/N	Our P/N	Assembly			Pin-to-pin length (in)		Weight (oz)	Price
		Body	Upper attachement	Lower attachement	Max	Min		
MCA-010	06-01997	MP-001N	-	PGT-001	8.94	8.19	5.9	$227.00
MCA-020	06-01998	MP-002N	ZM-001	-	5.63	5.43	4.1	$187.00
MCA-021	06-01999	MP-002N	CHP-003	-	5.67	5.51	3.8	$184.00
MCA-022	06-02001	MP-002N	ZM-001	ZM-001	6.97	6.5	4.9	$205.00
MCA-023	06-02002	MP-002N	ZM-001	CHP-003	6.93	6.54	4.6	$202.00
MCA-024	06-02003	MP-002N	CHP-003	ZM-001	6.93	6.46	4.6	$202.00
MCA-025	06-02004	MP-002N	CHP-003	CHP-003	6.93	6.65	4.3	$199.00
MCA-030	06-02005	MP-003N	CHP-002	-	7.52	7.24	4.25	$194.00
MCA-031	06-02006	MP-003N	CHP-005	-	7.52	7.24	4.3	$194.00
MCA-032	06-02007	MP-003N	CHP-002	PGT-001	8.27	7.99	4.55	$212.00
MCA-033	06-02008	MP-003N	CHP-005	PGT-001	8.27	7.99	4.6	$212.00

LEVER MASTER CYLINDERS (TO BE MOUNTED WITH 1 OR 2 MP-002N+CHP-003)

Beringer P/N	Our P/N	Description	Weight (oz)	Price
MP-004.1	06-01754	Single lever kit - cable operated	5.6	$78.90
MP-004.2	06-01755	Dual lever kit - cable operated	11.2	$147.75
MP-004.3	06-01756	Single lever kit - hand operated	4.8	$90.75
MP-004.4	06-01757	Dual lever kit - hand operated	9.6	$170.75
HAND MASTER CYLINDER				
HAB02N	06-01486	Hand brake master cylinder with integrated reservoir and parking brake	11	$377.00





INTEGRAL BRAKE FLUID RESERVOIR

- Vertical or horizontal mounting
- Available for DOT4 or MIL Fluid
- CNC machined from aluminum billet
- Incorporates tight bellows
- Attached directly to the master cylinder
- 100% tight, no leak, perfect for aerobatic use

Beringer P/N	Our P/N	Description	Weight (oz)	Price
HFA02N	06-01644	Integral reservoir CNC machined	1.94	$69.00
HFA03N	06-01643	Integral reservoir CNC machined	1.59	$69.00
HFA04N	06-02010	Integral reservoir CNC machined	1.27	$69.00
HFA05N	06-02011	Integral reservoir CNC machined	1.31	$108.00

LG

CLEVELAND BRAKE DISCS

CLEVELAND BRAKE DISCS

If your aircraft is flown a lot (more than 200 hours a year) and is not exposed to exceptionally corrosive atmospheres, Cleveland Standard discs are the ideal replacement when normal brake wear requires it.

Cleveland Chrome brake discs are the answer for owners of aircraft that are exposed to the elements (moisture, salt, industrial chemicals) and are not flown frequently enough to rub off corrosion. If you fly less than 200 hours a year, your aircraft spends more than 8,500 idle hours exposed to the elements. Standard and Chrome Cleveland brake discs are fully FAA approved as replacements on virtually all popular single engine aircraft.

Aircraft Model	Main Wheel Ass'y	Standard Disc	Price Each	Chrome Disc	Price Each
Homebuilts	500x5 40-78B	164-17	$159.75	164-117	$286.00
Homebuilts	600x6 40-59A	164-75	$167.85	164-175	$687.50
General (High Energy)	40-151A	164-08500	$162.75	---	---
General (Increased Energy)	40-230	164-09900	$172.90	---	---
Aerotek (Pitts) S-1 Series, S-2A	500x5 40-78B	164-17	$159.75	164-117	$286.00
Bonanza F33A, F33C, A36, A36TC, B36TC	600x6 40-83A, 40-83B	164-02505	$167.85	164-125B	$797.00
Bellanca Citabria,Decathlon	600x6 40-28D	164-5	$142.95	164-105	$498.00
Bellanca Champ	600x6 40-78B	164-17	$159.75	164-117	$286.00
Viking 300A	600x6 40-75E	164-15A	$169.95	164-115A	$419.00
Cessna 150C	600x6 40-57	164-5	$142.95	164-105	$498.00
Cessna 150D,E	500x5 40-78	164-17	$159.75	164-117	$286.00
Cessna 150F,G,H,J	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
Cessna 150K	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
Cessna A150K, F150, FA150	600x6 40-113	164-40	$124.75	164-140	$239.95
Cessna 152, F152, FA152	600x6 40-113	164-40	$124.75	164-140	$239.95
Cessna 172	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
	600x6 40-113	164-40	$128.75	164-140	$239.95
Cessna 177,177RG, F177RG	600x6 40-113	164-40	$124.75	164-140	$239.95
Cessna 177A, B	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
Cessna 180	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
	600x6 40-75D	164-63	---	164-163	---
	600x6 40-66	164-7	$176.85	164-107	$305.95
Cessna 182H, J, K, L, M, N	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
Cessna 182N	600x6 40-113	164-40	$124.75	164-140	$239.95
Cessna 182J, K, L, N,	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
Cessna 185, A, B	600x6 40-32	164-7	$176.85	164-107	$305.95
	600x6 40-66	164-7	$176.85	164-107	$305.95
Cessna 185C, D, E	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Cessna A185E 1966 & Up	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
1969 & Up	600x6 40-75D	164-36	$159.00	164-136	$297.00
1967, 1968	600x6 40-66	164-7	$176.85	164-107	$305.95
Cessna 188, A188	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Cessna 205, 205A	600x6 40-67	164-7	$176.85	164-107	$305.95
	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Cessna 206, U206A, TU206A & Turbo	600x6 40-75	164-15A	$169.95	164-115A	$419.00
Cessna U206D, D & Turbo	600x6 40-75D	164-36	$159.00	164-136	$297.00
Cessna P206, A, TP206A	600x6 40-75	164-15A	$169.95	164-115A	$419.00
Cessna P206, A,B,C,D,& Turbo	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Cessna P206D,E,Turbo & Super Skylane	600x6 40-75D	164-36	$159.00	164-136	$297.00

Aircraft Model	Main Wheel Ass'y	Standard Disc	Price Each	Chrome Disc	Price Each
Cessna 207, T207	660x6 40-75B	164-15A	$169.95	164-115A	$419.00
	600x6 40-75D	164-36	$159.00	164-136	$297.00
Cessna Caravan 1, & 208B	40-179	164-22201	$274.50	---	---
Cessna 210C	600x6 40-21	164-9	$152.85	164-109	$293.00
Cessna 210 series P210, T210	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Cessna 210N, P210N	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Cessna 336 Series	600x6 40-67	164-7	$176.85	164-107	$305.95
1963-1965	600x6 40-75B	164-15A	$169.95	164-115A	$419.00
Gulfstream AA-1, A, B, AA-5,	600x6 40-86A	164-20	$109.75	164-120	$208.75
Gulfstream AA-1,A,B,AA-5, AA-5B, TR2	600x6 40-88C	164-20	$109.75	164-120	$208.75
Helio H-295, 395,	600x6 40-75E	164-15A	$169.95	164-115A	$419.00
391	600x6 40-75D	164-36	$159.00	164-136	$297.00
Maule M4, M5 Series	600x6 40-97D	164-26A	$128.75	164-126A	$227.95
Mooney M20A, M20B	600x6 40-24	164-9	$152.85	164-109	$293.00
Mooney 20C	600x6 40-86	164-20	$109.75	164-120	$208.75
Mooney 20D, E	600x6 40-24	164-9	$152.85	164-109	$293.00
Mooney 20D, F,G,J,K	600x6 40-86	164-20	$109.75	164-120	$208.75
Piper PA22-108	600x6 40-28	164-5	$142.95	164-105	$498.00
Piper PA24-180,250	600x6 40-58	164-9	$152.85	164-109	$293.00
Piper PA24-260	600x6 40-84	164-19	$149.85	164-119	$386.95
Piper PA25	600x6 40-84A	164-33	$173.95	164-133	$911.00
Piper PA28 Series Cherokee/Warrior	600x6 40-28	164-20	$109.75	164-120	$52.90
Piper PA32 Series	600x6 40-120C (1)	164-21600	$172.85	---	---
(1) Heavy duty	600x6 40-120(1)	164-21600	$172.85	---	---
Archer	600x6 40-86	164-20	$109.75	164-120	$208.75
Pathfinder	600x6 40-86B	164-20	$109.75	164-120	$208.75
Cherokee	600x6 40-58	164-9	$152.85	164-109	$293.00
Cherokee/Arrow	600x6 40-84	164-19	$149.85	164-119	$386.95
Dakota	600x6 40-86	164-20	$109.75	164-120	$208.75
	600x6 40-86B	164-20	$109.75	164-120	$208.75
Piper PA32 Series	600x6 40-90A	164-23	$165.50	164-123	$272.95
Piper P34 Series	600x6 40-90A	164-23	$165.50	164-123	$272.95
Piper PA38-112	500x5 40-78B	164-17	$159.75	164-117	$286.00
Piper PA44	600x6 40-90A	164-23	$165.50	164-123	$272.95
Rockwell Int. 112, 112A, B	600x6 40-113A	164-43	$157.75	164-143	$696.00
112B, TC, TCA114	600x6 40-75H	164-15A	$169.95	164-115A	$419.00
Schweizer SGS1-34	500x5 40-78B	164-17	$159.75	164-117	$286.00
Spencer Amph. S12E	600x6 40-74	164-7	$176.85	164-107	$305.95
Taylorcraft F-19	600x6 40-86	164-20	$109.75	164-120	$208.75
Varga 2150A	600x6 40-97E	164-26A	$128.75	164-126A	$227.95
Waco	600x6 40-97A	164-26A	$128.75	164-126A	$227.95
Wing Derringer	600x6 40-84	164-19	$149.85	164-119	$386.95

REPLACEMENT DISCS & LININGS FOR CESSNA/MCCAULEY WHEELS & BRAKES

Cessna Aircraft Model	Cessna/McCauley Wheel Assembly	Cessna/McCauley Brake Disc Assy.	Cleveland Brake Disc Assy.	Price
150, 150A	C163004-0104	B-30440	164-09200	$139.75
	C163003-0101			
	or C163001-0102	B-30195	164-09300	$104.90
	C163002-0101	B-30007	164-09400	---------
152, A152, F152, FA152	C163005-0101	---------	---------	---------
	or C163006-0101	C30615-1	164-08800	$128.75
172, F172, R172, FR172	C163004-0104	B-30440	164-09200	$139.75
	C163003-0101	---------	---------	---------
	or C163003-0102	B-30195	164-09300	$104.90
	or C163004-0104	---------	---------	---------
	C163002-0101	B-30007	164-09400	---------
172, F172, 172RG	C163006-0101	C30615-1	164-08800	$128.75
177	C163005-0101	C30615-1	164-08800	$128.75
177RG	C163005-0101	---------	---------	---------
	or C163006-0101	C30615-1	164-08800	$128.75
180, 185	C163004-0103	---------	---------	---------
	C163004-0101	C30388	164-09700	$152.95
	C163006-0103 Std.	C30615-3	164-9	$152.85
	C163006-0102 HD	C30615-2	164-08900	$163.90
182, F182	C163006-0101	---------	---------	---------
	or C163006-0103	C30615-1	164-08800	$128.75
R182, FR182, TR 182	C163006-0103	C30615-3	164-9	$152.85
U206-TU206	C163004-0102	C30398	164-09600	$138.75
	C163004-0101	C30388	164-09700	$152.95
	C163006-0103 Std.	C30615-3	164-9	$152.85
	C163006-0102 HD	C30615-2	164-08900	$163.90
210, T210, P210	C163006-0103	C30398	164-09600	$138.75
	C163006-0103	C30615-3	164-9	$152.85

RAPCO BRAKE DISCS

RAPCO FAA-PMA approved replacement brake disc for Cleveland and McCauley brake assemblies offer premium quality in a direct replacement disc. All disc are one piece forged for optimum strength and resistance to cracking, then heat treated to a specific hardness for a long service life. They are precision CNC machined, laser etched with permanent identification markings and then nickel plated for corrosion resistance. A final machining on the wear surface assures trueness and offers an optimum absorption of kinetic energy for performance braking. When installing new brake discs always use new linings. For application guide, cross reference or product guide photos, please visit our web site at www.aircraftspruce.com.

OEM P/N	Superseded	RAPCO P/N	Our P/N	Price Ea.
Cleveland Style Brake Disc				
164-00206	164-2F	RA164-00206	06-00610	$176.85
164-00300	164-3	RA164-00300	06-01682	$86.75
164-00400	164-4	RA164-00400	06-00118	$86.75
164-00500	164-5	RA164-00500	06-00612	$89.75
164-00700	164-7	RA164-00700	06-00613	$106.75
164-00806	164-8F	RA164-00806	06-01520	$174.75
164-00900	164-9	RA164-00900	06-00614	$93.90
164-01000	164-10	RA164-01000	06-00615	$107.75
164-01300	164-13	RA164-01300	06-01683	$103.85
164-01406	164-14F	RA164-01406	06-01685	$167.75
164-01501	164-15A	RA164-01501	06-00616	$87.75
164-01506	164-15F	RA164-01506	06-01686	$89.95
164-01600	164-16	RA164-01600	06-00617	$89.75
164-01700	164-17	RA164-01700	06-00618	$81.75
164-01900	164-19	RA164-01900	06-00619	$81.75
164-02000	164-20	RA164-02000	06-00620	$79.90
164-02201	164-22A	RA164-02201	06-00621	$81.75
164-02300	164-23	RA164-02300	10-03107	$84.75
164-02504	164-25A	RA164-02504	06-00622	$83.75
164-02505	164-25C	RA164-02505	10-03106	$86.75
164-02601	164-26A	RA164-02601	06-00623	$81.75
164-02706	164-27F	RA164-02706	06-01496	$122.75
164-02707	164-27G	RA164-02707	06-01687	$135.75
164-02800	164-28	RA164-02800	06-00624	$108.75
164-03006	164-30F	RA164-03006	06-00414	$183.75
164-03106	164-31F	RA164-03106	06-01129	$229.95
164-03206	164-32F	RA164-03206	06-00625	$162.75
164-03300	164-33	RA164-03300	06-00626	$84.80
164-03506	164-35F	RA164-03506	06-01688	$168.75
164-03601	164-36A	RA164-03601	06-00627	$86.75
164-03906	164-39F	RA164-03906	06-01689	$263.95
164-04000	164-40	RA164-04000	06-00628	$83.75
164-04300	164-43	RA164-04300	06-00629	$87.75
164-04406	164-44F	RA164-04406	06-01691	$173.75
164-04800	164-48	RA164-04800	06-01692	$115.75
164-05006	164-50F	RA164-05006	06-01693	$223.95
164-05500	164-55	RA164-05500	06-01694	$255.95
164-05700	164-57	RA164-05700	06-00630	$183.75
164-05806	164-58F	RA164-05806	06-01128	$176.75
164-06106	164-61F	RA164-06106	06-01695	$183.75

RAPCO BRAKE DISCS

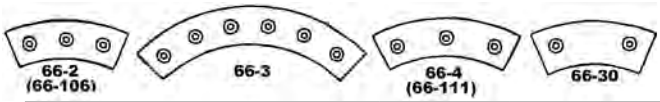
OEM P/N	Superseded	RAPCO P/N	Our P/N	Price Ea.
164-06306	164-63F	RA164-06306	06-01696	$269.95
164-06406	164-64F	RA164-06406	06-01697	$269.95
164-06506	164-65F	RA164-06506	06-01698	$201.95
164-06700	164-67	RA164-06700	06-01699	$105.75
164-06900	164-69	RA164-06900	06-00631	$106.75
164-07200	164-72	RA164-07200	06-01701	$259.95
164-07400	164-74	RA164-07400	06-01703	$269.95
164-07500	164-75	RA164-07500	06-00632	$120.75
164-07700	164-77	RA164-07700	06-01704	$233.95
164-07800	164-78	RA164-07800	06-00633	$118.75
164-07906	164-79F	RA164-07906	06-01705	$237.95
164-08100	164-81	RA164-08100	06-01706	$132.75
164-08200	164-82	RA164-08200	06-01707	$121.75
164-08300	164-83	RA164-08300	06-01708	$103.85
164-08406	164-84F	RA164-08406	06-01709	$149.75
164-08500	164-85	RA164-08500	06-01711	$94.75
164-09100	164-91	RA164-09100	06-01712	$233.95
164-09900	164-99	RA164-09900	06-01311	$96.75
164-20206	164-202F	RA164-20206	06-01713	$231.95
164-20306	164-203F	RA164-20306	06-01714	$231.95
164-20500	164-205	RA164-20500	06-01715	$125.75
164-20600	164-206	RA164-20600	06-01716	$247.95
164-20700	164-207	RA164-20700	06-01717	$263.95
164-20806	164-208F	RA164-20806	06-01718	$205.95
164-20900	164-209	RA164-20900	06-01719	$237.95
164-21000	164-210	RA164-21000	06-01720	$173.75
164-21100	164-211	RA164-21100	06-01721	$213.95
164-21200	164-212	RA164-21200	06-01722	$124.75
164-21600	164-216	RA164-21600	06-00634	$103.75
164-21900	164-219	RA164-21900	06-01723	$255.95
164-22000	164-220	RA164-22000	06-01724	$281.95
164-22201	164-222A	RA164-22201	06-01725	$199.75
164-22202	164-222B	RA164-22202	06-01566	$273.95
164-22400	164-224	RA164-22400	06-01726	$379.00
164-22900	164-229	RA164-22900	06-01727	$282.95
164-23000	164-230	RA164-23000	06-01728	$404.00
164-24200	-	RA164-24200	06-01595	$89.75
164-24400	-	RA164-24400	06-01594	$94.75

OEM P/N	Superseded	RAPCO P/N	Our P/N	Price Ea.
McCauley Style Brake Disc				
164-30195	B-30195	RA164-30195	06-00579	$86.75
164-30388	C-30388	RA164-30388	06-00584	$90.80
164-30398	C-30398	RA164-30398	06-00588	$85.75
164-30414	C-30414	RA164-30414	06-01732	$88.90
164-30440	B-30440	RA164-30440	06-00578	$86.75
164-30615-1	C30615-1	RA164-30615-1	06-00580	$86.75
164-30615-2	C30615-2	RA164-30615-2	06-00586	$85.75
164-30615-3	C30615-3	RA164-30615-3	06-00585	$86.75

CLEVELAND BRAKE LININGS

CLEVELAND STANDARD ORGANIC BRAKE LININGS

Order by NEW Cleveland part number.
All Linings Include Rivets



Aircraft Make & Model	Old Cleveland P/N	# Req.	New Cleveland P/N	Price
AEROTEK - Pitts S-1, S-2A	66-2	2	66-106	$12.85
BEECH - Musketeer	66-55	2	66-105	$12.85
Sierra Sport Sundowner B-19; C-23, 24R	66-55	2	66-105	$12.85
Debonair CD-1 thru CD-387	66-4	2	66-111	$19.85
Debonair B-33	66-2	2	66-106	$12.50
Skipper	66-71	2	66-112	$19.85
BELLANCA - Citabria, Champ	66-2	2	66-106	$12.50
Scout	66-3	1	66-106	$12.50
Decathalon, Scout 8GCBC	66-2	2	66-106	$12.50
Viking, Aries 250	66-55	2	66-105	$12.85
CESSNA - 150A, B, C, D, E	66-2	2	66-106	$12.50
	66-56	2	66-106	$12.50
150F, G, H, J, K, 152, F-152, FA-152	66-55	2	66-105	$12.85
All Cessnas using Cessna/McCauley Brakes	B-30026	2	66-109	$19.50
Skyhawk 172, Cardinal 177 All	66-55	2	66-105	$12.85
Skywagon 180	66-55	4	66-105	$12.85
Skylane 182 H, J, K, L, M, N	66-55	2	66-105	$12.85
185A, B	66-2	2	66-106	$12.50
185C, D, E	66-55	2	66-105	$12.85
185 with crosswind gear	66-2	2	66-106	$12.50
AGWagon	66-55	4	66-105	$12.85
Stationair-6 205, 205A	66-2	2	66-106	$12.50
Stationair-6 205, 205A (s/n 205-0481 & up)	66-55	4	66-105	$12.85
206, U206A, D, E & Turbo models	66-55	4	66-105	$12.85
207, T207	66-55	4	66-105	$12.85
210C	66-4	2	66-111	$19.85
210, P210, T210, 210N, P210N	66-55	4	66-105	$12.85
303, T303	66-44	4	66-44	$13.85
305A, B, C, D, E, F	66-55	4	66-105	$12.85
310, 335	66-33	6	66-33	$12.85
Skymaster 336	66-2	2	66-106	$12.50
337, T337, 337B,C,D,E, T337B,C,D,E	66-55	4	66-105	$12.85
All Cessnas using Cessna/McCauley Brakes	B-30026	2		
CIRRUS				
SR-20	066-14100	4	66-141	$23.75
GRUMMAN				
AA-1,A,B,AA-5,AA-5A,AA-5B,Tiger,TR-2	66-55	2	66-105	$12.85
AG-CAT	66-3	1	66-106	$12.50
	66-56	2	66-106	$12.50
G-154	66-2	2	66-106	$12.50
Widgeon G44, G44A, Scan Type 30	66-11700	2	66-11700	$33.85
MAULE - Jetasen/Rocket, Lunar/Rocket	66-55	2	66-105	$12.85

Aircraft Make & Model	Old Cleveland P/N	# Req.	New Cleveland P/N	Price
MOONEY - Most M20, A, B, D, E	66-4	2	66-111	$19.85
PIPER - Colt PA22-108	66-2	2	66-106	$12.50
	66-56	2	66-106	$12.50
Apache PA-23-150, 160	66-2	2	66-106	$12.50
	66-56	2	66-106	$12.50
Apache/Aztec PA-23-235, 250 Series	66-2	4	66-106	$12.50
	66-3	4	66-106	$12.50
Comanche PA-24-180, 250, 260	66-2	2	66-106	$12.50
Pawnee C PA-25	66-2	2	66-106	$12.50
Cherokee/Cruiser PA-28-140	66-2	2	66-106	$12.50
PA-28-140 s/n 28-20521 & up	66-55	2	66-105	$12.85
Cherokee PA-28-150	66-2	2	66-106	$12.50
Cherokee PA-28-160 s/n 28-1761 & up	66-55	2	66-105	$12.85
Cherokee Warrier PA-28-151	66-55	2	66-105	$12.85
Cherokee PA-28-160	66-2	2	66-106	$12.50
Cherokee/Warrier II PA-28-161	66-55	2	66-105	$12.85
Cherokee/Archer PA-28-180 to 28-1760	66-2	2	66-106	$12.50
Cherokee/Archer PA-28-180 28-1761 & up	66-55	2	66-105	$12.85
Cherokee/Pathfinder PA-28-181, PA-28-236	66-55	2	66-105	$12.85
PA-28R-180, PA-28-200	66-2	2	66-106	$12.50
PA-28R-180 s/n 28R-7130006 & up	66-55	2	66-105	$12.85
PA-28-200 s/n 28R-7135110 & up	66-55	2	66-105	$12.85
PA-28R-201T, 201, PA-28RT-201, 201T	66-55	2	66-105	$12.85
Early PA-28-235	66-56	2	66-105	$12.85
Early PA-28R-180, 200	66-56	2	66-105	$12.85
Twin Comanche PA-30 Serial # 30-845 and on	66-19	2	66-62	$19.90
Twin Comanche PA-30 Serial # 30-2 thru 30-845	66-19	2	66-65	$24.90
Navajo B, PA31-300, 310, Turbo Navajo	66-33	6	66-33	$12.85
Chieftain, PA-31-350	66-33	6	66-33	$12.85
Cherokee/Six-260 PA-32-260	66-55	4	66-105	$12.85
PA-32-300 s/n 32-40000 thru 7200029	66-55	4	66-105	$12.85
PA-32R-300, 32RT-300	66-55	4	66-105	$12.85
PA-38-112 (6" wheel)	66-71	2	66-112	$19.85
PA-38-112 (5" wheel)	66-56	2	66-106	$12.50
PA-39	66-19	1	66-62	$19.90
PA-39, PA-39-1 & up	66-3	1	66-106	$12.50
PA-44-180	66-55	4	66-105	$12.85
TAYLORCRAFT				
Sportsman 100	66-55	2	66-105	$12.85

Advise aircraft make, model and serial number to assure that correct brake lining part number is furnished Extra rivets, P/N 105-2, for all models listed in table .05 each

CLEVELAND BRAKE LINING KITS

Pack of 4 linings
66-105 ..... P/N 06-01309 ..... $39.50
66-106 ..... P/N 06-01310 ..... $47.95

BRAKE LINING TOOLS

Designed especially to economically reline brakes, this riveting set is a handy tool for many other jobs where rivets are used to fasten leather, canvas, plastic and metal parts. Deluxe tool is screw-down type.

Dlxe. Brake Lining Tool #404 (Threaded) .....P/N 12-20810 .....$22.85
Brake Lining Tool #403 (Not Threaded) .....P/N 824.....$17.60
Brake Lining Rivets 4-4.....P/N 105-2.....$0.02
Brake Lining Rivets 4-6.....P/N 06-02300 .....$0.03

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

RAPCO BRAKE LININGS

RAPCO REPLACEMENT BRAKE LININGS

RAPCO FAA-PMA approved organic and metallic linings for Cleveland and McCauley brake assemblies provide a quality direct replacement part at a substantial cost savings. Aircraft Spruce offers additional savings on quantity orders. Organic linings come with built in wear indicator. For application guide, cross reference or product guide photos, please visit our web site at www.aircraftspruce.com.

OEM P/N	Superseded	RAPCO P/N	Our P/N	Price EA.
Organic / Semi Metallic				
066-10500	66-105	RA066-10500	06-16955	$6.50
066-10600	66-106	RA066-10600	06-16956	$6.50
066-10800	66-108	RA066-10800	06-16959	$7.85
OEM P/N	Superseded	RAPCO P/N	Our P/N	Price EA.
Brake Lining 66-109 superseded to 066-30026 (McCauley)				
066-11000	66-110	RA066-11000	06-01734	$12.50
066-11100	66-111	RA066-11100	06-16958	$6.50
066-11200	66-112	RA066-11200	RA66-112	$9.50
066-14100	-	RA066-14100	RA66-141	$13.75
066-14800	-	RA066-14800	06-01738	$7.75
066-30026	66-109	RA066-30026	RA66-109-1	$7.95
OEM P/N	Superseded	RAPCO P/N	Our P/N	Price EA.
Metallic / Sintered Steel				
066-02200	66-22	RA066-02200	06-16922	$10.75
066-03300	66-33	RA066-03300	06-16933	$11.70
066-04400	66-44	RA066-04400	06-16944	$11.50
066-06200	66-62	RA066-06200	06-16962	$11.80
066-06400	66-64	RA066-06400	06-01563	$16.50
066-06500	66-65	RA066-06500	06-16965	$12.95
066-06600	66-66	RA066-06600	06-16966	$10.50
066-06700	-	RA066-06700	06-01562	$15.75
066-06800	66-68	RA066-06800	06-16968	$15.85
066-07300	66-73	RA066-07300	06-01558	$27.50
066-09000	66-90	RA066-09000	06-01556	$24.85
066-09100	66-91	RA066-09100	06-01559	$99.75
066-09200	66-92	RA066-09200	06-01560	$178.99
066-09700	66-97	RA066-09700	06-01561	$11.75
066-10000	66-100	RA066-10000	06-01557	$21.50

LG

RAPCO BRAKE LINING KITS

RAPCO FAA-PMA approved for Cleveland and McCauley brake assemblies. These convenient direct replacement kits come with the proper number of brake linings and rivets for each particular aircraft. The -4K or -8K or -12K refers to the quantity of linings in a kit.

For application guide, cross reference or product guide photos, please visit our web site at www.aircraftspruce.com or contact our sales department.

Note: Cessnas with with McCauley Brakes required RA66-109 lining which is the superceded RA066-30026.

Use 2 each 66-106 linings to replace 1 each 66-3/66-57.

RIVETS

RAPCO P/N	Size	$/ea.
RA105-00200-Cleveland	9/32" Long	$0.12

RAPCO P/N	Our P/N	Kit Price
RA066-10500-4K	06-00634	$103.75
RA066-10500-8K	06-00650	$49.85
RA066-10600-4K	06-00651	$24.75
RA066-10600-8K	06-00652	$62.75
RA066-10800-8K	06-00681	$59.95
RA066-10800-12K	06-01739	$87.85
Note - RA66-109-4K or -8K superseded to RA066-30026-4K or -8K McCauley		
RA066-11100-4K	06-00683	$23.75
RA066-11200-4K	06-01740	$29.50
Rapco Brake Lining Kit RA66-109 superseded to RA066-30026	06-00653	$29.85
Rapco Brake Lining Kit RA66-109 superseded to RA066-30026	06-00682	$61.75

RAPCO BRAKE RIVET TOOL REPLACEMENT PUNCH/ANVIL

Complete with: Rivet Punch, Set and Anvil for setting rivets. More Convenient and easier to use than most punch style tools.Will not crack or distort brake linings. Can be used in vise or hand held.

Brake Rivet tool RA825 ..... P/N 10-02065 ..... $36.50
Replacement Punch/Anvil RA825AP ..... P/N 10-02066 ..... $6.90

RAPCO ROTOR BRAKE RA5009212

This lining is a direct replacement for the 5009212 Rotor Brake Puck. This puck fi ts on Bell 206, Bell 206L1, 206L2, 206L3 Helicopters. It is the main rotor brake puck used to stop in emergancy conditions or heavy winds

P/N 06-01306 ..... $149.95

RAPCO RA177-SERIES BRAKE PINS

All these brake pins are widely used in conjunction with the "Sintered" style brake linings. They are staked into place on the back plate and pressure plate assemblies in accordance with the brake maintenance manual. The RA177-00300 is a 5/16" pin designed for the back/pressure plates with 5/32" holes. The RA177-00400 is a 5/16" pin designed for the back/pressure plates with 3/16" holes. The RA177-01600 is a 3/8" pin designed for the back/pressure plates with 3/16" holes.

RA177-00300 ..... P/N 06-01215 ..... $3.35
RA177-00400 ..... P/N 06-01499 ..... $2.95
RA177-01600 ..... P/N 06-01501 ..... $2.95

BRAKE PARTS - SHIMMY DAMPERS

GOODYEAR BRAKE PARTS

Most replacement parts are available for aircraft still equipped with Goodyear wheels and brakes. We provide prompt shipment on replacement parts such as brake linings, brake discs, clips, etc. Request quotation on any unlisted Goodyear part numbers.

Brake 5.00 x 5, Cessna 150, Assy. No. 9532302
9524161-1 ..... Piston Lining ..... $62.50 ea.

Brake 6.00 x 6, Cessna 120, 140, Aeronca 7AC, 11AC, Swift, Lusc., Assy. No. 9520517
9523482 ..... Disc Clips ..... $39.65 ea.

Brake 6.00 x 6, Cessna 120, 140, Swift, Luscombe, Sedan, Aeronca 11AC, Assy. No. 9520298
9520435 ..... Disc Clips, 4 required ..... $79.65 ea.

Brake 6.00 x 6, Cessna 172, 175, 180, 182, 210, Lake, Assy. No. 9532181
9511271-2 ..... Anvil Lining ..... $358.00 ea.
9511269-2 ..... Piston Lining ..... $168.85 ea.

Brake 6.00 x 6, Cessna 170, 172, 175, 180, 182, 210 Assy. No. 9530839 Aeronca 7AC, 11AC, 15AC, Stinson 150, 165, Assy No. 951239 & 9532181
9511271-2 ..... Anvil Lining ..... $358.00 ea.
9511269-2 ..... Piston Lining ..... $168.85 ea.
9523482 ..... Disc Clip ..... $39.65 ea.

Brake 6.00 x 6, Aeronca 7AC, 11AC, Funk, Schweizer Glider, Luscombe 8,8A, Assy No. 9530131, Assy. No. 511254
9520435 ..... Disc Clips, 4 required ..... $79.65 ea.

Brake 6.00 x 6, Ercoupe Forney, Assy. No. 9520285
9523482 ..... Disc Clip ..... $39.65 ea.

Brake 6.50 x 8, Beech T34, 35, Camair, Assy. No. 511731
9510714-2 ..... Anvil Lining ..... $98.75 ea.
9510713-1 ..... Piston Lining ..... $62.50 ea.
9523937 ..... Disc Clip ..... $27.75ea.

Brake 6.50 x 10, Cessna 190, 195, 310, 320 Assy. No. 951731
5009853 ..... Piston Lining ..... $108.75 ea.

BRAKE TORQUE PLATE FOR AERONCA

Brake Torque Plate. 7A, 7BCM, 7CCM, 7EC, 7FC, 7GC, 7HC, 11A 11BC. Code 4.
P/N 05-08727 ..... $20.00

PIPER SHIMMY DAMPER SERVICING KIT

Finally, a shimmy damper servicing kit. One of the most neglected components on Piper aircraft is the shimmy dampener. The shimmy damper aids nose wheel steering by reducing the shimmy of the nose wheel during takeoff and landing, and during high-speed taxiing. Even minor shimmying can lead to serious damage to the nose gear and engine mount and affect the airworthiness of the aircraft. The shimmy damper is a sealed unit that, until now, could not be serviced and required costly replacement. The STC and accompanying servicing kit allows the MAECO shimmy damper to be modified and serviced, restoring the shimmy damper to like-new condition and enabling it to perform as originally designed! The servicing kit installs in less than an hour by any A&P mechanic. Once modified, if the shimmy damper ever needs servicing again, the owner can service it with hydraulic fluid.
Important: Enter Piper Aircraft Model, Serial number, and "N" number at time of order. P/N 06-00846 ..... $168.99

FOR COMPLETE INSTALLATION ELIGIBILITY LIST SEE
www.aircraftspruce.com

LORD SHIMMY DAMPER FOR BEECH AIRCRAFT

This nose gear shimmy damper from LORD Corporation is FAA approved for many models of Beech Aircraft. The patented technology provides consistent damping without maintenance. Instead of using fluids to resist motion, the shimmy damper features a unique rubber formulation with a high-tech lubricant to absorb nose wheel vibration. Length: 5-1/2". Long life - Demonstrated performance in excess of 5,000 ground-air-ground duty cycles, expecting a product life of more than 10 years of usage on typical, high-use, single-engine piston airplanes. Consistent damping - From -30 degrees to +150 degrees F. FAA Approved.
P/N 05-03421 ..... $688.95

Beech Aircraft Eligibility List			
A36TC	B36TC	Bonanza 36	A36
G36	Bonanza 35	A35	B35
C35	D35	E35	F35
G35	H35	J35	K35
M35	N35	P35	S35
V35	V35-TC	V35A	V35A-TC
V35B	V35B-TC	E33	E33A
E33C	F33	F33A	G33A
Barron 55	A55	B55	C55
D55	E55	56TC	A56TC
58 Barron	58TC	58P	

LORD SHIMMY DAMPERS FOR CESSNAS

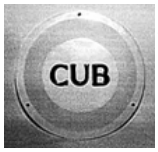
This high performance shimmy damper is designed to last at least 10 yrs without maintenance and contains no hydraulic fluid, so it cannot leak. Priced at about half the cost of equivalent Cessna factory dampers. 5-yr warranty. All dampers are STC'd and PMA approved.
Features
No Hydraulic Fluid: No periodic leaks or loss of damping. No servicing required. Reduced wear of nose gear linkages. Lower operating costs.
Consistent damping from -30° to 150°F: No loss of damping at temperature extremes. Reduced wear of nose gear linkages. Lower operating costs.
No performance degradation over time and use: Reduced wear of nose gear linkages. Lower operating costs.
Large diameter shaft: Increased durability. Lower operating costs.
Simple Design:High reliability. Lower operating costs.
Form, fit and function compatible: Simplicity of use (one-for-one replacement). Compatibility with existing installation.

PN	Lord #	Installation Eligibility	Price
05-00443	SE-1051-2 Approved Replacement For Cessna # 0442612-1	150G, H, J, K , L , M F150G, H, J, K, L, M, A150K, L, M FA150K, L FFRA150L, FRA150M 152 (ALL) 1978 thru 1985 (no letter designators) A152 (ALL) 1978 thru 1985 (no letter designators) FA152 (ALL) 1978 thru 1984 (no letter designators) 172, 172 A, B, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S F172D, E, F, G, H, K, L, M, N, P, P172D, FR172E, F, G, H, J(REIMS ROCKET) R172K, FR172K 175, 175A, B, C 182B, C, D Note: The Lord Shimmy Damper PN 05-00443 will not work on Cessna 172 Years: 1956-1959	$849.00
05-00444	SE1051-3 Approved Replacement for Cessna # 0542119-2	150A - F NOTE: Not for retractable gears.	$1,287.00
05-02610	SE-1068-5 Approved Cessna Replacement	182K-N 182P-T T282T	$966.00
05-00446	SE-1069-3 Approved Replacement for Cessna # 0743624-2	206H, P206B-E, T206H, TU206B-G, U206B-G 207, 207A, T207, T207A, 210G-H, 210J-N, 210R, P210N, P210R, T210K-N	$833.00
05-03382	SE-1070-7 Approved Replacement for Cessna # SE-1070-4 SE-2070-6	208, 208A, 208B	$2,635.00
05-04185	SE-1090-1	310, 310B, 310C, 310D, 310F, 310G, 310H, 3101, 310J, 310K, 310L, 310N, 310P, T310P, 3100, '1'3100, 310R, T310R,320, 320A, 320B, 320C, 320D, 320E, 320F, 340, 340A, 401, 401A, 401B, 402, 402A, 402B, 402C, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, 404, 406, 441	$1,906.00

SEAL KIT FOR CESSNA SHIMMY DAMPENERS

Shimmy dampener seal kits contain the industry standard o-rings required to reseal the Cessna shimmy dampener.
P/N 06-01679 ..... $0.55

HUB CAPS – BLACK MAX – GOODRICH



METAL HUB CAPS

These FAA approved metal hub caps are designed for older Pipers using the 800x4 Goodrich (Hayes) brakes such as the J-3 and PA-18. A larger cap for 600 x 6 conversions are also available below. The caps are available with "CUB" stamped in raised letters or plain.

Cub 800x4 Goodrich hub cap.....P/N 06-00010 ..... $32.75 ea.
(Identical in size and appearance to Cleveland #157-9)
Cub 600x6 Cleveland hub cap .....P/N 06-00020 ..... $29.50 ea.
Plain 800x4 Goodrich hub cap.....P/N 06-00030 ..... $26.50 ea.
Plain 600x6 Cleveland hub cap.....P/N 06-00040 ..... $28.50 ea.

WHEEL COVERS

For Gerdes, McCauley, Cleveland, Hayes, Goodyear, Rosenhan and Matco wheels as listed. Furnished with mounting screws and lock washers.

P/N	Wheel Size	Application	Price ea.
157-8 Pictured	5.00-5*	Cleveland, McCauley, Gerdes	$97.75
157-9	6.00-6**	Cleveland, McCauley, Gerdes	$79.50
06-03705	6.00-6	All Goodyear Wheels	$35.50
06-03900	5" Dia.	Rosenhan Matco Wheels	$6.75

GROVE HUB CAPS

GROVE HUB CAP 5"

For Grove, Cleveland and Gerdes wheels.
Includes mounting screws. 011-012
P/N 06-01363..... $17.75

GROVE HUB CAP 6"

For Grove, Cleveland and Gerdes 600x6 wheels.
Includes mounting screws. 011-013
P/N 06-00845..... $19.85

ECONOMY WHEEL COVER

For 600-6 Cleveland wheels
P/N 06-03710..... $16.95 ea.

For 500-5 Cleveland wheels
P/N 06-00073..... $19.95 ea.

Furnished with screws for installation

BX-1000 BLACK MAX HYDRAULIC BRAKE SYSTEM

(Everything you need in one package)
This system has a full floating rotor which compensates for alignment giving you a smooth feeling brake action. The master cylinder has a built in reservoir which allows you to add oil and bleed from the top down. Maximum holding pressure to allow for a good run up. Uses standard brake fluid. Gross rating 1000 lbs.

Features: • Master Cylinder w/reservoir and brake handle • 2 6" polished aluminum wheels • 2 Hubs w/bearings • 2 Tires • 2 Rotors • 2 Calipers 5/8" axle with keyway Brake Pads • 14' of Hydraulic Brake Line •Fittings and Hardware.

BLACK MAX AXLE ADAPTERS

Description	Part No.	Price
Challenger Metal Gear Leg	06-00973	$68.75
Adapter for Challenger w/ Fiberglass Left Gearleg	06-00974	$68.75
Adapter for Challenger w/ Fiberglass Right Gearleg	06-00975	$68.75
Hawk Left Axle Assembly	06-00976	$68.75
Hawk Right Axle Assembly	06-00977	$68.75
Rans Axle Bolt	06-00978	$34.95
Titan Gear LED Adapter	06-00994	$68.75
Axle 3/4" x 8 w/Woodruff Key	06-01005	$39.95

Part#	Model	Rim Type	Rims Included	Rim Size	Gross Weight	Includes tires	Axle Size	PN	Price
BX44708	BX1000	WELDED	YES	4"W X 6" D	1000LBS	YES	5/8" X 8"	06-00707	$438.00
BX44708-4	BX1000	WELDED	YES	4"W X 6" D	1000LBS	YES	5/8" X 8"	06-00963	$438.00
BX44798	BX-AZUSA	Azusa	NO	4"W X 4" D	1000LBS	NO	5/8" X 7.5"	06-00964	$439.95
BX44799	BX-AZUSA	Azusa	NO	4"W X 6" D	1000LBS	NO	5/8" X 7.5"	06-01191	$439.95
BX44800	BX-AZUSA	Azusa	NO	4"W X 8" D	1000LBS	NO	5/8" X 7.5"	06-00966	$399.00
BX44785	BX1320	SPLIT RIM	YES	6"W X 6" D	1320LBS	NO	5/8" X 8"	06-00967	$624.00
BX44785-4	BX1320	SPLIT RIM	YES	4"W X 6" D	1320LBS	NO	5/8" X 8"	06-00968	$498.00
BX44863	BX1500	SPLIT RIM	YES	6"W X 6" D	1500LBS	NO	3/4" X 8"	06-00969	$565.00
BX44863-4	BX1500	SPLIT RIM	YES	4"W X 6" D	1500LBS	NO	3/4" X 8"	06-00970	$575.00

BLACK MAX REPLACEMENT PARTS

Mfg. P/N	Description	Part No.	Price
44766	Caliper Assembly 5/8	06-00996	$137.95
44766-3/4	Caliper Assembly 3/4	06-00997	$156.75
44764	Master Cylinder Assembly	06-00995	$124.75
44747	Brake Handle	06-01017	$19.95
44771	Brake Handle Grip	06-01037	$3.95
-	Replacement Valve System	06-01013	$1.95
44743	Black Max Nylon Brake Line 1/8" O.D.	06-01006	$0.59
44848	Replacement O-Seal Kit (For Split Rims)	06-01012	$12.00

See www.aircraftspruce.com for more Brake Max Parts

GOODRICH 800X4 WHEEL PARTS

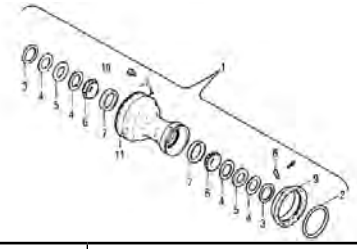
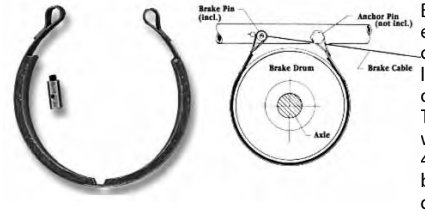


Figure No.	PN	Description	Price
5	B227-52	Felt, Grease Retaining	$0.51
6	08125	Cone, Bearing	$48.60
7	08231	Cup, Bearing	$26.50
9	B11-5	Casting, Side	$46.50
10	AN441-6-6P	Rivet, Brake Drum	$0.57
11	B13-4	Drum, Brake (I.D. Must be turned after installation.)	$202.95

4-1/2 INCH BRAKE BANDS WITH PINS



Band Brakes are simple, effective and economical for a variety of small, light-duty small vehicles, or as parking brakes. They were designed to work with either 4" or 4-1/2" diameter drums, but may work well with drums ranging in size from 3-7/8" through 4-5/8" O.D. • 2 Piece Bonded Lining • Comes with 1 band and 1 pin. • Riveted End/Mounting Brackets • Steel Brake Pin with Cable Hole Included • Band Brake for 4.5" drum - Packaged PN 2555

P/N 06-00662 .....$18.75

DIAPHRAGM FOR BRAKE CYLINDER

Master cylinder diaphragm for Piper J-3/PA-11
P/N 06-00759.....$37.70

GOODRICH BRAKE ASSEMBLY PARTS

FOR ALL PIPERS WITH 8.00 X 4 WHEELS

Brake Block (750-033).....P/N 06-00013 ..... $61.99
Spring (750-029).....P/N 06-00430 .....$7.80
Shield (750-093) .....P/N 06-01042 ..... $25.50

AIRCRAFT TIRE APPLICATION CHART

Tires/Tubes Certified Aircraft Application Chart - Tires are low speed unless designated. Tires are tube-type unless otherwise indicated. Consult aircraft manual for individual tire pressure. – IMPORTANT: READ THIS LEGEND FIRST –

Code: TL = Tubeless; SC = Smooth Contour; DT = Deflector Type; DDT = Dual Deflector Type

APPLICATION CHARTS - The application information presented within this manual is based on the most current information available and is intended for use as a GENERAL REFERENCE ONLY. Any inquiries regarding specific model aircraft should be directed to the applicable airframe manufacturer. Your requirements may vary depending on the actual configuration of your aircraft. All Goodyear aircraft tires are manufactured in accordance with TSO-C62, MIL-T-5041 or AIR8505A and/or applicable airframe manufacturer specifications. Additionally, all tire sizes included in this manual may not necessarily be available from Goodyear. Contact your Goodyear Representative for specific tire information and availability. Failure to make this verification and to install unapproved tires on an aircraft may result in tire failure causing property damage, serious injury, or loss of life.

* Please visit our website for the "Select by Aircraft" shopping tool.

CESSNA

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
120, 140	—	6.00-6	4	5.00-5	4
150, 152	Commuter,Aerobat	6.00-6	4	5.00-5	4
172	Skyhawk	6.00-6	4	5.00-5	4
R172	Hawk XP	6.00-6	4	5.00-5	4
172 Q	Cutlass	6.00-6	6	5.00-5	4
172 RG	Cutlass RG	15x6.00-6	6	5.00-5	4
175	Skylark	6.00-6	4	5.00-5	4
177	Cardinal	6.00-6	6	5.00-5	4
177 RG	Cardinal RG	15x6.00-6	6	5.00-5	4
180	Skywagon	6.00-6	6	8.00"SC	6
182, T182	Skylane	6.00-6	6	5.00-5	6
182RG,T182RG	Skylane	15x6.00-6		5.00-5	4
185	Skywagon	6.00-6	6	8.00 SC	
188	AG Wagon	22x8.00-8		10.00 SC	6
188	AG Wagon(optional)	8.50-10	6	10.00"SC	
205	—	6.00-6	6	5.00-5	6
206	Station Air	6.00-6	6	5.00-5	6
206, 207	Optional	8.00-6	6	6.00-6	4
207	Skywagon	6.00-6	8	6.00-6	8
208 (FLO)	Caravan	8.50-10	8	22x8.00-8	
208 (STA)	Caravan	6.50-10	8	6.50-8	8
210	Centurion	6.00-6	8	5.00-5	6
T210, P210	Turbo, Centurion	6.00-6	8	5.00-5	10
T303	Crusader	6.00-6	8	6.00-6	6
T303	Optional	6.50-8	8	6.00-6	6
310, T310	—	6.50-10	6	6.00-6	4
320, 340	—	6.50-10	6	6.00-6	4
336	—	6.00-6	6	15x6.00-6	
337	Super Skymaster	18x5.5	8	15x6.00-6	
401, 402	—	6.50-10	8	6.00-6	6
404	Titan	22x7.75-10	10TL	6.00-6	6
411	—	6.50-10	8	6.00-6	6
414	Chancellor	6.50-10	8	6.00-6	6
421	Golden Eagle	6.50-10	8	6.00-6	6
425	Conquest I	6.50-10	10	6.00-6	6

BELLANCA

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
260A	Bellanca	6.00-6	6	6.00-6	4
17-30A	Viking	6.00-6	6	15x6.00-6	6/8
17-31A	Super Viking	6.00-6	6	15x6.00-6	6/8
17-31ATC	Turbo Viking	6.00-6	6	15x6.00-6	6/8
7GCAA	Citabria	6.00-6	4	5.00-5	4
7KCAB	Citabria	7.00-6	4	5.00-5	4
8KCAB	Decathlon	8.00-6	4	5.00-5	4
8GCBC	Scout	8.50-6	4/6	5.00-5	4

MOONEY

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
MO-20	Ranger	6.00-6	6	5.00-5	4/6
MO-21C	Super	6.00-6	6	5.00-5	4/6
MO-22	Mustang	6.00-6	6	15x6.00-6	6
MO-20E	Chapparal	6.00-6	6	5.00-5	4
MO-20F	Executive	6.00-6	6	5.00-5	6
MO-20J	201	6.00-6	6	5.00-5	6
MO-20K	Turbo 231	6.00-6	6	5.00-5	6
M-20K	TSE	6.00-6	6	5.00-5	4
M-20M	Bravo	6.00-6	6	5.00-5	6
M-20S	Eagle	6.00-6	6	5.00-5	6
M-20R	Ovation	6.00-6	6	5.00-5	6

COMMANDER AIRCRAFT

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
112	Commander	6.00-6	6	5.00-5	4
112B	—	7.00-6	6	5.00-5	4
112TC, TCA	—	7.00-6	6	5.00-5	6
114	—	7.00-6	6	5.00-5	6
114A, B	—	6.00-6	6	5.00-5	6

BEECH

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
C-17R	Staggerwing	7.50-10	6	10.00SC	—
BE 18	Twin Beech	11.00-12	8 TL	14.50SC	8TL
BE 18H	Twin Beech	8.50-10	8 TL	8.50-10	8TL
BE 19	Musketeer Sport	6.00-6	4	6.00-6	4
BE 23	Musketeer	6.00-6	4	6.00-6	4
BE23C,BE-A24	Sundowner	6.00-6	4	6.00-6	4
BE 24-R	Super Sierra	6.00-6	4	5.00-5	4
BE 33A	Bonanza	7.00-6	6	5.00-5	4
BE 35	Bonanza	7.00-6	6	5.00-5	4
BE 36	Bonanza	7.00-6	6	5.00-5	4
BE 50	Twin Bonanza	8.50-10	6	6.50-10	4
BE B55	Baron	6.50-8	8	5.00-5	6
BE C55	Baron	6.50-8	8	5.00-5	6
BE E55	Baron	6.50-8	8	5.00-5	6
BE 58	Baron	6.50-8	8	5.00-5	4
BE 60	Duke	19.5x6.75-8	10TL	15x6.00-6	4
BE 65	Queen Air	8.50x10	8TL	6.50-10	6TL
BE-80	Queen Air	8.50-10	8TL	6.50-10	6TL
BE-C90B	King Air	8.50-10	8TL	6.50-10	6TL
BE-B200	Super King Air	18x5.5	10TL	22x6.75-10	8TL
BE-200T	Super King Air	22x6.75-10	8TL	22x6.75-10	8TL
BE-99	—	18x5.5	8 TL	6.50-10	6TL
BE-300/350	Super King Air	22x6.75-10	8TL	19.5x6.75-8	10TL
BE-2000	Starship 1	H19.5x6.75-10	8 TL	19x6.75-8	10TL

PIPER

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
J3	Cub	8.00-4	4	8.00"SC	Solid
PA18-135	Super Cub	6.00-6	4	8.00"SC	Solid
PA18-150	Super Cub	6.00-6	4	6x2.00	Solid
PA22	Tri Pacer	6.00-6	6	6.00-6	6
PA23,160-235	Apache	7.00-6	6	6.00-6	4
PA23-250	Aztec	7.00-6	8	6.00-6	4
PA24-180	Commanche	6.00-6	4	6.00-6	4
PA24,250,260,400	Commanche	6.00-6	6	6.00-6	4/6
PA25-150	Pawnee	7.00-6	4	8x3.00-4	4
PA25,236,260	Pawnee	8.00-6	4	8x3.00-4	4
PA28R-201	Arrow	6.00-6	6	5.00-5	4
PA28-140	Cherokee	6.00-6	4	6.00-6	4
PA28-150	Cherokee	6.00-6	4	6.00-6	4
PA28-151,161	Warrior	6.00-6	4	5.00-5	4
PA28-160	Cherokee	6.00-6	4	6.00-6	4
PA28-180	Cherokee	6.00-6	4	6.00-6	4
PA28-181	Archer	6.00-6	4	5.00-5	4
PA28-235	Cherokee	6.00-6	4	6.00-6	4
PA30	Twin Commanche	6.00-6	4	6.00-6	6
PA31	Navajo	6.50-10	8	6.00-	6
PA31	Chieftain	6.50-10	8	6.00-6	6
PA31T	Navajo	6.50-10	10	6.00-6	6
PA31P	Pressurized Navajo	6.50-10	8	6.00-6	8
PA31T-500	Cheyenne 1A	6.50-10	10	6.00-6	6
PA32	6-300	6.00-6	6	6.00-6	6
PA32RT300	Lance	6.00-6	8	6.00-6	4
PA31P-350	Mojave	6.50-10	8	17.5x6.25-6	10
PA34-220	Seneca	6.00-6	8	6.00-6	6
PA36	Brave	8.50-10	6	10x3.5-4	6
PA38	Tomahawk	6.00-6	6	5.00-5	6
PA42	Cheyenne IIIA	6.50-10	12 TL	17.5x6.25-6	10
PA44-180	Seminole	6.00-6	6	6.00-6	6
600/601B (PA60)	Aerostar	6.50-8	8TL	6.00-6	6
601P(PA60-601P)	Aerostar	6.50-8	8 TL	6.00-6	6
602P(PA60-602P)	Aerostar	6.50-8	8 TL	6.00-6	6
700P(PA60-700P)	Aerostar	6.50-8	8 TL	6.00-6	6
PA46-350P	Malibu Mirage	6.00-6	8	5.00-5	6
PA34-270T	Seneca V	6.00-6	8	6.00-6	8
PA44-180	Seminole	6.00-6	8	5.00-5	6
PA32R-301	Saratoga II HP	6.00-6	8	5.00-5	6
PA32R-301T	Saratoga II TC	6.00-6	8	5.00-5	6
PA28-181	Archer III	6.00-6	4/6	6.00-6	4
PA28-161	Warrior III	6.00-6	4	5.00-5	4

MAULE

Model	Name	Main Tire		Auxiliary Tire	
		Tire Size	Ply	Tire Size	Ply
MX-7-160	—	7.00-6	4/6	280/250-4	4
MXT-7-160	—	7.00-6	4/6	280/250-4	4
M-8-235	—	7.00-6	4/6	280/250-4	4
MX7-420	—	7.00-6	4/6	280/250-4	4

GOODYEAR TIRES & TUBES

Flight Custom III™

Goodyear Flight Custom III™ Tires are the ONLY General Aviation tires with Kevlar®:

- Antioxidant formulation to help reduce cracking.
- Deeper Tread Depth.
- Wide Aquachannels®.
- Kevlar® belt package.
- Premium Wingstay® formulation.
- Dual polymer tread compound.
- Get up to 20% more landings.
- Superior wet traction, enhanced treadwear.
- The Goodyear® Flight Custom III® offers up to 20% more landings to removal than its predecessor. Dupont tm and Kevlar (circleR) are trademarks or registered trademarks or E.I. du Pont de Nemours and Company. Results may vary based on proper maintenance, runway and operating conditions.

Flight Special II™

A popular replacement tire for light aircraft, the Flight Special is an unsurpassed combination of value and performance. Designed for long treadlife, this tire is built to last. Every strand of nylon cord in the casing has been triple tempered with time, tension and temperature to provide the ultimate in tire construction, uniformity and strength.

FEATURES:

- Wide rib tread design and large footprint
- Enhanced tread compound for uniform wear and extended service life
- Triple-tempered nylon casing cord.

BENEFITS:

- Enhanced traction
- Uniform wear and extended

SERVICE LIFE:

- Excellent Treadwear.

TIRE TALC

Eases installation of tubes in tires. Size: 13oz. DISCOUNT: LESS 15% ON 12

P/N 17-250..... $7.95

SILICONE BASE TUBE TALC

16 oz. Shaker bottle of Silicone Base Tube Talc Adds Extra Life and Prevents Pinching & Chafing on rubber tubes.

P/N 05-11180.....$18.95

A "B" at the end of a description means BENT valve stem.
An "S" at the end of a description means STRAIGHT valve stem.
(1) For use in both 5.00-5 and G380x150-5 (15x6.00-5).
(2) For use in both 6.00-6 and 15x6.00-6 tires.
(3) For use in both 7.00-6 and 8.00-6 tires.
(4) For use in 6.50-8, 19.5x6.75-8 & 22x8.00-8 tires.
(5) Discontinued, call for Special Pricing.
-Natural rubber aircraft tubes comply with the requirements of Goodyear QAI 2525, which the U.S. Military has accepted in lieu of MIL-I-5014.
-Flight Mate (Butyl) tubes comply with the requirements of SAE document AS 50141.

GOODYEAR TIRES – TUBE TYPE

Tire Size	PR	Description	Speed (MPH)	Avg. Weight (lbs.)	Part No.	Price ea.
5.00-4	6	RIB	120	4	06-04700	$335.00
15X6.00-5 / G380-150-5	6	RIB	120	7	06-01078	$150.75
5.00-5	4	Flight Custom III	160	7	06-04900-3	$169.75
5.00-5	4	Flight Special II	120	5	06-07110	$103.75
5.00-5	6	Flight Custom III	160	7	06-05100-3	$164.75
5.00-5	6	Flight Special II	120	5	06-07100	$96.75
5.00-5	10	Flight Special II	120	6	06-00208	$123.80
15X6.00-6	6	Flight Custom III	160	9	06-05500-3	$179.75
15x6.00-6	6	Flight Special II	160	8	06-07340	$128.80
6.00-6	4	Flight Custom III	160	11	06-05200-3	$200.75
6.00-6	4	Flight Special II	120	9	06-07200	$119.85
6.00-6	6	Flight Custom III	160	11	06-05400-3	$209.95
6.00-6	6	Flight Special II	120	9	06-07300	$117.75
6.00-6	8	Flight Custom III	160	11	06-05410-3	$203.95
6.00-6	8	Flight Special II	120	9	06-07310	$121.75
6.50-8	6	Flight Custom III	160	14	06-05600-3	$257.95
6.50-8	8	Flight Custom III	160	14	06-05800-3	$281.95
6.50-8	8	Flight Special II	120	12	06-07320	$200.75
6.50-10	8	Flight Custom III	160	16	06-06100-3	$321.00
6.50-10	8	Flight Special II	120	14	06-00209	$234.95
6.50-10	10	Flight Custom III	160	17	06-06110-3	$361.00
7.00-6	6	Flight Custom III	160	13	06-06200-3	$223.95
7.00-6	6	Flight Special II	120	10	06-07330	$170.75
7.00-6	8	Flight Custom III	160	13	06-06210-3	$257.95
8.00-4	4	RIB	120	9	06-06600	$302.00
8.00-6	6	Flight Special II	120	13	06-01145	$184.75
8.00-6	8	Flight Special II	120	12	06-00212	$211.95
8.50-6	6	RIB	120	12	06-06820	$291.95
8.50-10	8	Flight Custom III	160	24	06-06900-3	$389.00
6.00-6.5 / 420X150	4	RIB	120	6	06-01088	$300.95
18X5.5	8	Flight Special II	120	11	06-00203	$193.75
22X8.00-8	6	Flight Special II	120	14	06-00205	$214.95

GOODYEAR TIRES – TUBELESS

Tire Size	PR	Description	Speed (MPH)	Avg. Weight (lbs.)	Part No.	Price ea.
5.00-4	14	RIB	120	7	06-01057	$350.00
6.00-6	8	Flight Custom III	160	12	06-01058	$267.95
17.5X6.25-6	10	Flight Special II	160	11	06-00202	$266.95
6.50-8	8	Flight Custom III	160	15	06-01060	$265.95
6.50-10	6	Flight Custom III	160	17	06-05900-3	$304.00
6.50-10	12	Flight Special II	160	21	06-00210	$323.00
7.00-6	10	Flight Custom II	120	12	06-01061	$287.95
7.00-8	10	RIB, All Weather	120	15	06-01062	$379.00
7.50-14	12	RIB	160	36	06-01063	$651.00
8.50-10	8	Flight Custom III	160	27	06-01064	$430.00
8.50-10	10	Flight Custom III	160	28	06-01065	$504.00
8.90-12.50	6	RIB	160	29	06-01066	$595.00
8.90-12.50	6	RIB, All Weather	160	24	06-01067	$609.00
9.00-6	10	RIB	120	22	06-01068	$595.00
9.25-12 / 28X9.0-12	12	RIB	160	38	06-01069	$608.00
11.00-12	10	RIB	160	45	06-01070	$670.00
13X5.0-5	8	Smooth	120	7	06-01071	$329.00
14.5X5.5-6	14	RIB	120	10	06-01072	$622.00
15X6.0-6	10	Flight Custom II	160	9	06-01073	$321.00
22X6.75-10	8	Flight Custom III	160	20	06-01074	$336.00
26X10.5-6	6	Smooth	120	23	06-01075	$678.00
29X11.00-10	10	RIB	120	36	06-00206	$581.00
15.00-12	14	RIB	160	59	06-01076	$1,261.00
15.00-16	16	RIB	120	95	06-01077	$1,909.00

GOODYEAR TUBES

Tube Size	Description	Avg. Weight (lbs.)	Part No.	Price ea.
5.00-4 Flight Mate	Butyl Tube TR 67, B	1	06-04800	$99.75
5.00-5 Flight Mate	Butyl Tube TR 67A (1), B	1	06-05000	$71.75
6.50-10 Flight Mate	Butyl Tube TR 25, S	2	06-06000	$62.75
7.00/8.00-6 Flight Mate	Butyl Tube TR 20, (3), S	2	06-06300	$62.85
7.50/8.50-10 Flight Mate	Butyl Tube TR 25, S	3	06-07000	$88.85
8.50-6 Flight Mate	Butyl Tube TR 20, S	3	06-01050	$138.75
8.90-12.50 Flight Mate	Butyl Tube TR 15, S	6	06-01051	$119.90
11.00-12	Reg. Tube TR 13, S	7	06-01052	$101.75
G15/6.00-6 Flight Mate*	Butyl Tube TR 67A, B	1	06-05305	$109.75
G15/6.00-6 Flight Mate*	Butyl Tube TR 20, (2), S	1	06-05300-1	$57.75
17.00-16	Reg. Tube TR 91G, B (5)	14	06-01054	$400.00
G19.5X6.75-8 Flight Mate	Butyl Tube TR 15, (4), S	2	06-05700	$61.75
11.00-12 TR 13, S Flight Mate™	Butyl Tube TR 13, S	6.6	06-01950	$98.75

* ALSO FOR 600 X 6 TIRES.

LG

GOODYEAR FLIGHT EAGLE TIRES

With over 100 years of brighter ideas about lighter flight, it's only natural that Goodyear lights the way with LJs and VLJs.

Goodyear Flight Eagle LT is a new tire, but it's already been chosen for the Embraer Phenom 100 and Phenom 300 aircraft. The LT stands for Light Turbine... a new generation of aircraft tires for demanding high speed take-offs and landings.

Features:

- Computer-aided design
- Special inner-liners
- Enhanced bead compounds and construction
- Sidewalls with a reservoir of antioxidants
- Benefits:
- Maximum number of landings
- Enhanced air retention
- Great serviceability and resistance to wheel damage
- Special wear-resistant tread compounds Low cost-per-landing
- Excellent resistance to weather effect of sunlight and ozone

BUSINESS BIAS AIRCRAFT TIRES							
Tire Size	PR	Description	Speed (MPH)	Avg. Weight (lbs.)	Aircraft	Part No.	Price
18X4.25-10	6	Flight Eagle, DT	210	12	Hawker 125	06-01316	$386.00
16X4.4	4	Flight Eagle	210	8	Westwind 1124	06-01317	$474.00
16X4.4	6	Flight Eagle	210	10	Westwind 1125	06-01318	$517.00
16X4.4	6	Flight Eagle, DT	210	10	Westwind 1125, SJ30-2, AstraSPG100	06-01319	$567.00
16X4.4	10	Flight Eagle	210	11	Citation X	06-01320	$581.00
16X4.4	12	Flight Eagle	190	9	SJ-30-2	06-01321	$693.00
18X4.4	6	RIB,DDT	190	11	Cit 525, CJ,CJ-1,CJ-2	06-01322	$389.00
18X4.4	10	Flight Eagle, DT	210	12	Dash8, CL-600	06-01323	$416.00
18X4.4	10	RIB, DDT	210	13	Cessna CIT I/II, Lear	06-01324	$416.00
18X4.4	10	RIB, DDT	190	13	Cessna CIT II, CJ-3	06-01325	$416.00
18X4.4	10	RIB, DDT	210	14	Diamond I/II, Beech Jet, CIT II, III, V, VI, VII	06-01358	$458.00
18X4.4	12	Flight Eagle, DT	210	13	Jetstar II, CL600/601	06-01326	$406.00
14.5X5.5-6	LR2800	Flight Eagle, DT	210	11	Falcon 20	06-01327	$710.00
18X5.5	8	Flight Eagle	190	13	Lear23, KingAir, CE-337	06-01328	$387.00
18X5.5	10	Flight Eagle	210	14	Lear23/24/25, EMB120	06-01329	$400.00
18X5.5	10	Flight Leader	210	15	Challenger 300	06-01330	$556.00
17.5X5.75-8	12	Flight Eagle	210	15	Learjet 30 Series	06-01331	$426.00
17.5X5.75-8	17	Flight Eagle	210	17	Learjet 55, 60	06-01332	$572.00
18X5.75-8	8	Flight Eagle, DDT	190	13	Falcon 10	06-01333	$625.00
22X5.75-12	10	Flight Eagle	190	20	CITII,VI,VII,F-10, Lear 45	06-01334	$544.00
22X5.75	12	Flight Eagle	210	24	Sabre80	06-01335	$924.00
15X6.00-6	10	Flight Eagle LT DDT	160	11	EMB Phenom	06-01336	$314.00
17.5X6.25-6	8	RIB, DDT, TT	190	II	Corvette	06-01337	$679.00
21X6.50-10	12	Flight Eagle LT	160	18	EMB Phenom 100	06-01338	$390.00
26X6.6	14	Flight Eagle	210	31	CL-600/601, Jetstar I/II, Corvette, Falcon 20, 50, 200	06-01339	$877.00
26X6.6	14	Flight Eagle	210	31	CL-600/601, Jetstar I/II, Corvette, Falcon 20, 50, 200	06-01334	$544.00
25.75X6.75-14	14	RIB	210	33	CL-600/601	06-01340	$875.00
26.6.75-14	16	Flight Eagle	190	38	Sabre 60, 65	06-01341	$1,221.00
23X7.00-12	12	Flight Eagle	210	28	Hawker 125 Astra SP G100	06-01342	$626.00
21X7.25-10	12	Flight Eagle, DT	225	20	GII,III,IV,V,G300, 350, 400, 450, 550, Global Express	06-01343	$473.00
24X7.7	16	Flight Leader	210	32	Beechjet 400	06-01344	$660.00
22X7.75-10	10	RIB	190	20	1, CJ1+	06-01345	$483.00
22X7.75-10	12	RIB	190	25	CIT C-2, CJ-2+	06-01346	$513.00
22X8.00-10	10	Flight Eagle	190	24	CIT I/II	06-01347	$513.00
22X8.00-10	12	Flight Eagle	190	28	CIT II, V	06-01348	$577.00
H26.5X8.0-14	14	Flight Leader	210	32	Challenger 300	06-01349	$8.25
H22X8.25-10	12	Flight Eagle	190	22	CJ-3	06-01350	$674.00
H22X8.25-10	14	Flight Eagle	190	31	Citation 550/560	06-01351	$746.00
34X9.25-16	18	Flight Eagle	210	68	GII, III, IV	06-01352	$1,298.00
H34X9.25-18	18	Flight Eagle	225	58	GIV-SP, G300,350, 400,450	06-01353	$1,697.00
B24X9.5-10.5	18	RS700	210	40	Westwind 1124	06-01354	$1,344.00
H35X11.0-18	20	Flight Eagle	335	82	GV, G500, 550	06-01355	$2,036.00
H38X12.0-19	20	Flight Eagle	210	87	Global Express	06-01356	$1,943.00
BUSINESS RADIAL AIRCRAFT TIRES							
26X6.6R14	14	Flight Radial	225	26	Falcon 20/50/200	06-01357	$1,007.00
H34x10.0R16	14	Flight Radial	190	55.7	ATR72	06-01951	$1,941.00

SPECIALTY TIRES & TUBES

Mfg. by Specialty Tires of America
(Formerly McCreary)

These fine nylon cord tires with rib tread design are rigidly tested to meet FAA Standard TSO-C62. Air Trac tires are original equipment on many of today's aircraft and offer great performance in an economical tire. Air Hawk are premium grade tires, cost more but provide longer service life. Performance, construction, and safety you can count on from Specialty Tires tires and tubes. Compare prices and get the best savings and faster service from Aircraft Spruce.

AIR TRAC TIRES & TUBES

Tube-Type Tire Size	Ply Rating	Wt./Lbs.	Tire Pressure PSI (a)	Max. Load Rating Lbs.(a)	Tire		Tube	
					Part No.	Price	Part No.	Price
5.00-5	4	4.4	31	800	06-08210	$63.80	06-08300	$73.75
5.00-5	6	4.3	50	1285	06-08200	$65.75	06-08300	$73.75
6.00-6	4	6.8	29	1150	06-08400	$76.75	06-08700	$61.95
6.00-6	6	7.0	42	1750	06-08500	$76.85	06-08700	$61.95
6.00-6	8	7.3	55	2350	06-08600	$85.95	06-08700	$61.95
15x6.00-6	4	6.3	45	1250	06-08800	$113.75	06-08901	$58.75
15x6.00-6	6	6.6	68	1950	06-08900	$113.75	06-08901	$58.75
6.50-8	6	9.5	51	2300	06-09000	$167.90	06-09200	$63.75
6.50-8	8	10.0	75	3150	06-09100	$172.75	06-09200	$63.75
6.50-10	6	10.7	60	2770	---	---	06-09500	$67.95
6.50-10	8	12.0	80	3750	06-09400	$199.90	06-09500	$67.95
6.50-10	10	15.2	100	4750	06-09410	$237.95	06-09500	$67.95
7.00-6	6	9.0	38	1900	06-09600	$144.75	06-09800	$61.75
7.00-6	8	9.4	54	2550	06-09700	$149.75	06-09800	$61.75
7.50-10	6	14.3	46	3000	06-09710	$294.00	06-09810	$94.95
8.00-6	4	10.0	23	1350	06-09900	$164.75	06-09800	$61.75
8.00-6	6	10.3	35	2050	06-10000	$171.90	06-09800	$61.75
8.50-6	6	16.5	30	2275	06-10100	$249.85	06-10200	$115.75
8.50-10	6	16.5	41	3250	06-10300	$284.95	06-10500	$89.75
8.50-10	8	19.5	55	4400	06-10400	$313.00	06-10500	$89.75

The 7.00/8.00-6 tube can be utilized in both 7.00-6 and 8.00-6 tires.

AIR HAWK TIRES

Tube-Type Tire Size	Ply Rating	Wt./Lbs.	Part No.	Price
5.00-5	4	3.8	06-07710	$68.75
5.00-5	6	4.3	06-07700	$65.80
5.005-5	10	6.2	06-07720	$79.75
6.00-6	4	6.8	06-07800	$76.85
6.00-6	6	7.0	06-07900	$81.95
6.00-6	8	7.8	06-07910	$86.75
6.50-8	6	10.5	06-07912	$169.00
6.50-8	8	10.5	06-07914	$168.75
6.50-10	6	11.5	06-07916	$192.95
6.50-10	8	11.8	06-07918	$205.95
6.50-10 Special	8	14.5	06-00416	$213.95
6.50-10	10	16.2	06-07920	$242.95
7.00-6	6	9.5	06-07922	$147.75
7.00-6	8	9.4	06-07924	$149.75
8.00-6	4	10.4	06-07926	$166.95
8.00-6	6	10.7	06-07928	$166.95
800x6	8	11.8	06-07929	$181.50
8.50-10	6	19.9	06-07932	$309.95
8.50-10	8	23.3	06-07934	$309.95
15/600-6	6	7.0	03-00208	$134.75
17.5/625-6	10	--	06-00309	$216.95
29x11-10	10	37.3	03-00211	$637.00
18-5.5	8	--	06-00310	$167.75
22/800-8	6	--	06-00311	$203.95
22/8.0-8	6	14.1	03-00210	$280.95
29/1100-10	10	--	06-00312	$546.00

SUPER HAWK TIRES

These are premium light aircraft tires which provide a stiffer, heavier sidewall and more cut resistant thread. Nylon belted for flexibility and even wear with wide center rib for best runway contact.

Call for pricing on other sizes of Hawk Tires.

Part No.	Tire Size	Ply Rating	Price.Ea.
06-17000	5.00-5	6	$142.90
06-18000	6.00-6	6	$184.75
06-17500	6.50-10	8	$264.95
06-17505	6.00-6	8	$199.00
06-17510	6.50-10	10	$271.95
06-17515	7.00-6	6	$202.95
06-17520	7.00-6	8	$194.85
06-17525	6.50-8	6	$211.95

AERO TRAINER TIRES

Tube Type Tire Size	Ply	Part No.	Price Each
5.00-5	6	06-01700	$66.75
6.00-6	6	06-01800	$74.85

Aero Trainer Tires use standard Specialty Tires tubes listed above

SPECIALTY TIRE & TUBE PACKAGES

600 X 6, 4 PLY KIT - Consists of three 600 x 6 4 ply tires and tubes. Fits PA-24-180 Comanche, PA-28 Cherokee, Beech Musketeer, Musketeer Sport, and Sundowner.
W/Air Trac tires..... P/N 06-21200 ..... $415.95
W/Air Hawk tires..... P/N 06-21205 ..... $415.95

600 X 6, 6 PLY KIT - Consists of three Specialty Tires 600 x 6 6 ply Air Trac tires and tubes. Fits Piper PA-44 Seminole, PA-30 Twin Comanche, and Cessna 337.
W/Air Trac tires..... P/N 06-21300 ..... $415.95
W/Air Hawk tires..... P/N 06-21305 ..... $430.95

6.00 X 6, 6 PLY / 5.00 X 5, 6 PLY KIT - Two Specialty Tires 6.00 x 6, 6 ply tires and tubes and one 5.00 x 5, 6 ply tire and tube. Fits Cessna 182, 182N; all 206 Skylane, Skywagon, and Station Air 207; Mooney 201, 220; Waco 250 260, PA-32 6-300 Lance.
W/Air Trac tires..... P/N 06-21100 ..... $416.95
W/Air Hawk tires..... P/N 06-21105 ..... $426.95

6.00 X 6, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 4 ply tires and tubes. Fits Bellanca Citabria 7ECA, 7GCA-A, 7GCBC and 7KCA-B.
W/Air Trac tires..... P/N 06-21110 ..... $276.95
W/Air Hawk tires..... P/N 06-21115 ..... $276.95

6.00 X 6, 4 PLY / 5.00 X 5, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 4 ply tires and tubes and one 5.00 x 5, 4 ply tire and tube. Fits Beech Super/Musketeer Sierra; Cessna 150, 172, 175, 177; Grumman AA1B, AA5; PA-28, 151, 180R, 200R.
W/Air Trac tires..... P/N 06-21120 ..... $413.95
W/Air Hawk tires..... P/N 06-21125 ..... $419.95

6.00 X 6, 6 PLY / 5.00 X 5, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 6 ply tires and tubes and one 5.00 x 5, 4 ply tire and tube. Fits Beech Debonair 33, 33A; Bonanza 33; Mooney 200, Mark 21C; Rockwell Commander.
W/Air Trac tires..... P/N 06-21130 ..... $414.95
W/Air Hawk tires..... P/N 06-21135 ..... $429.95

6.00 X 6, 6 PLY / 6.00 X 6, 4 PLY KIT - Two Specialty Tires 6.00 x 6, 6 ply tires and tubes and one 6.00 x 6, 4 ply tire and tube. Fits Bellanca 206, Viking; PA-24-250, 260, PA-32-260, 300.
W/Air Trac tires..... P/N 06-21140 ..... $415.95
W/Air Hawk tires..... P/N 06-21145 ..... $425.95

6.50 X 10, 8 PLY / 6.00 X 6, 6 PLY KIT - Two Specialty Tires 6.50 x 10, 8 ply tires & tubes & one 6.00 x 6, 6 ply tire and tube. Fits Cessna 340, 401, 402, 411, 414, 421; PA-31-300, 310, 350, PA-31P-425.
W/Air Trac tires..... P/N 06-21155 ..... $673.00
W/Air Hawk tires..... P/N 06-21160 ..... $690.00

7.00 X 6, 6 PLY / 6.00 X 6, 4 PLY KIT - Two Specialty Tires 7.00 x 6, 6 ply tires and tubes and one 6.00 x 6, 4 ply tire and tube. Fits PA-23, 160, 235, 250.
W/Air Trac tires..... P/N 06-21165 ..... $550.00
W/Air Hawk tires..... P/N 06-21170 ..... $556.00

8.50 X 6, 6 PLY KIT - Two Air Trac 8.50 x 6, 6 ply tires and tubes. Fits Bellanca Decathlon 8KCA-B and Scout 8GCBC.
W/Air Trac tires..... P/N 06-21175 ..... $730.00

MICHELIN® AIR® & AVIATOR® GENERAL AVIATION TIRES

Michelin® AIR®: The tire for demanding pilots. The sidewall compound is optimized to provide maximum ozone and ultraviolet light protection, while the MX2000 tread compound is Michelin's toughest. In addition, the new Air Cushion Inner Liner provides a protective cushion over the casing plies which guards against inner tube chafing. And the "Posi-Fit" bead construction reduces movement between the tire and the wheel for improved lateral stability.
Michelin® Aviator®: A Michelin quality tire at a great price. Like the Michelin AIR, the Aviator offers exceptional balance, a new sidewall confi guration and an extra strong nylon casing. It also features the tough MX1000 tread compound for long life, and a specialized sidewall compound to protect against ultraviolet light.

Size	Ply	Speed (MPH)	Brand	Avg W (lbs)	Applications	Part No.	Price
11.00-12	10	160	Michelin Aviator	46	"IAI 201, Bombardier DHC6, Casa 212, 235 (MLG)"	06-01397	$682.00
15x6.0-6	6	160	Michelin Aviator	7	"Beech 17, 24, Baron 58, 60, 77 - Bellanca 1730, 1731 - Cessna 172, 177, 182RG (MLG) - Cessna 336, 337 - Rockwell Int'l 695, 700, 840 (NLG)"	06-00308	$131.80
15x6.0-6	6	160	Michelin Air	7	"Cessna 172, 177, 182 - Cirrus SR20, SR22 (MLG) - Cessna 336, 337 (NLG)"	06-01398	$149.75
16x4.4	8	160	Michelin Aviator	9	Raytheon T6A Texan - Pilatus PC9 - Embraer Xingu - Fairchild SA226 (NLG)	06-01399	$230.95
16x4.4	8	160	Michelin Air	9	Cessna Mustang (NLG)	06-01401	$295.95
17.5x5.75-8	12	210	Michelin Aviator	14	"Learjet 20, 31, 35, 36 (MLG)"	06-01402	$462.00
17.5x6.25-6	10	120	Michelin Air	11	"Piper PA31, 42 (NLG)"	06-01403	$272.95
17.5x6.25-6	8	160	Michelin Air	11	Pilatus PC-12 (NLG)	06-01404	$272.95
18x4.4	10	210	Michelin Air	12	"Learjet 31, 35, 36, 55, (NLG)"	06-01410	$422.00
18x4.4	6	190	Michelin Air	13	"Cessna CJ, CJ1, CJ1+, CJ2 (NLG)"	06-01411	$419.00
18x4.4	6	160	Michelin Aviator	8	"Fairchild SA226, 227, Piper PA31 (NLG)"	06-01414	$382.00
18x5.5	10	210	Michelin Air	14	"Beech King Air 200, 55 (MLG) - Socata TBM 700, 850 (MLG)"	06-01415	$391.00
18x5.5	8	190	Michelin Aviator	12	"Beech King Air 200, 99, 100 - Cessna 337 -Socata TBM700 (MLG) - Bombardier DHC8 - Embraer EMB120, Fairchild SA226 (NLG)"	06-01416	$375.00
19.5x6.75-8	10	160	Michelin Aviator	14	"Beech King Air 300, Baron 58, 60 - Fairchild SA226, 227 (MLG)"	06-01417	$265.95
22x6.75-10	10	190	Michelin Air	18	"Beech King Air 200 (NLG), Beech 1900D (MLG), IJT36 (MLG)"	06-01422	$355.00
22x6.75-10	8	160	Michelin Aviator	16	"Beech 1900C (MLG), King Air 300 & 200 (NLG) - Tucano S312 (MLG) - Cessna Mustang (MLG)"	06-01423	$337.95
22x7.75-10	12	190	Michelin Air	20	"Cessna CJ, CJ1, CJ1+, CJ2, CJ2+ (MLG)"	06-01424	$502.00
22x7.75-10	10	160	Michelin Air	19	"Cessna 404 Titan, 441 Conquest II (MLG)"	06-01425	$437.00
22x8.0-10	12	190	Michelin Aviator	27	"Cessna Citation SII, V, Ultra (MLG)"	06-01426	$565.00
22x8.0-10	10	190	Michelin Aviator	24	Cessna Citation I (MLG)	06-01427	$515.00
22x8.0-8	8	120	Michelin Air	14	Cessna 208 (NLG)	06-01428	$398.00
29x11.0-10	10	160	Michelin Air	35	Cessna 208 (MLG)	06-01432	$623.00
380x150-5	6	120	Michelin Air	7	Robin	06-01434	$152.95
15x6.00-5	6	120	Michelin Air	7	Robin	06-01435	$185.00
5.00-5	8	160	Michelin Air	6	Eclipse 500 (NLG)	06-01436	$215.95
5.00-5	6	120	Michelin Aviator	6		06-00016	$106.75
5.00-5	6	120	Michelin Air	6	"Cirrus SR20, SR22 (NLG)"	06-08052	$158.75
5.00-5	10	120	Michelin Aviator	6		06-01437	$135.75
5.00-5	8	160	Michelin Aviator	7	Eurocopter Tigre (TLG)	06-01438	$159.75
5.00-5	4	120	Michelin Air	6		06-01439	$166.95
6.00-6	6	120	Michelin Air	9		08-08080	$199.00
6.00-6	6	120	Michelin Aviator	9		06-00018	$128.75
6.00-6	8	120	Michelin Air	9		06-08058	$199.00
6.00-6	8	120	Michelin Aviator	9		06-00314	$139.00
6.00-6	4	120	Michelin Air	9		06-01441	$181.80
6.00-6	6	160	Michelin Aviator	9		06-00018	$128.75
6.00-6	4	120	Michelin Aviator	9		06-00017	$134.85
6.50-10	12	190	Michelin Aviator	18	"Piaggio P180, Piper PA-31 (MLG)"	06-01444	$312.00
6.50-10	8	120	Michelin Air	16	"Cessna 208, 310, 335, 401, 402, 414, 421, 425, Piper PA-30, 31 (MLG)"	06-08065	$313.00
6.50-10	8	120	Michelin Aviator	16	"Cessna 208, 310, 335, 401, 402, 414, 421, 425, Piper PA-30, 31 (MLG)"	06-01445	$248.95
6.50-10	10	120	Michelin Aviator	16	Cessna 425 Conquest I (MLG)	06-01446	$284.95
6.50-10	6	120	Michelin Air	16	Beech King Air 90 (NLG)	06-01447	$290.95
6.50-10	12	160	Michelin Aviator	17	Piper PA-42 (MLG)	06-01448	$364.95
6.50-10	6	120	Michelin Aviator	16	Beech King Air C90 (NLG)	06-01449	$265.95
6.50-10	10	120	Michelin Air	16	Cessna 425 Conquest I (MLG)	06-01450	$396.00
6.50-10	10	160	Michelin Aviator	16	"Bombardier CL215, 415 (NLG), Cessna 208 (MLG)"	06-01451	$343.00
6.50-10	10	160	Michelin Air	16		06-01452	$298.95
6.50-8	8	160	Michelin Air	13	"Beech Baron 55,56 (MLG)"	06-08070	$227.95
6.50-8	8	160	Michelin Aviator	13	Pilatus PC7 (MLG)	06-00315	$199.00
7.00-6	6	120	Michelin Air	11	"Beech 33, 35, 36 (MLG)"	06-08059	$218.95
7.00-6	8	120	Michelin Aviator	11	Piper PA23 (MLG)	06-01453	$198.95
7.00-6	6	120	Michelin Aviator	11	"Beech 33, 35, 36 (MLG)"	06-00316	$176.90
7.00-6	8	120	Michelin Air	11	Piper PA23 (MLG)	08-08075	$246.95
8.00-6	6	120	Michelin Aviator	13	"Cessna 140, 185, 206, 207, 305, 01E, Socata Rallye"	06-01456	$199.00
8.50-10	10	160	Michelin Aviator	25	"Gulfstream 690, 680T - Rockwell Int'l 685, 690, 695, 700, 840 (MLG) -Pilatus PC12 (MLG)"	06-01457	$467.00
8.50-10	8	160	Michelin Air	25	"Beech 18, 50, 65, 70, 80, 88, King Air 90 - Cessna 188, 208, 308, 406 - Gulfstream 500, 560, 680, 681, 685, 720 - Mitsubishi MU2 - Piaggio 149, 166, 136 - Rockwell Int'l 500, 560, 680, 520 (MLG)"	06-01458	$367.95
8.50-10	10	160	Michelin Air	25	"Gulfstream 690, 680T - Rockwell Int'l 685, 690, 695, 700, 840 (MLG)"	06-01459	$489.95
8.50-10	8	160	Michelin Aviator	25	"Beech 18, 50, 65, 70, 80, 88, King Air 90 - Cessna 188, 208, 308, 406 - Gulfstream 500, 560, 680, 681, 685, 720 - MItsubishi MU2 - Piaggio 149, 166, 136 - Rockwell Int'l 500, 560, 680, 520 (MLG)"	06-01460	$378.95
8.50-6	6	120	Michelin Air	14	"High flotation, fixed gear"	06-01461	$272.95
H22x8.25-10	12	190	Michelin Air	20	Cessna CJ3 (MLG) - Hawker Premier 1 (MLG)	06-01463	$683.00
H22x8.25-10	14	190	Michelin Air	22	"Cessna Citation Encore, Encore+, 560 (MLG)"	06-01464	$742.00

MICHELIN® AIR X® GENERAL AVIATION RADIAL TIRES

Michelin® AIR X® radials typically weigh 20–30% less than comparable bias tires, and they operate at cooler temperatures. Helps provide measurable fuel savings, more landings per tread, longer wear characteristics and a more stable contact patch than bias tires, as well as shorter turnaround times and reduced carcass fatigue. Extra Strong Carcass Michelin's carcass design helps restrict tire growth and the stretching of rubber. Durable cut-resistant tread includes deep skid depth and specially-designed circumferential grooves. Sidewall is optimized for both ozone and ultraviolet light protection which helps reduce ozone cracking in key areas of the tire. The Michelin® AIR X® casing is more flexible than casings used in bias tires.

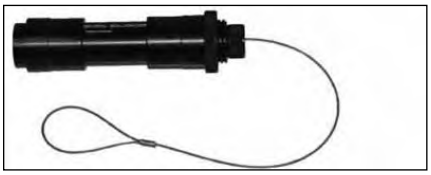
Size	Ply	Speed (MPH)	Brand	Avg W (lbs)	Applications	Part No.	Price
14.5x5.5R6		225	Michelin Air X	8	"Falcon 20, 50, 200, 2000 (NLG)"	06-01382	$996.00
14.5x5.5R6		225	Michelin Air X	8	Falcon 2000EX (NLG)	06-01383	$1,168.00
16x4.4R8	10	210	Michelin Air X	10	"Cessna Sovereign, Citation X (NLG) - Gulfstream G150 (NLG)"	06-01384	$876.00
16x4.4R8	12	190	Michelin Air X	10	Pilatus PC21 (NLG)	06-01385	$1,203.00
16x6.0R6	12	225	Michelin Air X	11	Falcon F7X (NLG)	06-01387	$1,306.00
17.5x5.75R8		225	Michelin Air X	11	Falcon 900 (NLG)	06-01388	$1,347.00
20x4.4R12	14	190	Michelin Air X	14	Pilatus PC21 (MLG)	06-01390	$1,369.00
23.5x8.0R12	14	190	Michelin Air X	24	"Cessna Citation Excel, XLS (MLG)"	06-01391	$1,620.00
26x6.6R14	14	225	Michelin Air X	22	"Falcon 20, 50, 200, 2000, 2000EX, Gulfstream G200 (MLG)"	06-01392	$1,208.00
26x6.6R14	12	210	Michelin Air X	24	"Cessna Sovereign, Citation X (MLG)"	06-01393	$1,169.00
26x6.6R14	14	225	Michelin Air X	22	Hawker 4000 (MLG)	06-01394	$1,154.00
29x7.7R15		225	Michelin Air X	31	Falcon 900 (MLG)	06-01395	$2,018.00
H32x10.5R16.5	16	225	Michelin Air X	44	Falcon F7X (MLG)	06-01396	$2,299.00

MICHELIN REGIONAL RADIAL AIRCRAFT TIRES AIR X

Size	Ply Rating	Speed (MPH)	Avg W (lbs)	Application	Part No.	Price
24X7.7R10	16	225	24	Embraer 190 (NLG)	06-01522	$850.00
32X8.8R16	12	90	41	ATR 42 (MLG)	06-01523	$1,727.00
H34X10.0R16	14	190	55	ATR 72 (MLG)	06-01524	$1,987.00
H38X13.0R18	20	225	84	Embraer 170, 175, 175AR (MLG)	06-01525	$3,031.00
H41X16.0R20	22	225	129	Embraer 190 (MLG)	06-01526	$3,716.00

MICHELIN REGIONAL BIAS AIRCRAFT TIRES

Size	Ply Rating	Speed (MPH)	Special	Avg W (lbs)	Application	Part No.	Price
17.5x6.25-6	8	190	-	11	Saab 340	06-01530	$233.95
18x4.4	12	210	CH	13	Bombardier CRJ100/200	06-01406	$513.00
18x4.4	10	210	CH	13	Fairchild Metro	06-01409	$462.95
18x5.5	10	210	-	14	Embraer EMB120ER	06-01415	$391.00
18x5.5	8	210	-	12	Saab 2000	06-01538	$394.95
19.5x6.75-8	8	210	CH	15	Embraer ERJ135, 140, 145ER/LR	06-01539	$406.95
19.5x6.75-8	10	190	-	15	Fairchild Metro	06-01540	$266.95
20.5x6.75-10	12	225	CH	19	bombardier CRJ700/900	06-01541	$942.00
24x7.25-12	12	190	-	26	Embraer EMB120	06-01542	$582.00
24x7.7	14	190	-	25	Saab 340	06-01543	$493.00
24x7.7	14	190	-	26	Saab 340 - Dornier Do328	06-01544	$624.00
28x9.0-12	12	160	-	35	Jetstream 31	06-01547	$769.00
30x9.5-14	16	210	0	49	Embraer ERJ135, 145ER	06-01548	$1,075.00
32x8.8	14	210	-	46	Saab 2000	06-01549	$1,017.00
450x190-5	10	190	-	14	ATR 42, 72	06-01550	$534.00
670x210-12	10	160	-	30	Embraer EMB110, 121, Xingu	06-01551	$637.00
H29x9.0-15	16	210	-	45	Bombardier CRJ100/200	06-01552	$868.00
H30x9.5-16	16	225	0	55	Embraer ERJ140, 145LR	06-01553	$1,183.00
H31x9.75-13	12	190	-	39	Bombardier DHC8 - 100/200	06-01554	$921.00
H36x12.0-18	18	225	0	89	Bombardier CRJ700/900	06-01555	$1,937.00



AIRCRAFT WHEEL BALANCER

The Aircraft Wheel Balancer uses the same static balancing method that is used to balance helicopter rotors. The patent pending design features a pivot point that is easily adjustable on-the-fly for maximum sensitivity, and includes bushings to accomodate both 1 1/4" and 1 1/2" axle sizes.

You now have an extremely portable wheel balancer that is small enough to fit in a tool box and does not require a bulky stand. The McFarlane design is more precise than other static balancing methods, and allows the wheel to be balanced while the bearings and seals are installed.

It's fast and easy! Due to the horizontal balancing and orientation, test weights can be temporarily set in place and easily adjusted while balancing. This eliminates the need to tape the test weights. The McFarlane wheel balancer is precision machined with a black, hard anodized finish, and comes in an oiled wooden case. This is a lifetime tool that fits almost all light aircraft wheel/tire assemblies.

Features:

- Adjustable pivot point for maximum sensitivity (Patent Pending)
- More accurate than "bubble" or "axle and bearing" style balancers
- Portable - small enough to fit in your tool box
- Does not require removal of bearings or seals
- High quality wooden case
- Less than half the price of bulky axle and bearing type balancers

P/N 05-06878 .....$174.75

MICHELIN® TIRES – RETREAD TIRES

CONDOR AIRCRAFT TIRES

Strong sidewalls for exceptional durability, even after frequent hard landings. Tough treads compounded for high abrasion resistance, low heat generation and extra long life. Smooth liners to help prevent tube chafing. Full FAA qualification based on thorough static and dynamic testing. Each production tire is subject to final inspection and a check for weight and balance. Limited warranty guarantees that each Condor tire is free from any manufacturing defects. Condor tires are available in a variety of sizes for light to medium general aviation aircraft.

Size	Ply	Speed (MPH)	Brand	Avg W (lbs)	Part No.	Price
15x6.0-6	6	120	Condor	7	06-08040	$109.90
29x11.0-10	10	160	Condor	31	06-01379	$449.95
5.00-5	6	120	Condor	6	06-08010	$74.00
5.00-5	4	120	Condor	6	06-08005	$78.85
5.00-5	10	120	Condor	6	06-00195	$109.00
6.00-6	6	120	Condor	9	06-08020	$99.00
6.00-6	8	120	Condor	9	06-08025	$99.00
6.00-6	4	120	Condor	9	06-08015	$102.99
6.50-10	8	120	Condor	16	06-00197	$214.95
6.50-10	10	120	Condor	16	06-00198	$303.00
6.50-8	8	120	Condor	13	06-00199	$179.00
6.50-8	6	120	Condor	13	06-01380	$191.75
7.00-6	8	120	Condor	11	06-08035	$152.75
7.00-6	6	120	Condor	11	06-08030	$159.00
8.00-6	8	120	Condor	13	06-08050	$196.75
8.00-6	6	120	Condor	13	06-08045	$183.75
8.50-10	8	120	Condor	24	06-00201	$397.00
8.50-10	10	120	Condor	24	06-01381	$398.95

LG

MICHELIN® AIRSTOP® AIRCRAFT INNER TUBES

MICHELIN® AIRSTOP® Aircraft Tubes provide long-lasting, dependable performance you can rely on in just about any operating condition. Because they're made with advanced materials, MICHELIN® AIRSTOP Aircraft Tubes offer extended air retention and can sustain temperatures as low as minus 50°C. So when you fly with MICHELIN® AIRSTOP Aircraft Tubes, you fly with confidence.

Size	Valve Stem	Avg W (lbs)	Part No.	Price
15x6.0-6	TR-20 / Straight	1	06-01373	$76.75
15x6.0-6 (H60 TW)	TR-67 / Bent 90 degrees	1	06-00853	$113.99
17.5x6.25-6	TR-20 / Straight	1	06-01386	$57.75
22x8.0-8	TR-15 / Straight	3	06-01374	$99.50
5.00-4	TR-67 / Bent 90 degrees	1	06-01375	$117.75
5.00-5	TR-67A / Bent 90 degrees	1	06-00019	$74.50
6.00-6	TR-20 / Straight	1	06-00021	$67.75
6.50-10	TR-25 / Straight	2	06-00849	$72.90
6.50-8	TR-15 / Straight	2	06-00851	$72.75
7.00-6	TR-20 / Straight	2	06-00848	$69.75
7.00-8	TR-15 / Straight	2	06-00851	$72.75
7.50-10	TR-25 / Straight	3	06-01376	$95.75
7.50-14	TR-176A / Bent 60 degrees	4	06-01377	$176.75
8.00-6	TR-20 / Straight	2	06-00848	$69.75
8.50-10	TR-25 / Straight	3	06-00850	$115.75
8.90-12.50	TR-15 / Straight	5	06-01378	$149.85
355 x 150-4	Bent 90°	2	06-01487	$119.00
7.00-6	TR-20 / Straight	2.5	06-00848	$69.75
6.50-8	TR-15 / Straight	2.5	06-01490	$76.75
29 x 11.0-10	TR-15 / Straight	5.5	06-01491	$159.75

RETREAD TIRES

500-5 10 ply high performance retreaded tires *Subject To Limted Core Availability*
Their premium retreads are produced by: Aero Wheel & Brake Service Corp. Aero WBS holds FAA certification to retread high speed aircraft tires up to 225 MPH.
Their sizes range from small piston engine aircraft through Regional Jet aircraft. 95% of the worlds airlines depend on retreads not only for cost control, but for the extended life they provide over most new tires.

Size	Ply	Part No.	Price
500-5 Standard	6	06-01468	$54.95
500-5 Monster retread - 9/32nds tread depth	6	06-01469	$78.95
500-5 Elite - 2 wide hydro-grooves. With 9/32nds tread depth.	6	06-01470	$74.75
600-6 Standard	6	06-01472	$66.75
600-6 - Monster retread. Almost 12/32nds tread Depth	6	06-01473	$82.75
600-6 - Elite Premium 2 Groove Top of the line. 2 Wide Hydro-Grooves	6	06-01474	$85.75
15/600-6 Standard	6	06-01471	$75.75
700-6 Standard	6	06-01475	$98.75

Subject To Limted Core Availability **Tire cores are of various makes and models**

AERO CLASSIC TIRES & TUBES

AERO CLASSIC TIRES

Aero Classic is a proprietary line of over 50 aircraft tires and tubes made to meet or exceed the original specifications.

Size	Ply	Description	Part No.	Price
10/350-4	4	Aero Classic Premium	06-01238	$45.50
10/350-4	6	Aero Classic Premium - HD	06-01239	$57.75
11/400-5	8	Aero Classic Wide Channel	06-01240	$55.75
11/12TL	8	Aero Classic Tubless	06-01467	$624.00
12.5-4.5	10	Aero Classic Channel	06-01241	$245.95
15/600-5	6	Aero Classic Rib	06-01242	$121.95
200-50	6	Aero Classic Rib	06-01243	$31.50
280/250-4	4	Aero Classic Premium	06-01244	$42.50
280/250-4	6	Aero Classic Premium - HD	06-01245	$53.75
380/150-5	6	Aero Classic Rib	06-01249	$123.75
400-6	6	Aero Classic Rib	06-00944	$58.50
400-4	8	Aero Classic Rib	06-00844	$58.75
420-150	4	Aero Classic Rib	06-01250	$198.75
500-5	6	Aero Classic All Weather	06-01252	$102.75
500-5	10	Aero Classic All Weather	06-01253	$155.75
6 x 2		Aero Classic Solid Tailwheel	06-01044	$62.75
600-6	4	Aero Classic All Weather	06-01254	$121.75
600-6	6	Aero Classic All Weather	06-01255	$141.75
600-6	8	Aero Classic All Weather	06-01256	$152.99
600-6.5	4	Aero Classic Rib	06-01257	$211.95
700-7.5	6	Aero Classic All Weather	06-01258	$395.00
700-8	6	Aero Classic Diamond Tread	06-01126	$287.95
8.9 x 12.5	6	Aero Classic Diamond (Stearman)	06-01518	$578.00
10X3.50-4	4	Aero Classic Rib	06-01187	$79.85

AERO CLASSIC RIB / SAWTOOTH TIRES

Size	Ply	Description	Part No.	Price
11/400-5	2	Rib Tire	06-00715	$16.50
11/400-5	8	Rib Tire	06-07500	$34.50
300-4	4	Rib Tire	06-00361	$34.50
400-6	2	Rib Tire	06-00363	$21.50
800-6	4	Sawtooth Tire	06-00366	$82.75

LEAKGUARD TUBES

EASY INFLATE Valve Makes Inflation Less Of A Chore. Valve Is Angled Toward You, Easier To Inflate, Easier To Check The Pressure. WILL NOT WORK WITH HUBCAPS "LEAKGUARD®" Inner Tubes Are Blended With A Proprietary Leak Resistant Compound For Less Maintenance

Size	Valve	Model	Part No.	Price
10/350-4	TR-87	Tube, Leakguard Butyl	06-00761	$13.85
11/400-5	TR-87	Tube, Leakguard Butyl	06-00357	$13.50
1100-12	TR-13	Tube, Low Temp. Natural	06-01218	$145.75
12.5-4.5	TR-67	Tube, Leakguard Butyl	06-00762	$67.75
15/600-6	TR-20	Tube, Leakguard Butyl	06-00770	$51.95
15/600-6	TR-67	Tube, Low Temp. Natural	06-01220	$99.75
18-5.5	TR-15	Tube, Leakguard Butyl	06-01221	$126.75
19.5/675-8	TR-15	Tube, Leakguard Butyl	06-01222	$57.75
22/800-8	TR-15	Tube, Leakguard Butyl	06-01223	$77.75
280/250-4	TR-87	Tube, Leakguard Butyl	06-00760	$13.95
29/1100-10	TR-150	Tube, Leakguard Butyl	06-01224	$148.50
420-150	TR-67	Tube, Low Temp. Natural	06-01226	$102.95
500-4	TR-67	Tube, Low Temp. Natural	06-01227	$87.75
500-5	TR-67	Tube, Leakguard Butyl	06-00755	$59.75
600-6	TR-20	Tube, Leakguard Butyl	06-00754	$49.95
600-6.5	TR-67A	Tube, Low Temp Natural	06-01229	$99.95
600-6.5	TR-67	Tube, Low Temp Natural	06-01230	$104.95
650/700-8	TR-15	Tube, Leakguard Butyl	06-00766	$56.75
650-10	TR-25	Tube, Leakguard Butyl	06-01232	$55.95
700/800-6	TR-20	Tube,Leakguard Butyl	06-00764	$52.85
750-10	TR-25	Tube, Leakguard Butyl	06-00768	$78.75
800-4	TR-12	Tube, Low Temp. Natural	06-00821	$166.75
850-10	TR-25	Tube, Leakguard Butyl	06-00769	$69.85
890-12.50	TR-15	Tube, Low Temp. Natural	06-01237	$139.75
10-3.50	TR-87	Tube, Leakguard Butyl	06-02031	$25.50

AERO CLASSIC TUBES

Size	Valve	Part No.	Price
11/400-5	TR-13	06-00357	$13.50
11 x 4.50 x 6	TR-87	06-00716	$13.90
10/350-4	TR-87	06-00354	$13.95
400-6	TR-87	06-00945	$16.50
200-50	TR-87	06-01368	$18.80
410/350-5	TR-87	06-00714	$11.50
480/400-8	TR-87	06-00720	$12.50
700/800-6	TR-87	06-00358	$25.50
800-4	TR-12	06-00821	$166.75
*850-6	TR-20	06-00765	$93.75
*850-10	TR-20	06-01236	$130.95

* Can be used with Tundra Tires.

AZUSA 4 PLY TURF SAVER TIRE 16-650 X 8

Azusa Turf Saver Tire 16-650 x 8. 4 ply. Width: 6.4 in. OD:16.4

Tire 16-650 x 8 .....P/N 06-01579..... $43.75

Tube #7118 16-650/750 x 8 .....P/N 06-01593..... $15.50

HOMEBUILT TIRES & TUBES

These industrial tires & tube assemblies from Goodyear are used on a unique variety of homebuilt & ultralight aircraft airplanes. Sold as set of tire & tube only.

Dimensions	Ply	Part No.	Price
4.10 x 3.50 x 4	4 PLY	06-10830	$27.50
3.40 x 3.00 x 5	4 PLY	06-10840	$21.80
11 x 4.00 x 5	2 PLY	06-10860	$35.00
13.5 x 6.00 x 6	2 PLY	06-10870	$37.00
4.80 x 4.00 x 8	4 PLY	06-10880	$28.00
400x6 Bent Stem	--	06-01503	$17.50
400X6 Strgt. Stem	--	06-00945	$16.50
4.10 x 3.50 x 5	--	06-00714	$11.50
11 x 400x 5	2 PLY	06-00715	$16.50
11 x 400 x 5	--	06-00716	$13.90
4.80 x 4.00 x 8	--	06-00720	$12.50
20 x 7.00 x 8	2 PLY	06-01596	$146.75

*2008 tire superceded by Carlisle.

11.400 X 5 TIRES & TUBES

This tire fills the size gap between the 5.00-5 aircraft tire and the 3.40-5 industrial tire. Looks like a scaled-down 5.00-5. Fits VariEze, KR's and most experimentals using 5" wheels. These tires require tubes. (tube-type). Formerly known as Lamb tires.

11.400-5 (6 Ply) Tire .....P/N 06-07400..... $31.50

11.400-5 (8 Ply) Tire .....P/N 06-07500..... $34.50

11.400-5 Tube.....P/N 06-07600.....$9.75

TIRES & TUBES FOR ULTRALIGHTS

TIRES

Part No.	Nom. Size	W	Dia.	Price
06-00361	300 x 4	3.2"	10.0"	$34.50
06-00362	400 x 5	3.9"	10.5"	$13.50
06-00363	400 x 6	4.1"	13.0"	$21.50
06-00366	800 x 6	6.0"	16.3	$82.75

TUBES

Part No.	Size	Price
06-00354	300x4	$13.95
06-00355	3.50x5	$15.50
06-00356	600x6	$17.50
06-00357	400x5	$13.50
06-00358	800x6	$25.50

RIBBED / FLAT PROFILE TIRES

Ribbed/Flat Profile Tires. Price per tire. Note: These are not automotive tires, extra inflation precautions are required.

Size / Tire	Ply / Width	OD* / Innertube	Part No.	Price
11-400 X 5 / 7164	2 / 3.2"	10.5" / 7131	06-01571	$21.50
11-400 X 5 / 7046	4 / 3.9"	10.5" / 7131	06-00362	$13.50
11-400 X 5 / 7046-8	8 / 3.2"	10.8" / 7131	06-01573	$31.65
13-500 X 6 / 7168	2 / 4.8"	12.6" / 7133	06-01568	$27.85
410/350 x 6	4 / 4.0"	12.5 / 7039	06-00074	$18.50
13-500 X 6 / 7018	4 / 4.8"	12.6" / 7133	06-01572	$24.60
13-650 X 6 / 7031	4 / 6.0"	12.5" / 7141	06-01575	$38.75
15-600 X 6 / 7169	2 / 5.9"	14.8" / 7125	06-01576	$32.50
800 X 6 / 7007	4 / 8.0"	16.0" / 7138	06-00366	$82.75
16-650 x 8 /7024-2	2 / 6.4"	16.4" / 7118	06-01609	$43.75
16-650 X 8 / 7024-2	2 / 6.4"	16.4" / 7118	06-01579	$43.75
18-850 X 8 / 7002	4 / 8.0"	16.5" / 7120	06-01580	$58.50
18-950 X 8 / 7027	4 / 8.0"	17.4" / 7120	06-01581	$65.50
13-500 x 6 / 7018	2 / 4.8"	12.6" / 7133	06-01568	$27.85
15-600 x 6 / 7050-2	2 / 5.9"	14.8" / 7125	15-06910	$31.75

Tubes	Part No.	Price
Tube #7133 410/350X6	06-00075	$7.95
Tube #7130 410/350 X 4	06-00773	$7.35
Tube #7132 410/350 X 5	06-00775	$8.75
Tube #7131 340/300 X 5	06-00822	$7.90
Tube #7129 280/250 X 4	06-01288	$5.95
Tube #7141 410/350X6	06-01590	$11.75
Tube #7138 800 X 6	06-01592	$21.65
Tube #7118 16-650/750 X8	06-01593	$15.50
Tube #7125 15-600 X 6	15-04869	$11.95
Tube #7116 11-600 X 5	15-06300	$12.90
Tube#7120 18-950 X 8	15-04731	$24.50
Tube #7121 480/400 X 8	7121	$10.85

SAWTOOTH TREAD TIRES AND TUBES

Description	Part No.	Price
Tire 4.10/350 X 4 4 PLY	06-00772	$13.65
Tire 4.10/350 X 5 4 PLY	06-00774	$15.70
Tire 280/250 X 4 4PLY	06-01287	$9.95
Tire #7038 3.40 X 3.00 X 5 4 PLY	06-01655	$13.90
Tire #7039 410/350X6 4PL	06-00074	$18.50
4.10 x 3.50 x 5 Tire and Tube Kit	06-01659	$27.20
Tube #7130 410/350 X 4	06-00773	$7.35
Tube #7132 410/350 X 5	06-00775	$8.75
Tube #7129 280/250 X 4	06-01288	$5.95
Tube #7131 340/300 X 5	06-00822	$7.90
Tube #7133 410/350X6	06-00075	$7.95
Azusa Sawtooth 480/800X8 4 PLY TIRE	06-01948	$23.95
Tube #7121 480/400 X 8	7121	$10.85
Tube #7131 340/300 X 5	7131	$7.90

LG

MASTER BRAKE CYLINDERS

BERINGER BRAKE PADS

Friction material: sintered metal. High coefficient of friction, very long life time, no fading till very high temperatures: 1100° F
Includes: 2 brake pads (for 1 brake caliper), bolts and procedure

ZEA01 OEM Brake pads for 2 pistons caliper.....P/N 06-01103 ..... $52.75
ZEA02 OEM Brake pads for 2 pistons caliper.....P/N 06-01484 ..... $72.00
Parking Brake ValveMineral-Based Fluid .....P/N 06-01108 ..... $298.00

BERINGER BRAKE LINES FOR RV'S

Brake hose is stainless steel braided with PTFE inner tube and stainless steel fittings.It provides consistent brake pedal pressure without spongy feeling. The flexibility allows landing gear leg movements and avoids leakage that appears with hardline tube. These brake lines connect brake calipers to fuselage connectors. Each brake line is pressure tested and delivered with certificate. Includes: set of 2 brake lines, certificate

Set of 2 Brake lines for RV6, 7, 9.....P/N 06-01122 .....$198.00
Set of 2 Brake lines for RV6A, 7A, 9A.....P/N 06-01123 .....$198.00

BERINGER REPAIR / OVERHAUL KITS

Repair kits are available for the following BERINGER® parts: Hand master cylinder, Rudder pedal master cylinder, 2 and 3 piston brake caliper. Includes all wear parts: pistons, seals, screws, grease, repair procedure.

Description	Part No.	Price
Repair kit for rudder pedal master cylinder HBA01: all piston seals, specific grease, ball bearings, copper seals, instructions	06-01114	$137.95
Repair kit for 2 piston caliper : piston seals, pistons, specific grease, copper washer	06-01115	$92.50

CLEVELAND MASTER BRAKE CYLINDERS

MODEL 10-35 - This model has a built-in reservoir and is used in production aircraft. Cast aluminum construction. 5/8" bore, 1.2" stroke, 0.36 cu. in. displacement. Outlet 1/8" NPT. Pin center length 8". Designed to mount on rudder pedal. Formerly Gerdes Model A-049. ..... P/N 10-35 .....$589.00
Model 10-35 O-Ring Kit..... P/N 199-513 ..... $19.90

MODEL 10-20 - Spring-loaded piston type assembly without reservoir. Simple design assures long troublefree service. Pin center length 7-1/2". Bore 9/16". Stroke 1.25". Weight: 10 oz. Used on Pitts Special, Acro-Sport and other homebuilts. ..... P/N 10-20 .....$299.95
Model 10-20 & 10-19 O-ring kit ..... P/N 06-10600 ..... $14.75

MODEL 10-19 - Used on Pitts and other homebuilts. Similar to Model 10-20 except with ports aligned differently.....P/N 10-19.....$699.00
Model 10-20 & 10-19 O-ring kit ..... P/N 06-10600 ..... $14.75

MODEL 10-5 - Same type construction as Model 10-20. Model 10-5 has parking brake feature, Model 10-5B does not. 1/8" NPT ports, on opposite sides of cylinder, have AN823-4D fittings for use with 1/4" brake line. Pin center length 8". Wt. 9.5 oz. Bore 0.562". Stroke 1.25". Used on Piper PA25 & homebuilts.
Master Cylinder Number 10-5 ..... P/N 10-5 .....$2,653.00
Master Cylinder Number 10-5B..... P/N 10-5B.....$1,153.00
Model 10-5B O-Ring kit (199-503)..... P/N 06-00708 ..... $36.50
Model 10-5 O-Ring kit (199-502) ..... P/N 06-10700 ..... $34.90

MODEL 10-54 - Spring-loaded piston type assembly without reservoir. Simple design assures long trouble-free service. Pin center length 7.88". Bore 5/8". Stroke 1.62". Wt. .45 oz. Ports in-line, no fittings. P/N 06-01214 .....$302.00

MASTER CYLINDER O-RING KIT

O-Ring Kit is for use with 5/8" bore cylinders in the 670, 671, 672, 673, and 674 Series. For use with MIL-H-5606 fluid only

O-Ring kit contains 1 ea of the following O-Rings : • Spruce PN: AN6227B-3 (MS28775-008) • Spruce PN: AN6227B-7 (MS28775-012) Spruce PN: AN6227B-9 (MS28775-111) • Spruce PN: AN6227B-10(MS28775-112) ..... P/N 06-00805.....$3.75

CLEVELAND 199-512 MASTER CYLINDER REPAIR KIT

Elastomeric cure date required per ESP3620. This Service Kit will overhaul one 10-30, 10-30A, 10-30C, or 10-300 Master Cylinder Assembly. CM10-30 Overhaul Instructions for 10-30, 10-30A, 10-30C, & 10-300.....P/N 06-01130..... $20.70

MATCO MCMC-4 MASTER CYLINDER

MATCO mfg's MCMC-4 master cylinder uses a REMOTE reservoir. The MCMC-4 can be used in individual or dual brake applications. Buna-n orings are used in this assembly. Mil-H-5606 aircraft hydraulic fluid or compatible fluids are reccomended. DOT5 may be used but not DOT5.1 which contains glycol. DOT3 and DOT4 may not be used and will cause immediate damage to the seals. The MCMC-4 master cylinder measures 8.05 +-0.25 inches from end to end and 7.5 +-0.25 inches from mounting hole to mounting hole. A 0.625 inch diameter piston is used. Available stroke is approximately 1.388 inches and displacement is 0.43 cubic inches. The ports on all MATCO mfg master cylinders are 1/8 inch NPT (except the MC-4E). The MC-4 has an adjustable clevis.

UNIVERSAL - Vertical or horizontal mounting with exterior reservoir.
MC-4.....P/N 06-11150.....$94.75
MC-4A (0.50" shorter than the MC-4) .....P/N 06-11100.....$99.90
Replacement O-Rings for Master cylinders .....P/N 06-11200.....$0.71/ ea

MATCO MCMC-5 MASTER CYLINDER

MATCO mfg's MCMC-5 master cylinder uses a INTERNAL reservoir. The MCMC-5 can be used in individual or dual brake applications. Buna-n orings are used in this assembly. Mil-H-5606 aircraft hydraulic fluid or compatible fluids are reccomended. DOT5 may be used but not DOT5.1 which contains glycol. DOT3 and DOT4 may not be used and will cause immediate damage to the seals. The MCMC-5 master cylinder measures 8.25 inches from end to end and 7.7 inches from mounting hole to mounting hole. A 0.625 inch diameter piston is used. Available stroke is approximately 1.388 inches and displacement is 0.43 cubic inches. The ports on all MATCO mfg master cylinders are 1/8 inch NPT (except the MC-4E). The MC-5 has an adjustable clevis. The MC-5 can not be used in series with a second MC-5 or MC-5A

VERTICAL STYLE - Cylinder for vertical mounting, with steel housing and reservoir. MC-5 .....P/N 06-11000.....$99.75
MC-5A (0.50" shorter than the MC-5) .....P/N 06-00375.....$107.75

MC-7 MASTER CYLINDER - The black anodized MC-6 is designed to attach to a 1" diameter control stick and function similar to a motorcycle brake. Designed for ultralight aircraft, it is completely self-adjustable as the lining wears and draws additional fluid from the cylinder. The 6:1 mechanical leverage allows the average pilot to generate 1,500 psi in the system. .P/N 06-00014.....$168.75

HEGAR MASTER CYLINDERS

5" SINGLE LEVER MASTER CYLINDER - 5" single lever, foot operated. Designed for single braking.
1/2" Bore ..... P/N 06-01277.....$89.75
5/8" Bore ..... P/N 06-01671.....$89.75

5" DUAL LEVER MASTER CYLINDER - 5" dual lever, foot operated. Designed for differential braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes.
1/2"..... P/N 06-01278..... $136.95
5/8"..... P/N 06-01611..... $175.75
3/4"..... P/N 06-01612..... $175.75

7" SINGLE LEVER MASTER CYLINDER - 7" single lever, hand operated. Designed for single braking. Comes in your choice of 1/2", and 5/8" bore sizes. P/N 06-01279.....$89.75

7" DUAL LEVER MASTER CYLINDER - 7" dual lever, hand operated. Designed for differential braking. Comes in your choice of 1/2", 5/8" and 3/4" bore sizes. P/N 06-01280..... $136.95

STANDARD MASTER CYLINDER WITH 2 INCH ROUND PEDAL

16982 STANDARD master cylinder with 2" round pedal cylinder. STANDARD master cylinder with 2" round pedal. Can be used for hand or foot operation. Comes with mounting bracket as shown.
P/N 06-00328..... $67.75

MASTER CYLINDER PLUG

Master cylinder plug 1/8" NPT for Black Max.
P/N 06-01028.....$0.60

O-RING KIT FOR AIRCRAFT BRAKES

Replacement o-ring for 6.375" or 6" brake caliper. Simply remove the piston, clean, lube and install the new o-ring for a perfect seal. Kit comes with two o-rings for one set of calipers (one aircraft). P/N 15-05062.....$4.95

BRAKE RESERVOIRS - BRAKE BLEEDERS

CLEVELAND BRAKE LINE BLEEDER 87-5

A unique tool which simplifies the brake bleeding job. This brake line bleeder can be used to service all brake assemblies utilizing the bleeder screw assembly pictured above. P/N 06-01202 ..... $126.75

ACS BRAKE BLEEDER ASSEMBLY

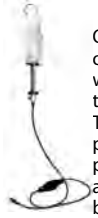
Universal brake bleeder fitting. Fits all standard brake systems. 1/8" male NPT Seat is brass. Bleeder screw is stainless steel. P/N 11225 ..... $9.55 Ea.

HYDRAULIC BRAKE BLEEDER TANK

This Deluxe Brake Bleeder Tank has been completely redesigned to resist the solvent effects of most types of aviation brake fluids. The high-impact plastic reservoir and specialized seals are compatible with 5606 and Skydrol. The hand operated pressurizing pump has also been totally re-engineered to deliver more pressure with fewer strokes. Includes a Cleveland adapter and the universal adapter which will fit most brake receptacles. 12 lbs (5.5Kg) shipping weight.225DX

Economy Bleeder Tank ..... P/N 06-11413-1 ..... $71.96
Option Adapter for Brake Bleeder ..... P/N 06-11414 ..... $23.96

HOMEBUILDERS BRAKE BLEEDER



Quickly and easily bleed and flush your brakes without the aid of another person. By using a reverse flow system, combined with slow fluid flow, one person can fill an empty brake system in less than 15 minutes without having air in the brakes. This is a gravity fed brake bleeder and does not require compressed air. This system is so easy that once you start the process you can walk away; come back in 15 minutes later and the job is done. Commonly used for Cleveland & Matco brakes. Not FAA approved. P/N 06-00120 ..... $85.35

BRAKE BLEED VALVES FOR CLEVELAND & MCCAULEY WHEELS

The bleeder valves consist of a bleeder needle, bleeder seat, needle cap, and in some cases an O-ring. Bleeder seats are precision manufactured from stainless steel for corrosion resistance, and cadmium plated to prevent galvanic corrosion with the magnesium housing. The bleeder needle is made from strong, heat treated 17-4 stainless steel. Two kits are required per aircraft. FAA Approved.

Model	Part No.	Price
MCBB-KT-1	05-06974	$23.90
MCBB-KT-2	05-06975	$31.85
MCBB-KT-3	05-06976	$34.50
MCBB-KT-4	05-06977	$49.50
MCBB-KT-5	05-06978	$65.75

BLEEDER SCREW PLUG

Steel set screw with nylon flat point 1/4-28x3/8" Bleeder screw plug. P/N 06-01674 ..... $1.25

90 DEG COMPRESSION FITTING

90° Compression fitting 1/8" NPT x 1/8" Tube.
P/N 06-01673 ..... $9.90

ACS MODEL A-315 RESERVOIR

Machined from 6061-T6 billet and anodized for improved corrosion resistance. Available with choice of filler port location for firewall or floor mounting. Capacity 5 oz. Size: 2-1/4" dia. x 2-1/2" long. Wt: 7oz. Specify style.

P/N A-315 (firewall mounting) $45.85
P/N A-315-1 (floor mounting). $43.50

ACS MODEL A-600 RESERVOIR

Machined from 6061T6 billet. Cap is threaded into body and sealed with a Viton o-ring for easy filling and cleaning. Cap and body have 1/8" female threads. 1-3/8" dia. x 2-3/8" high. Capacity 1.8 oz. Can be threaded directly into master cylinder port. Two units required on most installations (one per master cylinder). Supplied with vented plug in cap and 1/8" NPT male fitting in body. P/N 06-00391 ..... $22.85 ea.

ACS MODEL A-650 RESERVOIR

Machined from 6061T6 billet and anodized for improved corrosion resistance. Attaching bracket is included for firewall or other installation. Extra capacity of 70 ml. Supplied with vented plug in cap and outlet has a female 1/8 NPT thread."
P/N 06-01480 ..... $39.65

ADVANCED AERO BRAKE RESERVOIR

This quality brake reservoir is manufactured from 6061 T6 aluminium and tig welded, finished in an anodized red.
P/N 06-01494 ..... $175.00

BEECHCRAFT TYPE BRAKE RESERVOIR

For Beechcraft. 12oz & 8oz Available in Silver or White.

Silver 8 oz ..... P/N 05-07194 ..... $103.75
Silver 12 oz ..... P/N 05-07117 ..... $74.95
White 8 oz ..... P/N 05-07196 ..... $104.75
White 12 oz ..... P/N 05-07118 ..... $74.95

PETRO BRAKE BLEEDER

Clean and test carburetors and more. Bleed power steering systems. Bleed aircraft brakes. Pressure test fuel systems to 100 psi. Reverse, pressure, and vacuum bleed. Test automatic transmissions. Test pressure and vacuum sensors. Patented. Use for all petroleum fluids. *NOT for automotive brake fluid*** ..... P/N 12-03214 ..... $179.99

MATCO BRAKE FLUID RESERVOIR

This brake fluid reservoir from Matco features a clear plastic bowl for easy inspection of reservoir fluid. Furnished with pre-drilled aluminum flange for easy mounting.Small and compact, this reservoir mounts almost anywhere. Temperature limit is 250°F Reservoir only
P/N 06-11225 ..... $29.50
Reservoir Kit (includes reservoir, tubing, & fittings for installation) ..... P/N 06-11230 ..... $46.95

MATCO MCR-100A AEROBATIC REMOTE RESEVOIR

This Remote Reservoir is designed for both aerobatic or nonaerobatic flight and includes mount bracket, cap,check valve, and bowl. Reservoir has approximately 2 oz. volume and has valve incorparated for checked flow to the vent when inverted or negative g's. Reservoir includes 1/8 NPT adapter fitting and seal for connection to poly bowl and easy open top. ..... P/N 06-01662 ..... $51.75

BERINGER FLUID RESERVOIR

Lightweight translucent plastic reservoir with aluminum anodized cover and brake fluid level indication. No leakage of fluid with flexible gasket. Use only DOT4 brake fluid in this reservoir. Working capacity: 0.3 cu in, total capacity: 0.67 cu in. Includes: 1 reservoir, EPDM hose 1.5 ft, stainless steel clamp ..... P/N 06-01105 ..... $69.75

GROVE BRAKE FLUID RESERVOIRS

067-050 - Grove remote reservoirs are quality machined from 6061 billet. Top is held in place with a snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance. Normal installation requires two (one for each master cylnder). Supplied with 1/8" NPT Fitting. Attaches directly to the master cylinder. Holds 1.10 fluid ounces. 1.98" High. 1.38" Dia. 1.5 oz
P/N 06-00818 ..... $29.90

067-067 - Grove remote reservoirs are quality machined from 6061 billet. Top is held in place with a snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance. Attaches to firewall or other remote location with integral 10-32 tapped holes. 1/8" Female NPT thread at side of reservoir and hold 3.25 fluid ounces. 2.63" High. 2.00" Dia. 3.3 oz
P/N 06-01744 ..... $49.85

067-054 - Grove remote reservoirs are quality machined from 6061 billet. Top is held in place with a snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance. Attaches to firewall or other remote location. Adequate capacity to serve both master cylinders. 1/8" Female NPT thread at bottom of reservoir and hold 3.6 fluid ounces. 2.75" High. 1.75" Dia. 3.6 oz
P/N 06-00819 ..... $39.95

067-065 - Grove remote reservoirs are quality machined from 6061 billet. Top is held in place with a snap ring with O-ring seal. Supplied with vented 1/8" NPT cap plug. Anodized for corrosion resistance. Attaches to firewall or other remote location with integral 10-32 tapped holes. 1/8" Female NPT thread at bottom of reservoir and hold 3.38 fluid ounces. 2.75" High. 2.00" Dia. 3.3 oz.
P/N 06-01743 ..... $47.85

LG

MIL-PRF-5606H BRAKE FLUID

FLAMMABLE

Petroleum-base hydraulic fluid for use with brake and hydraulic systems with synthetic rubber seals. Meets specification MIL-PRF-5606H. Colored red.

P/N 09-27110 ..... Pint $4.95
P/N 09-27000 ..... Qt. $9.65
P/N 09-27100 ..... Gal. $33.85
P/N 09-27100-55 ..... 55 Gal. $1,273.00

PHILLIPS 66 X/C MIL-PRF-5606H HYDRAULIC FLUID

A mineral-based hydraulic oil with low temperature characteristics capable of operating over a wide range of temperatures. Oxidation inhibited, and contains a special antiwear additive. Dyed red for identification and leak detection purposes. Can be used in both aviation and non-aviation systems with synthetic rubber components, but should not be used in systems that incorporate natural rubber.Quart ..... P/N 09-00774 ..... $6.85
Case ..... P/N 09-00773 ..... $134.75

ANDEROL ROYCO 756 HYDRAULIC FLUID

MIL-PRF-5606H - ROYCO 756 is a red-dyed, mineral oil based hydraulic fluid developed for the severe duty demands of aerospace and industrial service. USES: ROYCO 756 is designed for use in aircraft, missiles, auto pilots, shock absorbers, cherry pickers, boom trucks, robotics, and auto wreckers requiring all - weather performance. ROYCO 756 can be used in unpressurized systems operating at temperature ranges from -54 to 90ºC (-65 to 195ºF) and in pressurized systems from -54 to 135ºC (-65 to 275ºF) at pressures up to 3000 p.s.i.

Size	Part No.	Price	Size	Part No.	Price
Quart	08-12080-1	$7.95	Case of Quarts	08-12080	$183.75
Gallon	08-12119-1	$33.75	Case of Gallons	08-12119	$197.95
5 Gallon	08-12121	$167.75			

DOT4 BRAKE FLUID

The racing grade has a minimum boiling point of 600°F which assures fade-free operation under the most severe use. • Exceeds current SAE J1703, J1S K2233 and U.S. and FMVSS116 DOT 3 & 4 specifications. • Recommended for all U.S., U.K., Japanese and European motor cycles. • Anti-vapor lock formula • Mixes with other DOT 3 and DOT 4 brake fluids ..... P/N 06-01497 ..... $7.85

SKYDROL LOW DENSITY HYDRAULIC FLUID LD-4

Skydrol LD-4 features low density, excellent thermal stability, valve erosion prevention, and deposit control.

Quart ..... P/N 08-12239 ..... $41.60
Gallon ..... P/N 08-12241 ..... $147.75
5 Gallon ..... P/N 08-12240 ..... $631.00

SKYDROL FIRE RESISTANT HYDRAULIC FLUID

500B-4 is the most worker friendly of the aviation phosphate esters; it is least irrating to skin and less prone to form mists.

Quart ..... P/N 08-12463 ..... $45.50

SKYDROL TYPE V HYDRAULIC FLUID

Skydrol 5 offers higher temperature capability than Type IV fluids, the lowest density, and better paint compatibility.

Quart ..... P/N 08-12242 ..... $43.60

MATCO PARKING BRAKE VALVE

Ideal for installation in a wide variety of homebuilt aircraft applications. The arm actuates the valve in approximately a 45 degree arc allowing for ease of installation. In-line installation can be used in conjunction with either a single or dual parking brake system setup. Body is made from 6061 anodized aluminum for lasting durability. P/N 06-17200 ..... $124.90

MATCO SINGLE SIDED PARKING BRAKE VALVE

Light weight, and easy in-line installation The overall dimensions of this product are a slim 2.3" X 0.75" X 0.75".

P/N 06-01267 ..... $102.75

SCOTT TYPE PARKING 4500-A1 BRAKE VALVES

A fine quality valve for applications in parking brake systems, helicopter rotor braking systems, pneumatic pressure controls and other hydraulic uses. Molded rubber valve seat designed for use with MIL-H-5606BB petroleum base hydraulic fluid. Maximum working pressure. Mounting holes extend through entire body. 1/8" NPT ports. Valve assembly for Piper and Stinson. Visit our website for a complete application guide.

Model No.	Port A / Port B	Part No.	Price
4500-A1	1/8 ANPT	06-00393	$336.00
4500S-A1	7/16-20 NF	06-00949	$321.00

MANUAL PARKING BRAKE VALVE

Miniature inline hydraulic manually operated ball valve. Fits in the bottom of the Master cylinder. Just pull the brake handle and hold the pressure and turn the lever on the ball valve. Let go of the handle and the ball valve holds the pressure until you release the lever back. 1/8"NPT Female x 1/8/"NPT Male Chrome Plated Brass Valve 1.7" overall length.

P/N 06-00971 ..... $18.75

CLEVELAND PARKING BRAKE VALVE

Aluminum valve as used in production aircraft with Model A-110 master cylinders for dual brake installations. Complete w/AN flare fittings. P/N 60-5 ..... $470.00

GROVE INLINE PARKING BRAKE VALVE

06-01261

Innovative design allows control lever to be attached in any of four positions as well as on either side of valve body. Internal poppet valves insure easy, secure operation. Body is drilled for mounting with two 3/16" bolts. Valve body dimensions: 1.5"x2.0"x0.75". Control arm has 45° of travel. Max operating pressure: 1,200 psi. For use with MIL-H-5606 Hydraulic Fliud. Weight: 0.32 lbs. Side or top inlet ports: 1/8"NPT * Outlet ports: 1/8" Female NPT or -4 Flare.

Part No.	Inlet	Outlet	Price
06-01260	Top	1/8" NPT	$178.50
06-01261	Side	1/8" NPT	$179.00
06-01262	Top	-4 Flare	$179.85
06-01263	Side	-4 Flare	$179.75

BERINGER PARKING BRAKE VALVE

Lightweight parking brake valve, aluminum anodized, fully CNC machined, for dual brake installations. Available for mineral-based fluid type MIL-H-5606 or DOT4 brake fluid.
Complete with fittings, Wt. 6oz
Max. operating pressure: 1450 PSI
Features: • Lightweight parking brake valve, Aluminum anodized. • Available for mineral-based fluid like MIL-5606 or synthetic DOT4 fluid. • Machined from billet on CNC. • Max. input pressure: 1450 PSI

Description	Part No.	Price
Beringer parking brake valve for DOT4 brake fluid, dash-3 fittings (3/8X24), red anodizing color.	06-01107	$298.00
Beringer parking brake valve for mineral-based fluid MIL-H-5606, dash-4 fittings (7/16x20), blue anodizing color.	06-01108	$298.00

GOOSENECK HOSE COUPLING

Used on high pressure strut pump hose. High pressure connection with a swivel nut and female 1/8" NPT port on other end. P/N 06-11700 ..... $14.85
Replacement Seal ..... P/N SK2043-5 ..... $0.32

STRUT VALVE

AN6287-1 strut valve for operating pressures up to 3000 PSI. Consists of a 3-piece stainless steel body, high-pressure valve core and MS20813-1B cap. P/N 06-00395 ..... $21.60

HIGH PRESSURE VALVE CORES

#2300HV (Long Type, Length 1-3/16") Operating pressure range 70-2000 PSI from -10° to 165°F. Conforms to AN809-1. P/N 06-00397 ..... $5.35

#9914B (Short Type, Length 7/8") Same operating range as #2300HV, but doesn't conform to AN809-1. P/N 06-00396 ..... $2.95

AIRCRAFT TIRE VALVE CORE

#6035 (38-830)(Short Type) Operating pressure range 0-400 PSI from -65° to 350°F.

P/N 6035 ..... $0.65

2525 VALVE CAP (MS20813-1B)

A heat-resisting cap designed to withstand high pressure conditions. Has special rubber sealing washer. P/N 2525 ..... $3.35 Ea.

AIRCRAFT VALVE STEM ACCESS PANEL

The Aircraft Valve Stem Access Panel was designed for easier access to the valve stem for tire inflation. Frames and Panels are 3" sq 3003 Alum @ .032" thick. Etched and Printed with DuPont Etch Primer A-4155. The 1/4 turn camlock set is cad plated. Includes: 3 frames, 3 panels, 1 re-usable stencil, and all necessary Camlocks and Rivets (Receiver - 212-12, Camlock - 2600-2, Lock Washers - 2600 LW, Rivits - MS20426AD3-4).

Aircraft Valve Stem Acess Panel ..... P/N 05-06662 ..... $275.00
Replacement Panel ..... P/N 05-06663 ..... $48.00

HOMEBUILDERS MAIN GEAR AXLES

ACS AXLES - BOLT-ON TYPE

500X5 AXLE - Machined from 2024T3 aluminum. Gold anodized per specification MIL-A-8625C, Type II for improved corrosion resistance. Length 5-3/4". Mounting bolt pattern is four equally spaced 1/4" dia. holes on 1-15/16" dia. bolt circle. Thread size: 1-1/4 x 16.
P/N 11701 ..... $42.50 Ea.

500X5 AXLE - For 199-152 heavy duty discs (as used in Cozy). Same as #11701 axles above except 6" long and without undercut between bearings. P/N 11701-2 ..... $44.75

SPACERS FOR 500 X 5 AXLE - 2 required per axle when used with Cleveland wheels. Not required on 600x6 size.
P/N 11716 ..... $4.95 Ea.

EXTRA WIDE SPACER FOR 500X5 AXLE - 7/16" wide as used on 199-152 heavy duty discs. 1 required per axle with P/N 11716 (Use Axle # 11701-2) P/N 11716-2 ..... $6.25 Ea.

600X6 AXLE - Similar to 500 x 5 size but 1-1/2" dia. x 6-1/4" long. Two 5/16" dia. and two 3/8" dia. mounting holes on 2-1/4" dia. bolt circle. Thread size: 1-1/2 x 16. P/N 11702 ..... $65.25 Ea.

ACS AXLES - WELD-ON TYPE

500 X 5 AXLE - For use on welded type gear. Fabricated from 1-1/4" O.D. x .120 wall 4130N steel tubing. Precision ground for proper bearing fit. One end threaded 1-1/4 x 12 for round axle nut. 12" long.
P/N 11703-1 ..... $31.75 Ea.

600 X 6 AXLE - For use on welded type gear. Fabricated from 1-1/2" O.D. x .120 wall 4130N steel tubing. Precision ground for proper bearing fit. One end threaded 1-1/2 x 16 for round axle nut. 12" long.
P/N 11704-1 ..... $34.75 Ea.

P/N 06-11800 / 06-11900

AXLE NUTS

Castle type nuts manufactured to MIL Specification MS21025 using 4140 steel. Mild steel nuts are not acceptable for use on certificated aircraft. 1-1/4" dia. nuts for 500 x 5 axles, 1-1/2" dia. nuts for 600 x 6 axles.

Nut Type		Thread	Axle Type	Part No.	Price
Matco	Castle	5/8-18	Matco	06-11815	$2.65
---	Castle	1-1/4-16	Cessna	06-11800	$11.75
---	Castle	1-1/2-16	Cessna	06-11900	$12.90
ACS	Round	1-1/4-12	Piper	11725	$8.90
ACS	Round	1-1/2-16	Piper	11726	$8.95
Grove	Round	1-1/4-12	Piper	06-00937	$19.50

HOMEBUILDERS AXLE NUTS

These 1-1/4" - 16 Castle axle nuts are similar in size & design to pn 06-11800 and are for homebuilts only. Used on Cozy and many other designs
PN 01-00814 ..... $9.50

GROVE AXLES

For 500X5 Wheels w/Wheel Pant Stub - • Diameter: 1.25" • Material: Solid 2024-T3 aluminum w/anodized finish • Hole Pattern: 1-15/16" bolt circle; 1/4"dia. holes. Requires (2) P/N5710 spacers per axle.
P/N 06-00601 ..... $59.75

For 600X6 Wheels w/Wheel Pant Stub - • Diameter: 1.5" • Material: Solid 2024-T3 aluminum w/anodized finish • Hole Pattern: 2.25" bolt circle; (2) 2-15/16" dia. bolt holes & (2) 2-3/8" dia. bolt holes.
P/N 06-00602 ..... $82.75

GROVE AXLE SPACER 5712

I.D.: 1.25", O.D.: 1.438", Thickness: 0.360", Used with 5015 axle, 1 (one) required per axle.
P/N 06-01504 ..... $5.95

GROVE AXLE SPACER 5710

I.D: 1-1/4" • O.D. 1-3/4", Thickness: 1/4", Used with 500x5 axle, 2 required per axle. P/N 06-00852 ..... $5.90

GROVE ALUMINUM WHEEL PANT AXLE NUTS

Model	Axle	Thread	PN	Price
5512	500x5	1-1/4x16	06-01677	$27.95
5513	600x6	1-1/2x16	06-01678	$33.95
--	400x4	3/4x16	06-01742	$23.99

STEEL CESSNA AXLES

For use on flat spring landing gear, Cessna models 180, 182, 185 and 206. It is highly recommended to replace aluminum axles with these much stronger steel axles when operating on rough conditions, with larger wheels or on skis. FAA-PMA approved. P/N 05-00481 ..... $365.00

AXLE WITH WOODRUFF KEY

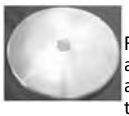
Axle 5/8" x 8" with Woodruff Key (Cotter Pin hole).
P/N 06-01004 ..... $26.55

TAPER SHIMS

For wheel alignment. Ideal setting is zero toe-in and zero camber at normal operating weight. Shims may be rotated to any one of four positions to obtain desired result.

0441157-1

Axle Size	Shim Part No.	Approx. correction value Camber	Toe-In	Price Each
500x5	0441157-1	1/2°	0.06"	$125.80
	0441157-3	1°	0.12"	$105.95
	0441157-2	2°	0.006"	$658.00
600x6	0441139-5	1/2°	0.12"	$79.65
	0441139-6	1°	0.20-0.25"	$58.75
	0541111-2	2-1/2°	0.10-0.25"	$166.75



DIAL-A-DEGREE SHIM

For builders using a 600x6/500x5/GAC/Azusa bolt-on axle, The solution to most minor alignment issues (0 to 3° adjustment). This simple solution uses a pair of specially tapered discs that are mated and rotated in any combination needed to orient each axle to its correct alignment. A pair of discs is used on each side. FAA-PMA approved (BDS-101) Sold as a set of 4 discs. P/N 06-00415 ..... $118.50

COZY LANDING GEAR STUD

A custom fabricated 4140 steel heat treated shaft with rolled 1/2-20 threads on both ends Used a gear attachment on Cozy Mark IV. 10.75"L. 2 required.
P/N 01-00254 ..... $38.50

LG

SHOCK CORDS - RINGS

MIL FRESH SHOCK RINGS

An endless elastic ring composed of multiple strands of natural rubber, wound into a circular skein. Braided cover is high grade yarn. Manufactured to meet specification MIL-C-5651B, Type II. Shock cord is used in landing gear to reduce shock transmitted to fuselage while landing and taxiing and on other shock mounting applications. Color coded to insure fresh stock.

Ring No.	Ring Size* (In.)	Test (Lb.)	Aircraft	# Req.	Part No.	Price Ea.
9044	9/16x4-1/2	400	Hatz Bi-Plane	4	9044	$23.75
9090	9/16x9	425	Taylorcraft B	4	9090	$25.90
9010HD	9/16x10	475	Taylorcraft BC	4	06-00829	$21.75
9010HDX	9/16" X 10"		Taylorcraft F-19/F-21	4	06-01132	$32.50
1080	5/8x8	750	Stolp Starduster,Rans S4/5	4	1080	$27.50
1080HD	5/8x8	900	PA-16, PA-18	4	06-00823	$26.50
			PA-20, PA-22, PA-25	4		
1174	11/16x7-1/2	730	Piper J-2, Early J-3, J-5	4	06-00756	$33.50
1192	11/16x9-1/4	750	Taylorcraft D	4	1192	$48.99
11104	11/16x10-1/2	750	Taylorcraft L-2	4	11104	$52.75
1280	3/4x8	750	Stolp Starduster Too	4	1280	$31.75
1280-HD	3/4x8	950	Piper J-3 (S/N8277 up),	4	06-00826	$23.70
			PA-11, PA-12, PA-14	4		
			PA-18 (thru S/N18-3013)Rans	4		
			S10 Acrosport, Pitts S-2			
8097	1/2 x 9-7/8	400	PA-24, PA-30	2	8097	$18.85
1286	3/4x8-3/4	750	Aeronca (S/N330 up)	4	1286	$35.65
1286HD	3/4x8-3/4	950	Skybolt	6	06-00827	$48.50
1380	13/16x8	1160	PA-20 (before 1952) Pitts (S-1, S-1C, S-1S) Husky,Acrosport 2, Rans S9	2 4	1380	$27.50
1380HD	13/16 x 8	1460	Rans 57	1	06-00828	$54.75

*1st dimension is cross section; 2nd dimension is inside dia. of ring.
HD - Heavy Duty, higher test rings. ***6 Rings for J-5. HDX - Extra Heavy Duty.
See our website for application chart on Shock Rings.

CW (Cold Weather) shock rings available on Special Order basis. Prices are approx. twice that of standard shock rings. Add "-CW" to standard part number when ordering.

SHOCK CORD

MIL-C-5651D TYPE I SHOCK CORD: This cord has a double cover of glazed cotton over natural cotton. It has 3 markers: 2 for the year and 1 for the quarter.
The certifiable cord sizes of Type I are: 1/4", 3/8", 1/2", 5/8"

TYPE 1

Dia. (In.)	Part No.	Price/Ft. Less Than 100 Ft.	100 Ft.	Dia. (In.)	Part No.	Price/Ft. Less Than 100 Ft.	100 Ft
1/8	06-12100	$0.30	$27.00	1/2	06-12500	$2.80	$252.00
1/4	06-12200	$0.73	$65.70	5/8	06-12600	$4.95	$445.50
5/16	06-12300	$0.79	$71.10				
3/8	06-12400	$1.36	$122.40				

SHOCK CORD FASTENERS

These cone spring hooks and locking rings are used as terminal fasteners. Insert cord through small end of cone. Apply and crimp locking ring about 1/2" from end of cord, pull cord back until locking ring contacts inside of fastener. Cut ends of cord may be sealed by dipping in rubber cement. Set includes cord and locking ring.

Shock Cord Size	Fastener P/N	Price/Set
1/4"	06-12800	$0.89
3/8"	06-12900	$1.32
1/2"	06-13000	$2.35

SHOCK CORD INSTALLATION TOOL

This handy new tool installs standard shock rings on most aircraft without the great effort required in the past. This tool is designed for use with the shock cords shown above. Our price is the best anywhere. P/N 06-16600 .....$269.95

BOGERT COMANCHE BUNGEE TOOL

• Lower damage risk with the right tool • Complete control of bungee shock cords coming off • Complete control of bungee shock cords going on. • E-Z instructions with detailed drawings • Safe landings depend on new cords every few years.
P/N 06-00419..... $107.75

BOGERT COMANCHE GEAR RETRACTION TOOLS

Straight - Fits: PA-24, SN 24-4783, 24-4784 through 24-4803 P/N 12-02095 .....$68.90
Angled - Fits: All PA-30's, PA24, Serial number 24-4804 & up P/N 12-02094 ..... $103.75

SHOCK ABSORBER COIL RINGS

High pressure springs fabricated from alloy steel for top performance and long spring life. The Claude Gray shock absorber design has been service-proven on the EAA Biplane, Miniplane, Pitts and others. Over 1,000 pair in use. Length 6", 2" O.D., 1" I.D.. Wt. 4-1/2 lbs. per pair. Spring deflection 0.7" per 1,000 lb. force. Set of two springs.....P/N 06-13200 .....$95.75
Discount 10% on 6, 15% on 12

GRANVILLE'S STRUT SEAL

Landing gear strut packing seals shrink due to fluctuating weather conditions and age. This specially engineered hydraulic chemical additive leaves a protective coating on the strut shaft and allows the seal to expand to its normal size. It will stop strut leaks and is an excellent lubricant and corrosion preventative. Application is fast and easy - any owner or pilot can do the job in minutes. FAA approved.

Single-Strut Kit .....P/N 06-13300 .....$29.75
3-Strut Kit (Single Engine).....P/N 06-13400 .....$44.85
3-Strut Kit (Medium Twins).....P/N 06-13500 .....$54.85
Large Twin kit (16 oz0 .....P/N 06-00110 .....$97.50
Granville Strut Additive (Pt.).....P/N 06-00111 .....$73.50

STRUT REBUILD KITS

FOR CESSNA NOSE STRUTS

For Cessna models 150, 152, 172, 175, 182, R182, 205, 206, 210, T210, P210, 310-310Q, 320, 336, & 337. Includes 5 O-Rings, 2 Back-Up Rings, Scraper Ring,. ..... P/N 06-03960 .....$16.75

FOR PIPER NOSE STRUTS

For Piper PA28-140, 150, 151, 160, 161, 180, 181, & 235, PA32-260 & 300. Includes O-Rings, Back-Up Ring, Seal, Wiper & Aluminum Gasket. ..... P/N 06-03965 .....$16.85

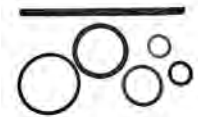
For Piper PA28R & PA32R series retractable nose struts. Includes Seals, O-Rings & Gasket..... P/N 06-03970 .....$19.75

FOR PIPER MAIN STRUTS

For Piper PA28-140, 150, 151, 160, 161, 180, 181 & 235, PA32-260 & 300. Includes O-Rings, Scraper, Seal & Aluminum Gasket.
P/N 06-03975 .....$22.85
For Piper PA28R & PA32R series retractable main struts, Includes Seals, O-Rings & Gasket..... P/N 06-03980 .....$18.95

STRUT SEAL KITS FOR PIPER

Kits contain Mil-Spec & Industry Standard Seals and Components required for various Piper Strut application



Seal kit for nose or main strut for Piper Apache/ Aztec..... 06-00126.....$17.50
Strut seal kit for Piper PA-24 main gear 06-00127.....$13.85
Strut seal kit for Piper PA24 nose gear 06-00128.....$15.95
Strut seal kit for Piper PA30 main gear ..... P/N 06-00129 .....$15.95
Strut seal kit for Piper PA30 nose gear..... P/N 06-00130 .....$15.95
Main Strut seal kit for Piper PA28 140, 150, 151, 160, 161, 180, 181, 235, & PA32-260, 300 ..... P/N 06-03975 .....$22.85
Nose strut seal kit for PA28-140, 150, 151, 160, 161,180, 181, 235, & PA32-260, 300 ..... P/N 06-03965 .....$16.85
Main strut seal kit for PA28R & PA32R-300, 301, 301T, & PA32RT-300, 300T..... P/N 06-03980 .....$18.95
Nose strut seal kit for PA28R & PA32R-300, 301, 301T, & PA32RT-300..... P/N 06-03970 .....$19.75
Nose strut seal kit for PA PA22 Series..... P/N 06-01370 .....$15.95

GROVE HOMEBUILT AIRCRAFT LANDING GEAR

These custom landing gear are fabricated from aircraft grade 2024T3 aluminum. After cutting and milling, they are annealed to "O" condition for bending, and then heat-treated to "T6" condition for exceptional strength and durability. Top quality landing gear at exceptional pricing.

NOTE:Request landing gear layout sheet when placing order or quotation Request for custom landing gear to verify correct gear for application.

Aircraft Type	Part No.	Price
KITFOX - Mod 3&4 TD	06-04025	$1,744.00
PITTS - S1	06-03915	$1,331.00
S1-11B SuperStinker	06-04035	$1,595.00
Baby Lakes	06-04070	$1,145.00
VP1 - 1100B Free Standing No Cables	06-04040	$1,125.00
Zenair CH701	06-00058	$1,129.00

NOTE:
ALL GROVE AIRCRAFT LANDING GEAR IS NON-CANCELLABLE / NON-RETURNABLE.

LG

RUDDER PEDALS

ACS RUDDER PEDALS

Professionally made black powder coated aluminum pedals as used in production aircraft. Approved by Rutan Aircraft Factory for use on the Defiant. 5"W x 6"L. Wt. 3/4 lb. ea.

P/N 06-00392 ..... $68.75 Pr.

Discount Less 10% on 6 Pr., 15% on 12 Pr., 20% on 20 Pr.

ACS RUDDER PEDAL/ TOE BRAKE ASS'Y

For use with any standard master brake cylinders. 2-piece design. Completely finished, assembled, ready for installation. Wt. 2 lbs. each. P/N 11350..... Set of 2 $93.65

Discount Less 10% on 6 Pr.
15% on 12 Pr., 20% on 20 Pr.

AZUSA STEEL PEDAL SET

This rugged pedal set (left & right) features built-in stops, (4) 1/4" pre-drilled holes to allow adjustable rod connections and a 5/16"-18 x 1-3/4" long mounting bolt. Wt 7oz. ea. length 6.5' P/N 06-00107.....$11.50 /set

RUDDER PEDAL RETURN SPRINGS

4-1/2" Long.

P/N 01-27300 ..... $4.75 ea.

STARFLIGHT RUDDER PEDAL

These rudder pedals have been designed and optimized for the Lancair Legacy -- though they are easily integrated into other aircraft. They are overhead mounted, pilot adjustable and provide very precise, smooth rudder and brake control. Overhead mounting. Easily adjust for leg length by turning a small crank just behind the instrument panel. Brake master cylinders not included.* Weight: 8 lbs * Width: 14.4 in * Height: 10 in * Depth: 18 in * Rudder cables not included.

Lancair ..... P/N 05-04406.....$3,087.00

DELUXE HOMEBUILDERS \ RUDDER PEDAL KITS

Designed for single or two place tandem seating experimental aircraft. The pedals are aluminum castings and the hinge bracket and pedal pivot pin are constructed from 4130 steel tubing. The pedals have an attachment point (1/4" hole) at the top to link the toe brake from the rear cockpit to the front cockpit only 2 master cylinders required). To mount the pedals the builder will need 2 steel bushings 3/4" long to weld through the fuselage and a tube to put through the bushings and the bottom tube of the hinge bracket. Will work well in almost any homebuilt aircraft.

Single Place Kit.....P/N 06-17015..... $274.95
Two Place Tandem Kit.....P/N 06-17025..... $351.00

REAR RUDDER PEDAL KIT

These were designed especially for RV4's and Rockets but can be used on any aircraft with rudder cables that are installed down the side skins. The pedals are 6" tall and 3-1/2" wide, 1/2" diameter 6061 anodized aluminum bar. The kit includes; pedals, floor mounting brackets, cable clamps and chains. Pedals will fold out of hte way when not in use.

P/N 05-04372.....$141.95

RUDDER ARMS

SCOTT TYPE - Cast aluminum brackets with reinforced chain mounting holes. Originally used on Piper J-3, J-4, J-5, PA-11, PA-18, L-21B. 3/4"dia. post between mounting holes.

P/N 1140..... $154.85

HOMEBUILDERS MODEL - Same style as Scott model. 3/4" dia. post and 3/4" arm (width)

P/N 06-15900 .....$44.50

RUDDER ARM 1" SHANK - Originally designed for J-3 through PA-18 series, but adapts nicely to most homebuilts. Code 1

PN 06-01045 .....$43.50

SCOTT TYPE TAILWHEEL ARM ASSEMBLY

FAA/PMA approved; for the Scott 3250 8-inch tailwheel assembly

P/N 3214T $322.00

CESSNA RUDDER PEDAL EXTENSIONS

P/N 06-00838 P/N 06-00839 P/N 06-00641

The Saircorp/Flight Boss Ltd S-RPE Series Rudder Pedal Extensions fit most high wing Cessna aircraft from 1953 to 2008. Refer to Application Chart or AML for proper selection by visiting our website.

These are constructed from high quality cast aluminum, have a durable Powder Coat finish and use Stainless Steel fasteners. They are strong, durable and built to last.

Installation and removal is quick and easy, the extensions lock in place over your existing rudder pedals giving you that extra needed reach. Your existing rudder pedals do not need to be removed or altered for installation or removal of the extensions.

No more struggling or submarining to get that extra needed rudder deflection. Even "robust" and taller pilots can benefit from the S-RPE Series Rudder Pedal Extensions, they allow you to set back and get the yoke out of your chest. They can be installed and used right seat, left seat or both.

EXT S-RPE-C - fits most 1960's to 1980's.....P/N 06-00838..... $535.00
EXT S-RPE-CN - fits most 1980's to 2000 and up.....P/N 06-00839..... $556.00
EXT S-RPE-CO - fits most 1950's to 1960's .....P/N 06-00841..... $535.00

UNIVERSAL AIRCRAFT HEEL PLATES

These Universal Heel Plates can be installed in any aircraft without fasteners or hardware. Velcro secures them to the floor or carpeting. The Heel Plates are available in 22 gauge stainless steel and are furnished with a clear finish. The stainless plates are available in brush finish only. Plates are 8" wide x 12" long with Velcro strips supplied, but not mounted, Sold in sets of two plates. Not FAA Approved.

Stainless steel brush finish heel plates .....05-00839.....$69.95

SPECIAL ORDER COLORS AVAILABLE

RUDDER PEDALS FOR EXPERIMENTAL AIRCRAFT

Designed for the Loehle 5151 Mustang/P-40 these rudder pedals can easily be adapted to many light sport planes and ultralights. Made from spaceage polycarbonate, a material that is used when strength, light weight and durability are a necessity. Sample rudder pedals were shot with a .22 long rifle at a range of 10 yds, bullets failed to penetrate the 1/8" inch thick polycarbonate. Builder will have to fabricate simple back plates from either 1/8" thick birch plywood or 1/8" thick aluminum. An easy to understand detailed drawing is furnished with each set of rudder pedals. Specifications: Wt: 5.2 oz., Width: 4-1/8", Height: 9".

P/N 06-00001 .....$68.50

HOMEBUILDERS TAIL SKID

The skid is 1" wide and 6" long. It is made out of 3/16" thick 347 Stainless Steel. It will accept up to a 1-3/4" O.D. 3/8" thread tie down ring. This skid will eliminate bending of the tie down ring and damage to the tail. This a must have for training aircraft. The skid is currently mounted on several experimental and certified aircraft. P/N 05-04383 .....$68.75

CESSNA 120 / 140-140A TAILWHEEL BRACKET

FAA/PMA Approved for Cessna 120, 140, & 140A. Cessna ID 0412139-1.

P/N 05-06994 .....$831.00

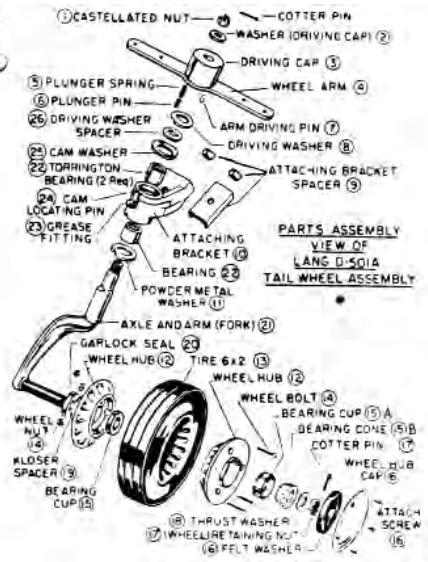
SCOTT TYPE BRAKE BRACKETS

These economical brake brackets fit the popular Scott brake master cylinders and are cast from 356-6 aluminum. These brackets are not PMA'd and are recommended for experimental aircraft only.

Scott Type 1230 Brake Bracket LH
P/N 05-11551 .....$264.95
Scott Type 1220 Brake Bracket RH
P/N 1220 .....$264.95

LG

TAILWHEELS



LANG TAILWHEEL PARTS

Ref No.	Lang No.	Part No.	Qty	Price Each	Ref No.	Lang No.	Part No.	Qty	Price Each
1&2	A-501, A521	06-13601	1	$4.95	16	A-522, A-523 & A-524	--	--	--
3,5, 6,7	A503, A507 A-505, A506	06-01570	1 1	$18.90			06-13600	1	$19.75
4	A-504	06-13604	1	$15.90	17	A-521	06-13617	1	$1.75
					18	A-531	06-13618	1	$0.05
8	A-509	06-13608	1	$5.90	19	A-546	06-13619	1	$3.20
9	A-512, A560-1 A560-2	06-13609	1	$11.50	20	A-547	06-13620	1	$18.80
10	C-501	06-13610	1	$57.50	21	C-503	06-13621	1	$158.95
11	A-516	06-13611	1	$5.95	22	A-554	06-13622	2	$13.60
12	A-544, A545	06-13800	2	$127.95	23	A-525	06-13623	1	$2.35
13	A-590	06-15800	1	$87.65	24	A-508	06-13624	1	$2.85
14	A-548, A549	06-13614	3	$12.50	25	A-511	06-13625	1	$5.95
15A	A-518	13287	2	$46.50	26	A-510	06-13626	1	$1.45
15B	A-519	13286	2	$34.50					

HUB ASS'Y (2 #12 Hub Halves, 3 #14Bolts & Nuts).....P/N 06-13800.....$127.95
HUB ASS'Y W/ BEARING CUPS.....P/N 06-13900.....$152.95
WHEEL ASS'Y (Hub Ass'y & 2 Bearing Cups & Cones).....P/N 06-14000.....$263.50
WHEEL & TIRE ASS'Y (Wheel Ass'y & 6 x 2 Tire).....P/N 06-14100.....$398.00

THE LANG TAILWHEEL – FAA APPROVED STEERABLE – FULL SWIVEL

LG

THE ONLY TAILWHEEL TO MEET THE EXACTING REQUIREMENTS OF THE CHRISTEN EAGLES - The Lang Model D-501-A Tailwheel is full swivel, fully automatic and steerable. It is impossible to throw the Lang tailwheel into full swivel unintentionally regardless of rough field conditions or cross winds. This tailwheel will not lock in any position except steerable, but releases easily when plane is pushed sideways or backwards by hand or when maneuvering plane on ground using brakes. The Lang tailwheel fits both 1-1/4" and 1-1/2" leaf springs. Drop forged, heat-treated 4130 chromoly steel fork of single arm type. The cast aluminum wheel is grease packed for 100 hours service. The 6 x 2.00 solid rubber tire has interior wire reinforcement for added strength. Manufactured by ACS Products Co. under FAA-PMA. All replacement parts available. The Lang tailwheel is FAA-approved for installation on many light aircraft including Aeronca 7AC, Piper J-3 and PA-12, Cessna 140, Luscombe and Taylorcraft. Comparable to Scott Model 2000. Wt. 6 Lbs. OEM & DISTRIBUTOR PRICING AVAILABLE P/N 06-00398.....$890.00

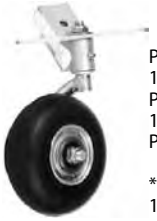
HOMEBUILDERS SPECIAL TAILWHEELS

FULL SWIVEL AND STEERABLE 4 INCH DIAMETER FULL SWIVEL/STEERABLE

P/N 06-00399 Standard 45° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00401 Optional 20° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00402 10° Angle, for 5/8" round spring.
Any Model (Wt. 3 Lbs.).....$289.00
*Note: Requires spacer P/N 06-13609 for use w/ 1.25" spring

HEAVY DUTY DOUBLE FORK 6 INCH DIA. FULL SWIVEL / STEERABLE

Locks in steerable mode when aircraft is moved forward. Releases to full swivel when pushed sideways or backwards, or when maneuvering on the ground using brakes. Tire is solid soft rubber, with sealed ball bearings.
P/N 06-06131 - Std. - 45° Angle for 1-1/4 or 1-1/2 flat spring.
P/N 06-06133 - Optional-20° Angle for 1-1/4 or 1-1/2 flat spring.
P/N 06-06135 - 10° Angle for 5/8 round spring.
Any Model (wt. 6lbs.).....$319.00
**Note: Requires spacer P/N 06-13609 for use with 1-1/4" spring.



6 INCH DIAMETER FULL SWIVEL/STEERABLE

P/N 06-00403 Standard 45° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00404 Optional 20° spring angle, for 1-1/4" or 1-1/2" flat spring.
P/N 06-00405 10° Angle, for 5/8" round spring.
Any Model (Wt. 5 Lbs.).....$289.00
*Note: Requires spacer P/N 06-13609 for use w/ 1.25" spring.

REPLACEMENT WHEELS FOR HOMEBUILDER'S SPECIAL TAILWHEELS

Replacement wheels with tires & bearings for the Homebuilder's tailwheels shown above.
4X1.5X5/8 BB Natural.....P/N 06-03500.....$24.80
4X1.5X3/8 BB Natural.....P/N 06-00067.....$24.80
6X2.125X5/8 Balloon*.....P/N 06-03600.....$37.85
*This is a solid Tire

LONGLIFE SEALED BALL BEARINGS

These high quality bearings are superior to standard bearings furnished with homebuilder tailwheels.....P/N 06-00060.....$9.75

ALASKAN BUSHWHEEL 3400 TAILWHEEL

Item	ABI PN	Description	Part No.	Price
-----	ABI-3400-00	8" Tailwheel Assembly	06-01147	$1,550.00
-----	ABI-3450-00	10" Tailwheel Assembly	06-01148	$1,550.00
-----	ABI-3450-23 (S)	2-Bolt, 10" Tailwheel Assy Staight Arm	06-01149	$1,550.00
-----	ABI-3450-23 (T)	2-Bolt, 10" Tailwheel Assy Bent Arm	06-01741	$1,550.00
-----	ABI-3400B	Bushwheel Tailwheel Assembly	06-01150	$2,395.00
1	ABI-3412M	Tailwheel Head	06-01151	$405.00
1A	ABI-3450-23-M	2-Bolt Tailwheel Head	06-01152	$378.00
2	ABI-3423-01**	10" Fork	06-01153	$267.95
2A	ABI-3413-01**	8" Fork	06-01154	$267.95
2B	ABI-F2******	Wide Fork	06-01155	$545.00
3	ABI-3412-S.875***	7/8" Head Spacer	06-01156	$79.95
4	ABI-3412-S.937***	15/16" Head Spacer	06-01157	$79.95
5	ABI-3412-S1.00***	1" Head Spacer	06-01158	$79.95
6	ABI-3412-02	Head Bolt	06-01159	$69.75
6A	ABI-3412-05	Head Bolt	06-01160	$69.75
8	8231	Bearing Race	06-01162	$19.99
9	8118	Bearing	06-01163	$36.70
10	ABI-3407-00	Spacer	06-01164	$4.60
11	ABI-3219-00	PAW	06-00732	$33.90
12	ABI-3411-02	Dust Cap, Upper	06-01166	$22.85
12A	ABI-3411-07*	Dust Cap, Upper	06-01167	$22.85
13	ABI-3408-00	Thrust Washer	06-01168	$17.75
13A	ABI-3479-01*	Fiber Thrust Washer	06-01169	$18.55
14	ABI-3408-01	.036 Fiber Thrust Washer	06-01170	$17.50
15	ABI-3410-03	Steering Arm Bent (Bent)****	06-01171	$234.75

SEE WWW.AIRCRAFTSPRUCE.COM FOR DIAGRAM AND ITEM #.

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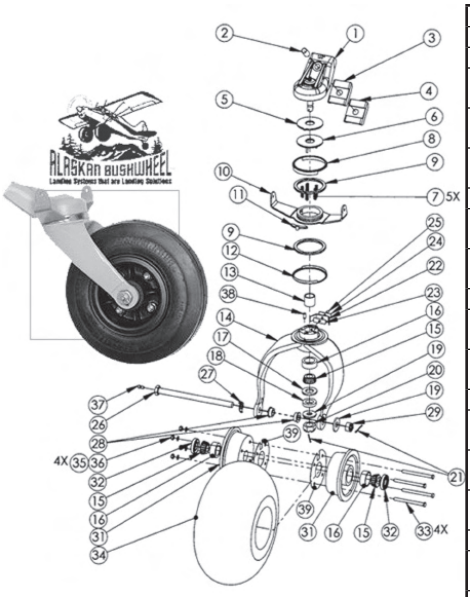
Prices Subject to Change Without Notice

ALASKAN BUSHWHEEL INC. 3200 TAILWHEEL ASSEMBLY

The Alaskan Bushwheel Tailwheel Assembly is an FAA-PMA (PMA # PQ1557NM, Supplement 9) eplacement part for the Scott 3200 assembly and parts contained therein, includes Heavy Duty Steering Arm. One Year Warranty.

ABI-3200 Standard Tailwheel Assembly(3214 Standard Arm)..... P/N 06-00836..... $1,025.00
ABI-3200-3 direct replacement for the Scott 3200-3. ..... P/N 06-01313..... $1,452.00
ABI-3224A Standard Tailwheel Assembly(3214T Heavy Duty Arm) ..... P/N 06-00722..... $1,025.00
ABI-3200B Tailwheel Tundra Assembly..... P/N 06-00723..... $1,827.00
ABI-800613-00 Pawnee 2-bolt Tailwheel Head..... P/N 06-00820..... $317.00
ABI-2600A 4" wheel halves with 2.80x2:50x4 tire & tube mounted and ready to go..... P/N 06-01190..... $393.00



#	Part No.	Description	Part No.	Price
1	ABI-3216-00	Brackett Assy.	06-00724	$227.85
2	ABI-3241-3S****	Spacer	06-00725	$10.50
3	ABI-3243-02****	Leaf Spring Adapter 1-3/4" to 1-1/4"	06-00810	$53.75
4	ABI-3243-01****	Leaf Spring Adapter 1-3/4" to 1-1/2"	06-00811	$54.75
5	ABI-3207-00	Fiber Thrust Washer	06-00726	$7.60
6	ABI-3235-00	Thrust Plate Assy.	06-00727	$47.55
7	ABI-3233-00	Compression Spring	06-00728	$3.70
8	ABI-3256-02	Hvy-Dty Dust Cap, Upper	06-00729	$34.50
9	ABI-3206-00	Thrust Washer	06-00730	$14.95
10	ABI-3214T	Hvy-Dty Standard steering arm assy	06-00731	$229.85
10A	ABI-3214-00	Standard Standard steering arm assy	06-00812	$268.95
11	ABI-3219-00	PAWL	06-00732	$33.90
12	ABI-3256-1	Hevt-Duty Dust Cap, Lower	06-01264	$32.95
12A	ABI-3235-1	Std. Duty Dust Cap, Lower	06-00733	$28.75
8A	ABI-3235-02	Std. Duty Dust Cap, upper	06-00813	$26.50
13	ABI-3205-00	Bushing	06-00734	$16.80
14	ABI-F1*	Tailwheel Fork (Heavy Duty)	06-00735	CALL
14A	ABI-3224**	Tailwheel fork Std.	06-00736	$284.95
15	A4050	Cone Bearing	13286	$34.50
16	A4138	Bearing Race	13287	$46.50

#	Part No.	Description	Part No.	Price
17	ABI-1863	Grease Retainer	06-00746	$9.75
18	ABI-2504-1	Spacer	06-00752	$15.50
19	AN960-816	Washer	AN960-816	$0.06
20	AN320-8	Shear Nut	AN320-8	$1.79
21	MS24665-283	Cotter Pin	MS24665-283	$0.02
22	ABI-3222-00	Compression Spring	06-00737	$12.60
23	ABI-3258-00	Spacer	06-00738	$2.20
24	ABI-3258-01	Spacer	06-00739	$2.20
25	ABI-3257-00	Pin	06-00740	$8.60
26	ABI-872*	Axle (Heavy Duty)	06-00741	CALL
27	ABI-3225-00	Tab Lock Washer	06-00742	$5.75
28	ABI-3227-00	Spacer	06-00743	$21.50
29	33475-008	Castle Nut	AN310-8	$2.77
30	ABI-S2*	Rim Spacer (Heavy Duty)	06-00744	$79.80
31	ABI-3244-00	Wheel Half (Heavy Duty)	06-00745	$126.75
32	ABI-7024	Bearng Race Seal	06-00746	$9.75
33	AN4-34A*	Wheel Bolt	AN4-34A	$0.98
33A	AN4-7A**	Wheel Bolt	AN4-7A	$0.21
34A	280x2.50 x4**	Tire	06-00748	$69.75
35	33478-202	Self Locking Nut	33478-202	$0.10
36	1/4" Washer	Flat Washer	AN960-416	$0.03
37	T7201	Zerk Fitting	06-00753	$1.90
38	ABI-232-046	Dowel Pin	06-00749	$13.50
39	ABI-2602**	Gasket	06-00750	$3.90

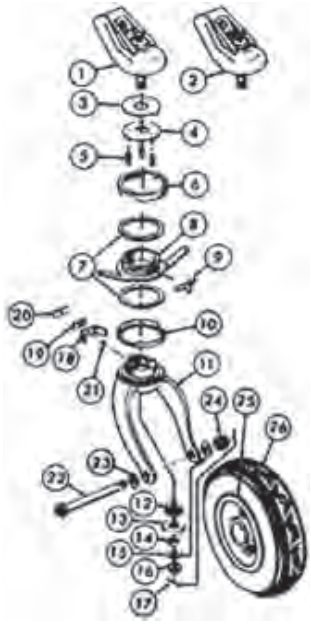
* Parts not included in ABI-3200/ABI-3224A Assembly ** Parts not included in ABI-3200B Assembly **** Parts not included in assemblies.

Parts in red are not sold individually.

LG

REPLACEMENT PARTS FOR SCOTT 3200 TAILWHEEL

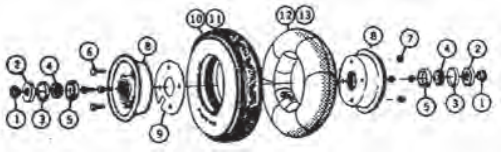
The Scott Model 3200 tailwheel, with 8" pneumatic tire, is designed to give years of trouble-free service. The swivel mechanism is sealed to keep out water, sand and mud. Grease fittings are provided for lubrication. Bracket fits 1-3/4" wide tailwheel leaf spring. Wt. 7-1/2 lbs. Attaching hardware not furnished.



Item No.	Part No.	Description	No. Req'd	Price Ea.
1	3216	Bracket Ass'y	1	--
2	06-01291	Bracket Ass'y 2-hole equiv. to 800613	1	$326.00
3	3207	Washer, Thrust	1	$5.50
4	3234	Thrust Plate Ass'y	1	$47.50
5	3233	Spring, Compression	5	$3.50
6	3235-2	Dust Cap	1	$27.50
7	3206	Washer, Thrust	2	$13.80
8	3214	Arm Assembly	1	$243.95
9	3219	Pawl	1	$31.50
10	3235-1	Dust Cap	1	$28.50
11	3224	Fork Ass'y	1	--
12	13286	Cone Bearing	1	$34.50
13	1863	Retainer, Grease	1	$8.50
14	2504-1	Spacer	1	$16.50
15	18107	Washer, AN960-816	2	$0.03
16	18450	Nut, Shear AN320-8	1	$1.79
17	18482	Pin, Cotter	2	$0.03
18	3222	Spring	1	$10.50
19	3258	Spacer	1	$2.45
20	3258-1	Spacer	1	$2.60
21	3257	Pin	1	$9.50
22	3236	Axle Ass'y	1	$43.55
23	3225	Washer, Lock	1	$6.50
24	18443	Nut, Castle, AN310-8	1	$2.77
25	3244	Wheel Ass'y	1	----
26	2600	Tire & Wheel Ass'y	1	----

SCOTT MODEL 2600 8-INCH PNEUMATIC TIRE

The Model 2600 8" pneumatic tire and wheel assembly is used on the 3200, 3250, 3400 and 3425 Series tailwheel assemblies. The Model 3245-1 10" pneumatic tire and wheel assembly is used on the 3425 & 3450 Series tail-wheel assemblies. Total Wt. 3 lbs. 13 oz.



Item No.	Part No.	Description	8" Assy P/N 2600	10" Assy P/N 3245-1	Price Each
1	3227	Spacer	2	2	$18.50
2	1863	Retainer, Grease	2	2	$8.50
3	1862	Spacer	2	2	$9.50
4	13286	Bearing Cone (A-4050)	2	2	$34.50
5	13287	Bearing Cup (A-4138)	2	2	$46.50
6	18438	Bolt	4	4	$0.21
7	33478-202	Nut, Self Locking	4	4	$0.10
9	2602	Gasket	1	1	$3.60
10	3228	8" Tire	1		$47.95
11	06-08100	10" Tire		1	$58.75
12	3223	8" Tube	1		$21.80
13	3247	10" Tube		1	$28.50

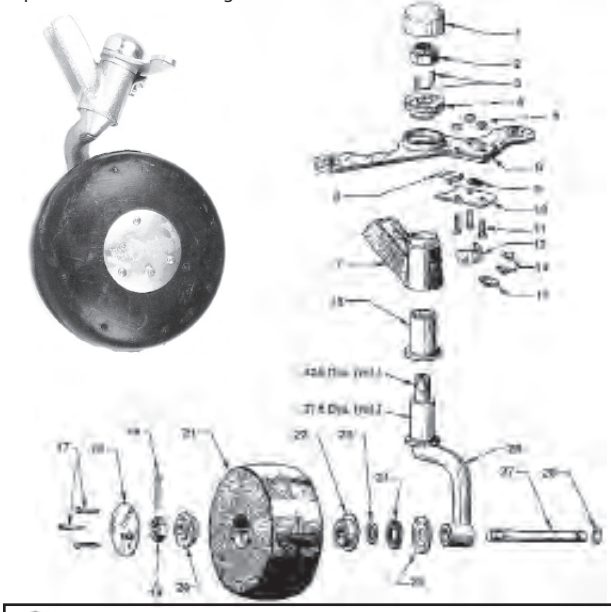
SCOTT LEAF SPRING SPACERS AND SPRING KITS

3241-3S - Spacer Only ..... P/N 06-00406..... $58.95
3243-2 - Spacer Only..... P/N 06-00407..... $61.75
3241-1S - Adapter Kit - Converts 1-3/4" 3216 (1 3/4") bracket to 1-1/2" width..... P/N 06-00408..... $70.75
3239 - Heavy Duty Tension Spring Kit..... P/N 06-00008..... $58.95
3243-01 - Converts 1-3/4" Bracket to 1-1/4" Bracket. Used on 3200 Tailwheel..... P/N 06-00421..... $91.75

MAULE MODEL SFSA SOLID TAILWHEELS

The SFSA tailwheel assembly is of the same type construction as the SFS-P8A unit except for the tire, which is a 6.50 x 2.50 soft rubber solid tire. Spring connector kit not furnished with this model. FAA-approved. Wt. 6 lbs.

SFSA-1-4, for 1-1/4" Spring ..... P/N 06-16710 ..... $399.00
SFSA-1-2, for 1-1/2" Spring ..... P/N 06-16720 ..... $469.00
Replacement Tire & Bearings ..... P/N TW-23A $143.80

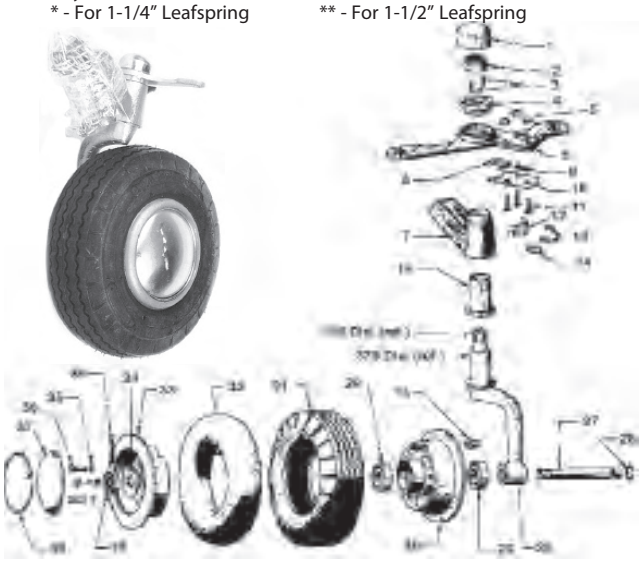


MAULE MODEL SFS-P8A PNEUMATIC TAILWHEELS

An inexpensive 8" pneumatic tailwheel assembly which is steerable and full swiveling, with new improved single arm shimmy-free fork. All working parts heat treated. FAA approved. Wt. 7 lbs.

Maule Tailwheel #SFS-P8A-1-4* ..... P/N 06-16730 ..... $418.00
Maule Tialwheel #SFS-P8A-1-2** ..... P/N 06-16740 ..... $616.00
McCreary Tire 2.80/2.50-4 4 Ply ..... P/N 06-08000 ..... $47.95
McCreary Tube 280 X 250 X 4 ..... P/N 06-08101 ..... $21.80

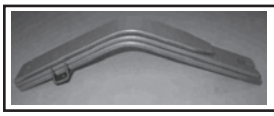
* - For 1-1/4" Leafspring ** - For 1-1/2" Leafspring



MAULE P8B TUNDRA TAILWHEEL

A new tailwheel with 8" pneumatic tire designed and engineered to meet the toughest conditions on all types of airports and landing fields.

SFS-P8B-1-4 ..... For 1-1/4" Leaf Spring Width ..... P/N 06-16750 ..... $663.00
SFS-P8B-1-2 ..... For 1-1/2" Leaf Spring Width ..... P/N 06-16760 ..... $663.00
SFS-P8B-3-4 ..... For 1-3/4" Leaf Spring Width ..... P/N 06-16770 ..... $658.00



ALASKAN BUSHWHEEL MAULE TAILSPRING

Alaskan Bushwheel 1 3/4" Tail Spring for Maule Conventional Geared Aircraft. FAA-PMA #PQ1557NM. Also included with the 1 3/4" Tailspring is the Maule Spring Bolt Pack. ..... P/N 06-01613 ..... $227.95

MAULE TAILWHEEL PARTS LIST

Old Style (Pre 1976) has 3/4" Fork Shaft & New Style (Post 1976) has 7/8" Fork Shaft		Old Style SFS-P8 Pneumatic or SFS Solid Rubber	New Style SFS-P8A Pneumatic and SFSA Solid Rubber	Qty. Req.	Price Each
#	Description	Part Number	Part Number		
1	Cover Cap	TW-18 (1-1/4")	TW-63A (1-3/8")	1	$5.75
2	Nut	AN364-720A or AN365-720	AN364-720A or AN365-720	1	$1.22
3	Lock Ring Pin	TW-17	TW-60AB	1/2	$0.89
4	Lock Ring	TW-16	TW-57	1	$33.50
5	Nut	AN364-440A	AN364-440A	3	$0.26
6	Steering Arm Assembly*	TW-15 (TW-13 & TW-16 are included in this Assembly)	TW-15A	1	$79.75
7	Bracket Assy., 1-1/4 In	06-16101	06-16201	1	$82.75
	Bracket Assy., 1-1/2 In	06-16102	06-16202	1	$99.90
8	Lock Pin	TW-13	TW-13	1	$19.50
9	Steering Arm Spring	TW-14	TW-14	1	$0.54
10	Lock Cover Plate	TW-12	TW-12	1	$9.75
11	Screw	MS35206-217	MS35206-217	3	$0.04
12	Cam	TW-10	TW-10	1	$11.50
13	Screw	AN501-A10-4	AN501-A10-4	2	$0.38
	AN520-10-4	AN520-10-4			
14	Zerk Fitting	TW-7-A14	TW-7-A14	1	$2.20
15	Oilite Bearing	TW-7 (3/4" I.D.)	TW-59A (7/8" I.D.)	1	$19.85
Items 16 through 25 are for the solid rubber tire assembly only.					
16	Cotter Pin	AN380-3-3	AN380-3-3	1	$0.02
17	Screw	TW-A18	TW-A18	3	$0.49
18	Hub Cap	TW-27	TW-27	1	$11.80
19	Axle Nut	AN320-8	AN320-8	1	$1.79
20	Bearing	TW-3	TW-3/A15	1	$15.75
21	Tire–solid, no bearings	TW-23	TW-23	1	$119.95
	Tire–solid, with bearings	TW-23A	TW-23A	1	$143.80
22	Bearing (with washer)	TW-A15	TW-A15	1	$19.90
23	Washer	TW-28	TW-28	1	$1.58
24	Felt Seal	TW-26	TW-26	1	$1.90

Old Style (Pre 1976) has 3/4" Fork Shaft & New Style (Post 1976) has 7/8" Fork Shaft		Old Style SFS-P8 Pneumatic or SFS Solid Rubber	New Style SFS-P8A Pneumatic and SFSA Solid Rubber	Qty. Req.	Price Each
#	Description	Part Number	Part Number		
25	Retainer Washer Fork (with axle)	TW-64	TW-64	1	$0.75
	Solid Rubber	06-00093	TW-61A-1	1	$99.65
27	Axle	TW-5	TW-5	1	$31.75
28	Axle Sirclip Ring	TW-6	TW-6	1	$0.42
29	Bearing	TW-A7	TW-A7	2	$79.90
30	Inboard Wheelhalf, with bearings	TW-30	TW-30	1	$116.95
31	Tire, 8-inch			1	-------
32	Tube			1	-------
33	Outboard Wheelhalf	TW-31	TW-31	1	$57.75
34	Washer	TW-A6	TW-A6	1	$0.95
35	Lock Washer	AN935-516	AN935-516	3	$0.03
36	Bolt	TW-A12	TW-A12	3	$1.89
37	Hub Cap	TW-32	TW-32	1	$14.75
38	Hub Cap Sirclip Ring	TW-33	TW-33	1	$1.55
39	Cotter Pin	AN380-3-3	AN380-3-3	1	$0.02
Items 40 through 44 are used on the "Old" style & pneumatic tailwheel that have a shummy dampener.					
40	Adjusting Screw	TW-40		1	$0.56
41	Dampener Spring	TW-41		1	$0.80
42	Friction Block	TW-42		1	$13.45
43	Hex Housing	TW-43		1	$13.60
44	Bracket Assembly, 1-1/4 inch drilled	TW-44-1-4		1	-------
	Bracket Assembly, 1-1/2 inch drilled	TW-44-1-21	-------		-------

P/N 06-01615

P/N 06-01620

P/N 06-00831

MATCO SINGLE ARM TAILWHEELS

Matco tailwheels use a fiberglass reinforced nylon wheel with an operating load of 450 lbs. It takes over 5000 lbs to fail the wheel and it will hold up in the most rigorous conditions. Can be used with 1-1/4" or 1-1/2" leaf spring. These tailwheels are steerable, and are available with a 6 inch hard rubber solid tire or with 8" Shin pneumatic tire and tube for heavier aircraft. Tailwheel construction is anodized aluminum. Weight: 5 lbs.

Item	Part No.	Price
Matco solid rubber tire tailwheel assy	06-01615	$158.75
Replacement Tire (solid rubber) for T-6	06-00004	$83.75
Matco 6" Pneumatic the tailwheel assy.	06-00831	$188.75
Replacement 6" Pneumatic Tire * Tube	06-00832	$18.50
Matco 7" pneumatic tire tailwheel assy. Overall length of 10.50" and max width of this tail wheel with fully splayed arms is 9.29" and overall height is 10.2".	06-01362	$212.95
Matco 8" full swiveling pneumatic tire tailwheel assy	06-01620	$228.00
Matco 8" pneumatic wide tailwheel assy. Overall length of 12.51". Max fully splayed arms is 9.29" and overall height is 15.7". Weight 8lbs.	06-01361	$249.85
McCreary Replacement 8" Tire 2.80/2.50-4 4PLY	06-08000	$47.95
McCreary Replacement Tube 8" 280 X 250 X 4	06-08101	$21.80

MATCO DUAL ARM TAILWHEELS

MATCO TAILWHEEL DUAL ARM 7 INCH PNEUMATIC

MATCO mfg produces a superior light weight dual fork seven inch tail wheel for use with tail dragger aircraft which require a lighter weight tail wheel-the T-7D. The T-7D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees (earlier release available with optional steering arms WHLT-03A). The WHLTW37 wheel used on the WHLT-7D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-7D features split rims for ease of mounting and dismounting its 7x1.75 tire and tube assembly. The T-7D tail wheel has a seven inch pneumatic tire and an overall length of 10.3 inches. Maximum width of this tail wheel with fully splayed arms is 7 inches and overall height is 10.3 inches. This machined aluminum tail wheel weighs 5.2 pounds.

P/N 06-01527.....$398.00

DUAL ARM TAIL WHEEL ASSEMBLY 8 INCH PNEUMATIC TIRE

The T-8LD tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLTW37 wheel used on the WHLT-8LD has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-8LD features split rims for ease of mounting and dismounting its 200x50 (8"x2") tire and tube assembly. Specifications: 8 inch pneumatic tire, Overall length of 10.8 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height: 10.8 inches, This cast aluminum tail wheel weighs 5.4 pounds P/N 06-01528.....$412.00

LIGHTWEIGHT DUAL ARM TAIL WHEEL ASSEMBLY 8.5 INCH PNEUMATIC TIRE

The T-8D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLTW40EE wheel used on the WHLT-8D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-8D features split rims for ease of mounting and dismounting its 2.80/2.50-4 tire and tube assembly. Specifications: 8.5 inch pneumatic tire, Overall length of 11.6 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height is 11.8 inches, This cast aluminum tail wheel weighs 6.7 pounds. P/N 06-01529.....$419.00

DUAL ARM TAIL WHEEL ASSEMBLY 8.5 INCH PNEUMATIC TIRE

The T-8WD tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The WHLNW40EE wheel used on the WHLT-8WD has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-8WD features split rims for ease of mounting and dismounting its 9x3.50-4 tire and tube assembly. Specifications: 8.5 inch pneumatic tire, Overall length of 11.7 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches, Overall height is 11.9 inches, This cast aluminum tail wheel weighs 8.3 pounds. P/N 06-01531.....$431.00

DUAL ARM TAIL WHEEL ASSEMBLY 10 INCH PNEUMATIC TAIL WHEEL

This wheel features split rims for ease of mounting and dismounting its 10 x 3.50-4 tire and tube assembly. The tail wheel assembly is both steerable and full swiveling and provides easy installation with variant spring tension. This wheel has been designed to release with light spring tension and fits a 1.75 wide spring. Adapter plates can accommodate either a 1.25 or 1.50 inch wide spring. The base unit that mounts to the spring is also machined from extrusion. It is available with a two hole mounting option. The assembly should be mounted on the flat spring so that the pivoting axle is as close to vertical as possible when the plane is loaded. All assembly bushings are made of oil impregnated brass so no lubrication is needed during the life of the tail wheel. In addition, the shaft has been redesigned to .625 for added strength and durability.

Specifications: • Tail wheel has a 10 inch pneumatic tire, overall length of 11.4 inches• Max width of tail wheel with fully splayed arms is 7 inches, overall height of 13.1 inches• Weight: 8.5 pounds.

P/N 06-01781.....$689.00

DUAL ARM TAIL WHEEL ASSEMBLY 11 INCH PNEUMATIC TIRE

The T-11D tail wheel utilizes a dual fork configuration and incorporates a geometric release mechanism that allows the wheel to caster after reaching a steered angle of 40 degrees. The MH5N-S wheel used on the WHLT-11D has a .625 precision sealed ball bearing which is rigorously tested and designed to resist bearing fatigue providing a long bearing life. The arms and wings of the tail wheel fork assembly are composed of 4130 which is heat treated to a Rockwell 38-43 to ensure strength and are irridited to prevent corrosion. The tail wheel base and forks are cast and then black anodized to prevent corrosion as well. The wheel halves are die cast aluminum for light weight and superior strength. The T-11D features split rims for ease of mounting and dismounting its 11x6-5 tubeless tire assembly. Specifications: 11 inch pneumatic tire, Overall length of 13.5 inches, Maximum width of this tail wheel with fully splayed arms: 7 inches Overall height: 14 inches, This cast aluminum tail wheel weighs 9.6 pounds. P/N 06-01537.....$669.00

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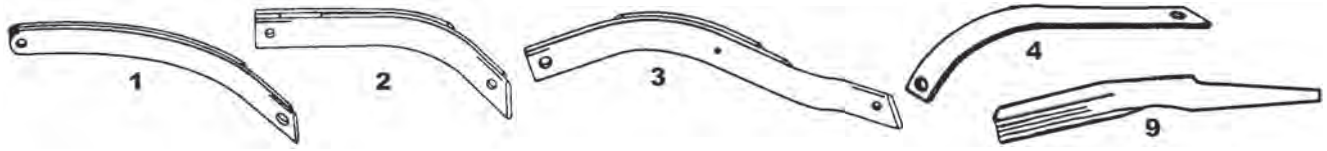
TAILWHEELS



STEEL TAILWHEEL LEAF SPRINGS

Set No.	Spring Width	Hole Dia. Fuselage End	Hole Dia. Tailwheel End	Distance Between Bolt Centers	Original Application	Wt. Lbs.	No. of Springs	Part No.	Price
1	1-1/4"	7/16"	3/8"	12"	Piper J3, PA11, PA11, PA12, PA14, PA15, PA17	3-1/8	3	06-14200	$124.75
2	1-1/2"	3/8"	3/8"	10"	T-Craft BC-12D	2-3/4	3	06-14300	$129.75
3	1-1/2"	3/8"	7/16"	15"	Aeronca 7AC, 11AC	3-1/2	3	06-14400	$137.00
4	1-1/2"	3/8"	3/8"	15"	Homebuilts	1-3/4	1	06-14500	$59.85
5	1-1/4"	5/16"	3/8"	11-3/4"	Luscombe	3-1/2	4	06-14600	$192.75
6	1-1/4"		Main Leaf Only	11-3/4"	Luscombe	1-1/2	1	06-14700	$49.75
7*	1-1/2"	5/8"	7/16"	13-1/8"	Cessna 120-140	4	4	06-14800*	$198.75
8	1-1/2"		Main Leaf Only	13-1/8"	Cessna 120-140	1-1/2	1	06-14900	$66.75
9	1-1/2"	5/8"	7/16"	13"	Cessna 170	5	5	06-15000	$224.95
10	1-1/2"		Main Leaf Only	13"	Cessna 170	1-3/4	1	06-15100	$94.75

DISCOUNTS LESS 10% ON 6, 15% ON 10 (ASSORTED) *P/N 06-14800 has two bends

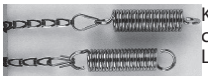
LG

MAULE ANTI-SHIMMY CONNECTOR SPRING KITS

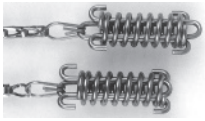
A high and low frequency spring is used to upset the natural frequency of the tailwheel. The lighter spring is used on the left side.

P/N 06-15150 ..... $59.75

TENSION TYPE CONNECTOR SPRING KITS



Kit consists of two tension type springs, two chains and two connector links.
Lightweight Spring Kit Scott
P/N 2151 ..... Ea $57.90
Connector Links ..... P/N 06-15400 ..... Ea $10.75
Chain ..... P/N 06-15500 ..... Ft $1.14



COMPRESSION TYPE CONNECTOR SPRING KIT

Replace conventional springs with new compression type. Original tension type springs keep rudder post under continuous tension which wears the hinges. Compression type springs keep rudder neutral - no tension on post. Assures more effective steering action.
Set of 2 stainless steel springs, (2) 1' chains, 4 connector clips:
P/N 06-15600 ..... $60.75
Springs Only ..... P/N 06-15700 ..... Ea $7.90
Connector Clips ..... P/N 06-15400 ..... Ea $10.75
Chain ..... P/N 06-15500 ..... $1.14/Ft

FAA/PMA TENSION SPRING KIT

Attaches tailspring to tailwheel. Includes 2 springs, 2 connector clips and 2 linkage chains.
P/N 05-11457 ..... $29.50

FAA/PMA COMPRESSION SPRING KIT

Keeps rudder neutral - no tension on the post. Complete with 2 springs, 4 connector clips and 2 linkage chains.
P/N 05-11458 ..... $26.85

HUSKY TAILSPRING

The Husky Tailspring is now available. The 3-leaf tailspring, mounting bracket & hardware is all included. This is a direct replacement for all of Sky International (Aviat Husky) tailsprings and eligible on all Husky aircraft, the A1, A1-A, A1-B and the new A1-C. ..... P/N 06-01364 ..... $211.95

SONEX TAILWHEEL

This sand-cast aluminum cores combine weight, economy and long life with maximum strength. The single-wall construction offers a light yet durable wheel with the ability to absorb impact. Engineered to transmit loads directly to the bearing surface for smoother action.
Diameter & Width:4" x 1-1/2". Bearing ID or Axle Size: 3/8, 1/2, 5/8, 3/4. Hub Length std. 1-1/2". Aprox Wt. 1lb. Load Rating: 225. Less Bearing 1-3/8. P/N 06-01665 ..... $38.50

TAILWHEEL TIRES

6X2 AERO CLASSIC SOLID TIRE - Used on Scott 2000. Replaces Goodyear 6x2 tire.
P/N 06-01044 ..... $62.75

6X2 GENERAL SOLID TIRE - A flexible rubber tire with four knobs on center hole. This is Scott P/N 1879 used on Scott Model 2000 tailwheels and some Scott 3-24B tailwheels. Replaces Goodyear 6x2 (11 knobs) solid tailwheel tire.
P/N 06-15800 ..... $87.65

6.50 X 2.50 SOLID TIRE - Maule P/N 23 for Model SFSA tailwheels.
Tire Only ..... P/N 06-00409 ..... $119.95
Tire w/ Bearings ..... P/N 06-00410 ..... $143.80

2.80/2.50 X4 MCCREARY PNEUMATIC TIRE - Used on Scott Model 2600 8" wheel assembly.
Tire ..... P/N 06-08000 ..... $47.95
Tube ..... P/N 06-08101 ..... $21.80

2.80/2.50 X4 AZUSA TIRE
Tire ..... P/N 06-01287 ..... $9.95
Tube ..... P/N 06-01288 ..... $5.95

10 X 3.50 X 4 MCCREARY PNEUMATIC TIRE - Used on Scott Model 3450 tailwheel and Scott Model 3245-1 10" wheel assembly.
Tire ..... P/N 06-08100 ..... $58.75
Tube ..... P/N 06-08102 ..... $25.85

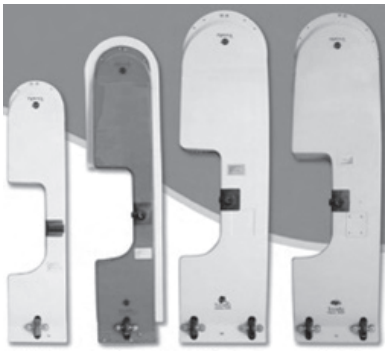
4
00 X 4 AERO CLASSIC - used on Grove Model 49-1A; Tire: 11.5" Dia. Looks like scaled down 500x5 tire.
Tire ..... P/N 06-00844 ..... $58.75
Tube ..... P/N 06-08102 ..... $25.85

400X6 AERO CLASSIC - The New Light Sport Tire, 400-6 6 Ply with a Deep Aircraft Type Tread.
Tire ..... P/N 06-00944 ..... $58.50
Tube ..... P/N 06-00945 ..... $16.50

REPLACEMENT TAILWHEEL FOR VAN'S TAILWHEEL ASSEMBLY

This is a replacement tail wheel for the Van's tail wheel assembly. The hub is made from 6061-t6 aircraft aluminum with a tire molded from 65 durometer SBR rubber. The design includes precision sealed bearings.5-1/2" Diameter X 1-1/2" Thick
P/N 06-01284 ..... $129.85

TRICKAIR AIRCRAFT SKIS



Sport 1500 | Explorer 2250 | Alaskan 2500 | Alpine 3000

Trick Air has developed simple and reliable light aircraft skis of fiberglass composite construction which are aerodynamic and easy to attach and detach from your plane. So easy, in fact, they attach or detach in less than half an hour!

These skis are made in the USA using the latest environmentally friendly technique in fiberglass called closed molding. This is a new "green" process of manufacturing the product.

The 3000, 2500, 2250, 1500 series skis have been static tested to exceed the requirements of TSO-C28 and have been TSO approved.

EASY TO INSTALL

First time installation of hardware on the plane takes approximately 8 hours. After this initial Installation, it only takes 15 MINUTES PER SKI to install or remove the skis from the airplane. Skis are available in a white, sandable gray, Cub yellow, and Torch red finish.

APPROVALS

The 3000 Series are STC approved for the following:

Oleo Strut Maule Models Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-210, M-4-210C, M-4-210S, M-4-210T, M-4-220, M-4-220C, M-4-220S, M-4-220T, M-5-210C, M-5-220C, M-5-235C, M-5-210TC, M-6-235, M-7-235, MX-7-235, M-4-180V, M-5-180C, M-5-200, M-5-210C, M-6-180, M-7-235A, M-7-235B, MX-7-160, MX-7-180, MX-7-180A, MX-7-180B

Maule Spring Gear Models:

MX-7-180AC, MX-7-180C, MX-7-160C, M-7-235C, M-8-235

The 2500 Series are STC approved for the following:

Aviate Husky A-1, A-1A, A-1B, A-1C-180, A-1C-200

The 2250 Series are STC approved for the following:

Piper PA-18, PA-18 "105" (Special), PA-18A, PA-18 "125" (Army L-21A), PA-18 "135" (ArmyL21B), PA-18A "135", PA-18 "150", PA-18A "150", and PA-19 (Army L-18C) American Champion 7ECA, 7GCAA, 7GCBC, and 7KCAB The 1500 Series are STC approved for the following:

Cessna 120 and 140, 140A Piper J3C-40, J3C-50, J3C-65 and PA-11 American Champion 7AC, 7BCM, 7CCM and 7DC, 7EC, 11AC and 11BC, 11CC

Series	Suspension	Part No.	Price
3000 series	Strut Suspension	05-04373	$7,755.00
3000-A series	Spring Gear Suspension	05-04374	$8,465.00
2500 series	Strut Suspension	05-06990	$9,370.59
2500-A series	Spring Gear Suspension	05-06991	$8,753.00
2250 series	Strut Suspension	05-04375	$6,095.00
1500 series	Strut Suspension	05-04377	$5,195.00
1500-A series	Spring Gear Suspension	05-04378	$5,195.00

FULL LOTUS FLOATS

Full Lotus Manufacturing develops and manufactures inflatable floats for fixed wing aircraft and helicopters. They have extensive knowledge in fabric structural engineering and manufacturing, lightweight air retention membrane technology, and rotational molding.

PLEASE VISIT WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF LOTUS FLOATS AND PRICING

NEW SURPLUS MAULE WHEEL AND TIRE ASSEMBLY

Maule tailwheels are designed and engineered to meet the toughest conditions on all types of airports and landing fields. These replacement Maule P8 style wheel and tire assemblies equipped with a 10" pneumatic tire and are ready to be installed on appropriate sized axles. These tailwheels were manufactured by Maule Aircraft in 2005 and quantities are limited.

Assemblies have the following components: • TW-31 Hub Wheel Half (Outer) • TW-30 Hub Wheel Half (Inner) • 10-3.50-4 Tire & Tube

**Note: Be aware these units have a 10" tire and tube stem is protruding from outer wheel half. See photo above.

P/N 06-01663 ..... $94.75

BERINGER WHEEL COVER

Wheel cover made of aluminum red anodized, fully CNC machined and laser engraved. Protect external bearing and axle nut. Fixed on rim with O-ring.

For Beringer 5" wheel ..... P/N 06-00956 ..... $68.00
For Beringer 6" wheel ..... P/N 06-01121 ..... $78.00

BERINGER SPARE CLIPS

Stainless steel clips between wheel rim and disc. Includes: 10 left and 10 right (set for 1 wheel), procedure. Set of 20.

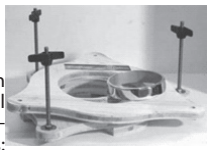
P/N 06-01111 ..... $32.00

BERINGER WHEEL O-RINGS

These O-rings need to be replaced at each tire changing. Includes: 2 large O-rings and 1 small O-ring.

For Beringer 5" wheel ..... P/N 06-01112 ..... $14.00
For Beringer 6" wheel ..... P/N 06-01113 ..... $14.00

BERINGER TIRE CHANGING TOOL



Specific tire change tool for Beringer wheels with conical aluminum spacer to insert tire on wheel half. Plywood flanges maintain tire while positioning second wheel half with the O-ring. Includes: Plywood flanges, bolts with butterfly nut and conical aluminum spacer

Tire change tool for BERINGER 5" wheels ..... P/N 06-01109 ..... $125.00
Tire change tool for BERINGER 6" wheels ..... P/N 06-01110 ..... $147.00

WHEEL SPEED COVER KIT

U.S. Patented wheel covers enjoying performance improvements you only dreamed about, even better. Kits are available for all serial numbers for Cessna 402C, 414A, 421C Note: You must measure both the right and left side wheel nuts prior to order. Complete kit will install in 2-3 hours!

P/N 06-01779 ..... $1,995.00

NITROGEN TIRE INFLATION SYSTEM 20CU, 40CU NITROGEN ACCESSORY KIT

NOT FOR STRUT USE

GENTEC® Nitrogen aircraft tire inflation systems allow for easy, cost effective filling of General Aviation aircraft tires with pure Nitrogen.Due to the complex nature of construction and the severe operating conditions of aircraft tires, Michelin and other leading tire manufacturers recommend the use of Nitrogen as does the FAA. Nitrogen is a totally inert gas that will not support corrosion, oxidation or moisture within aircraft wheels and tires. Nitrogen has a larger gas molecule than air, so low tire pressure due to allowable leakage is minimized. Nitrogen also maintains a lower thermal coefficient, thus minimizing thermal damage and extending tire life versus compressed air. Gentec Nitrogen aircraft tire inflation systems are available in two versions. The GKNAT20-TC is a 20 cubic foot high pressure nitrogen tank (empty) with stand, six foot hose; pressure reducing single stage regulator and tire inflator with resettable dial pressure gauge. The GKNAT40-TC is a 40 cubic foot high pressure nitrogen tank (empty) with stand, six foot hose; pressure reducing single stage regulator and tire inflator with resettable dial pressure gauge. Note: The kit is for someone who may already have a nitrogen cylinder and only needs the accessories.

Vist our website to locate a filling station near you.

Nitrogen Tire Inflation System 20CU ..... P/N 12-01586 ..... $299.00
Nitrogen Tire Inflation System CU40 ..... P/N 12-01587 ..... $356.00
Nitrogen Accessory Kit- (This kit is for someone who may already have a nitrogen cylinder and only needs the accessories)
P/N 12-01588 ..... $169.50

LG

CARBURETORS

REPLACEMENT CARBURETORS FROM KELLY AEROSPACE POWER SYSTEMS

Overhauling Lycoming and Continental carburetors & Providing FAA approved replacement parts for 20 years! Look to Kelly Aerospace Power Systems for Quality Fuel System Overhauled Units

Aircraft Spruce & Specialty, as a factory distributor, offers a carburetor exchange program covering all popular Marvel Schebler/Facet general aviation carburetors. These carburetors are overhauled to the strictest industry standards and carry a full 6 month warranty (from date of installation). Most carburetors are available from stock or within a week and are furnished complete with gaskets. Due to the various configurations of carburetor installations, we suggest you retain your carburetor core until receiving the exchange unit. This will enable you to transfer all external fittings and installation hardware to the new exchange unit. All cores being returned for credit shall be, as removed from the engine, complete and not disassembled. A reduction in core credit is charged for missing or damaged parts.

Customer will need to provide core for overhaul in the event that our supplier does not have cores available to overhaul

- Precision Carburetors
- TCM Fuel Systems
- Flow Dividers
- Fast Turn Time on Overhauls
- Unmatched Quality
- 100% calibration of fuel pumps and servos.
- Precision Fuel Servos
- Romec Fuel Pumps
- FAA/PMA Approved Replacement Parts
- Carburetor Overhaul Quick Kits
- Highly skilled/trained technicians

LYCOMING CARBURETORS

Carb. Model	Lycoming P/N	Vendor P/N	Our P/N	Price	Core
MA-3A	61547	A10-3103-1	10-03103-1	$696.00	$600.00
MA-4SPA	69250	A10-3678-12	09-00984	$763.00	$800.00
MA-4SPA	72394	A10-3678-32	07-00871	$769.00	$800.00
MA-4-5	71098	A10-3878	10-03878	$769.00	$1,000.00
MA-4-5	71710	A10-4164-1	07-00872	$749.00	$1,000.00
MA-4-5	66458	10-2827	07-01405	$769.00	$1,000.00
MA-3A	61383	10-2983	07-01408	$696.00	$600.00
MA-4-5	66869	10-3323	07-01411	$769.00	$1,000.00
MA-4-5	67713	10-3391-1	07-01412	$769.00	$1,000.00
MA-3SPA	62830	10-3565-1	07-01413	$702.00	$600.00
MA-4-5	69540	10-3634	07-01415	$757.00	$1,000.00
MA-3SPA	68856	10-3729	07-01416	$699.00	$600.00
MA-4-5	71546	10-3856-1	07-01417	$769.00	$1,000.00
MA-4-5	71685	10-3856-12	07-01418	$769.00	$1,000.00
MA-4-5AA	71139	10-4025	07-01419	$769.00	$1,000.00
MA-4-5AA	71684	10-4025-12	07-01421	$770.00	$1,000.00
MA-4-5	71654	10-4057-1	07-01422	$769.00	$1,000.00
MA-6AA	72407	10-4218-1	07-01424	$824.00	$800.00
MA-4-5	72386	10-4329	07-01426	$769.00	$1,000.00
MA-4-5	74121	10-4404-1	07-01427	$769.00	$1,000.00
MA-6AA	73899	10-4438-1	07-01428	$824.00	$800.00
MA-4-5AA	73257	10-4495	07-01429	$769.00	$1,000.00
MA-5	20671	10-4865	07-01430	$758.00	$800.00
HA-6	LW-15957	10-5219	07-01462	$811.00	$800.00
MA-3PA	LW-16073	10-5220	07-01463	$683.00	$600.00
MA-3PA		10-5220-E	07-01464	$702.00	$600.00
HA-6	LW-16066	10-5221	07-01465	$855.00	$800.00
HA-6	LW-15958	10-5224	07-01466	$811.00	$800.00

Carb. Model	Lycoming P/N	Vendor P/N	Our P/N	Price	Core
MA-4SPA	77279	10-4910	07-01431	$758.00	$800.00
MA-4SPA	LW-16559	10-4910-1	07-01432	$758.00	$800.00
MA-3A	77585	10-4953	07-01433	$758.00	$600.00
MA-6AA	77888	10-4975	07-01434	$824.00	$800.00
MA-3PA	77939	10-4978-1	07-01435	$699.00	$600.00
MA-4-5	LW-10064	10-5034	07-01437	$811.00	$1,000.00
MA-4-5	LW-10196	10-5042	07-01438	$769.00	$1,000.00
MA-3PA	LW-10619	10-5050	07-01440	$683.00	$600.00
MA-4-5	LW-10540	10-5054	07-01441	$811.00	$1,000.00
MA-4SPA	LW-11222	10-5062	07-01442	$763.00	$800.00
HA-6	LW-12097	10-5092	07-01443	$865.00	$800.00
MA-3PA	LW-13133	10-5126	07-01444	$683.00	$600.00
MA-3PA	LW-14016	10-5142	07-01445	$683.00	$600.00
HA-6	LW-14689	10-5180	07-01446	$855.00	$800.00
HA-6	LW-13757	10-5189	07-01447	$855.00	$800.00
MA-4-5	LW-15380	10-5193	07-01448	$769.00	$1,000.00
HA-6	LW-15504	10-5200	07-01450	$855.00	$800.00
HA-6	LW-15981	10-5200-1	07-01451	$758.00	$800.00
HA-6	LW-15626	10-5206	07-01453	$855.00	$800.00
HA-6	LW-16062	10-5206-1	07-01457	$855.00	$800.00
HA-6	LW-16413	10-5206-11	07-01458	$855.00	$800.00
HA-6	LW-15663	10-5210	07-01459	$855.00	$800.00
HA-6	LW-15674	10-5211	07-01460	$855.00	$800.00
HA-6	LW-15985	10-5211-1	07-01461	$855.00	$800.00
MA-4-5	72740	A10-4404	08-01543	$769.00	$1,000.00
MA-4SPA	78728	A10-5009	07-00873	$763.00	$800.00
MA-4SPA	13659	A10-5135	10-05135	$769.00	$800.00
MA-3A	15496	A10-5199	07-00234	$749.00	$600.00
MA-4SPA	15986	A10-5217	10-05217	$769.00	$800.00
MA-3SAP	0-290-D	A10-3346-1	07-00870	$699.00	$600.00
$600.00	LW-16206	10-5227	07-01467	$854.00	$800.00
$699.00	LW-15959	10-5230	07-01468	$811.00	$800.00
HA-6	LW-15960	10-5235	07-01469	$908.00	$800.00

NOTE

Customer will need to provide core for overhaul in the event our supplier does not have cores available to overhaul.
If you do not see your model # here please contact Aircraft Spruce Sales Department for pricing and availability .
*All prices shown are with factory acceptable exchange carburetor.
Send exchange carburetor core to Aircraft Spruce. Upon factory approval of core, you will be refunded the core charge.

BE CERTAIN ALL FUEL IS REMOVED FROM THE CORE.

If Carburetor is not in stock we can have yours overhauled in 5-7 working days. Please call or email for more information.

CONTINENTAL CARBURETORS

Part No.	Carb. Model	O.E.M. P/N	Our Part No.	Our Price	Core
A10-3168	MA-4-5	520120	07-01369	$769.00	$1,000.00
A10-3237	MA-3SPA	530490	10-03237	$698.00	$800.00
A10-3649-1	MA-4-5	535207	07-01370	$769.00	$600.00
A10-3859-1	MA-4-5	538872	07-01372	$811.00	$1,000.00
A10-3965-1	MA-4-5	539883	07-01373	$769.00	$1,000.00
A10-3965-12	MA-4-5	539883	10-03965-12	$799.00	$1,000.00
A10-4115-1	MA-3SPA	627143	10-04115-1	$699.00	$800.00
A10-4171	MA-4-5	626789	07-01351	$769.00	$1,000.00
A10-4191	MA-4-5	626859	07-01375	$758.00	$1,000.00
A10-4233	MA-3SPA	627365	07-01376	$683.00	$600.00
A10-4240	MA-3SPA	627637	07-01377	$703.00	$600.00
A10-4439	MA-3SPA	628945	10-04439	$699.00	$600.00
A10-4457	MA-3SPA	629175	07-01378	$699.00	$600.00
A10-4893-1	MA-4-5	641139	07-00231	$769.00	$1,000.00
A10-4894	MA-3SPA	633028	07-00842	$699.00	$800.00
A10-5067	MA-3SPA	-	07-01381	$699.00	$600.00
A10-5082	MA-3SPA	637035	07-01382	$699.00	$600.00
A10-5128	MA-3SPA	640416	07-01385	$699.00	$600.00
A10-5192	MA-3SPA	641860	07-01386	$769.00	$1,000.00
A10-5284	MA-4-5	646232	07-01390	$766.00	$1,000.00

*All prices shown are with factory acceptable exchange carburetor. Add core charge on all models to each price shown. Send exchange carburetor core to Aircraft Spruce. Upon factory approval of core, you will be refunded the core charge.
BE CERTAIN ALL FUEL IS REMOVED FROM THE CORE.
FRANKLIN ENGINE CARBURETORS ALSO AVAILABLE. ADVISE EXACT ENGINE AND CARBURETORS ALSO AVAILABLE. ADVISE ENGINE AND CARBURETOR MODEL NUMBERS AND REQUEST QUOTATION

MARVEL-SCHEBLER CARBURETORS

MARVEL-SCHEBLER NEW CARBURETORS

Note: Customer will need to provide core for overhaul in the event our supplier does not have cores available to overhaul.

Note: All Rebuilt & Overhauled Carb Purchases will be Charged an Additional $600.00 for Core.

Please check with Aircraft Spruce on availability of cores at Marvel-Schebler.

Carb. Model No.	OEM Part No.	Our Part No.	Our Price	Tempest Carb. Model No.	OEM Part No.	Our Part No.	Our Price
MA-4SPA™	10-3678-12--F	08-06304	$1,648.00	MA-4SPA™	10-3678-32--F	08-06305	$1,649.00
MA-4-5™	10-3859-1--F	08-06327	$2,116.00	MA-4-5™	10-3878--F	08-06306	$2,116.00
MA-4-5™	10-4164-1--F	08-06307	$2,116.00	MA-3PA™	10-4233--F	08-06328	$1,649.00
MA-3SPA™	10-4240-1--F	08-06329	$1,698.00	MA-4-5™	10-4404-1--F	08-06308	$2,117.00
MA-4-5™	10-4404--F	08-06330	$2,116.00	MA-5™	10-4865--F	08-06331	$2,598.00
MA-4-5™	10-4893-1--F	08-06309	$2,116.00	MA-3SPA™	10-4894-1--F	08-06311	$1,697.00
MA-3SPA™	10-4895-1--F	08-06312	$1,708.00	MA-4SPA™	10-4910-1--F	08-06332	$1,649.00
MA-4SPA™	10-5009--F	08-06315	$1,649.00	MA-4-5™	10-5034--F	08-06335	$2,116.00
MA-3PA™	10-5050--F	08-06336	$1,648.00	MA-4-5™	10-5054--F	08-06337	$2,117.00
MA-3SPA™	10-5082--F	08-06338	$1,649.00	MA-3PA™	10-5126--F	08-06339	$1,648.00
MA-3PA™	10-5142--F	08-06340	$1,648.00	MA-4-5™	10-5193--F	08-06341	$2,129.00
MA-3A™	10-5199--F	08-06316	$1,473.00	MA-4SPA™	10-5217--F	08-06317	$2,154.00
HA-6™	10-5219--F	08-06342	$2,296.00	MA-3PA™	10-5220--F	08-06343	$1,649.00
HA-6™	10-5224--F	08-06344	$2,293.00	HA-6™	10-5230--F	08-06345	$2,293.00
HA-6™	10-5235--F	08-06346	$2,293.00	HA-6™	10-5253--F	08-06347	$2,293.00
HA-6™	10-5255--F	08-06348	$2,293.00	MA-3PA™	10-5257--F	08-06349	$1,648.00
MA-3PA™	10-5267--F	08-06353	$1,649.00	HA-6™	10-5283--F	08-06354	$2,293.00
MA-4-5™	10-5284--F	08-06356	$2,116.00	MA-4-5™	10-5288--F	08-06357	$2,116.00
HA-6™	10-6001--F	08-06358	$2,293.00	HA-6™	10-6019--F	08-06359	$2,293.00
HA-6™	10-6030-1--F	08-06363	$2,293.00	MA-4-5™	10-6035-11--F	08-06365	$2,598.00
MA-4-5™	10-6045--F	08-06366	$2,116.00	MA-4-5™	10-6050--F	08-06368	$2,116.00
MA-4-5™	10-6054--F	08-06369	$2,117.00	MA-4-5™	10-6102--F	08-06370	$2,116.00

EP

MARVEL-SCHEBLER REBUILT & OVERHAULED CARBURETORS

Model Number	OEM Part No.	Rebuilt P/N	Rebuilt Price	Overhaul P/N	Overhaul Price	Core for Rebuilt / Overhauled
MA-4SPA™	10-3678-12	08-06325-1	$869.00	08-06325	$769.00	$600.00
MA-4SPA™	10-3678-32	08-06326-1	$889.00	08-06326	$769.00	$600.00
MA-4-5™	10-3859-1	08-06371-1	$1,033.00	08-06371	$753.00	$600.00
MA-4-5™	10-3878	08-06372-1	$1,049.00	08-06372	$778.00	$600.00
MA-4-5™	10-4164-1	08-06373-1	$1,033.00	08-06373	$769.00	$600.00
MA-3PA™	10-4233	08-06374-1	$869.00	08-06374	$743.00	$600.00
MA-4-5™	10-4404-1	08-06376-1	$1,034.00	08-06376	$753.00	$600.00
MA-4-5™	10-4404	08-06375-1	$1,034.00	08-06375	$753.00	$600.00
MA-4-5™	10-4893-1	08-06378-1	$1,071.00	08-06378	$778.00	$600.00
MA-3SPA™	10-4894-1	08-06379-1	$897.00	08-06379	$769.00	$600.00
MA-3SPA™	10-4895-1	08-06380-1	$894.00	08-06380	$897.00	$600.00
MA-4SPA™	10-4910-1	08-06382-1	$869.00	08-06382	$742.00	$600.00
MA-4SPA™	10-4910	08-06381-1	$869.00	08-06381	$742.00	$600.00
MA-3A™	10-4953	08-06383-1	$759.00	08-06383	$705.00	$600.00
MA-4SPA™	10-5009	08-06384-1	$879.00	08-06384	$769.00	$600.00
MA-4-5™	10-5034	08-06385-1	$1,033.00	08-06385	$754.00	$600.00
MA-3PA™	10-5050	08-06386-1	$870.00	08-06386	$742.00	$600.00
MA-4-5™	10-5054	08-06387-1	$1,033.00	08-06387	$753.00	$600.00
MA-3PA™	10-5126	08-06388-1	$870.00	08-06388	$742.00	$600.00
MA-3PA™	10-5142	08-06389-1	$876.00	08-06389	$743.00	$600.00
MA-4-5™	10-5193	08-06390-1	$1,072.00	08-06390	$776.00	$600.00
MA-3A™	10-5199	08-06391-1	$759.00	08-06391	$730.00	$600.00
MA-4SPA™	10-5217	08-06392-1	$894.00	08-06392	$769.00	$600.00
HA-6™	10-5219	08-06394-1	$1,071.00	08-06394	$940.00	$600.00
MA-3PA™	10-5220	08-06395-1	$869.00	08-06395	$742.00	$600.00
HA-6™	10-5224	08-06396-1	$1,032.00	08-06396	$907.00	$600.00
HA-6™	10-5230	08-06397-1	$1,033.00	08-06397	$907.00	$600.00
HA-6™	10-5235	08-06398-1	$1,033.00	08-06398	$907.00	$600.00
HA-6™	10-5253	08-06399-1	$1,049.00	08-06399	$907.00	$600.00
HA-6™	10-5255	08-06400-1	$1,034.00	08-06400	$919.00	$600.00
MA-3PA™	10-5257	08-06401-1	$900.00	08-06401	$742.00	$600.00
MA-3PA™	10-5267	08-06402-1	$889.00	08-06402	$742.00	$600.00
HA-6™	10-5283	08-06403-1	$1,034.00	08-06403	$918.00	$600.00
MA-4-5™	10-5284	08-06404-1	$1,058.00	08-06404	$778.00	$600.00
MA-4-5™	10-5288	08-06405-1	$1,033.00	08-06405	$752.00	$600.00
HA-6™	10-6001	08-06406-1	$1,033.00	08-06406	$907.00	$600.00
HA-6™	10-6019	08-06407-1	$1,034.00	08-06407	$918.00	$600.00
HA-6™	10-6030-1	08-06408-1	$1,034.00	08-06408	$907.00	$600.00
MA-4-5™	10-6035-11	08-06409-1	$1,034.00	08-06409	$778.00	$600.00
MA-4-5™	10-6054	08-06410-1	$1,034.00	08-06410	$753.00	$600.00

MARVEL-SCHEBLER FLOAT KIT

A new float has been developed for the small MA series carburetors. The new floats are a solid blue epoxy material with a smooth skin.

Small ..... P/N 08-06508 ..... $113.95
Large ..... P/N 08-06510 ..... $131.95

THROTTLE SHAFT MINOR REPAIR KIT 778-1007-F

Tempest MSA throttle minor repair kit (778-1007--F). All parts contained in this kit are covered under FAA/PMA PQ0111NM and/or PQ1296CE.

P/N 08-06539 ..... $132.95

CARBURETOR PARTS

MARVEL-SCHEBLER FACET REPLACEMENT CARBURETOR PARTS

Mfg. Ref.	Part No.	Description.	Price
CF16-A39	07-06601	Gasket	$2.75
CF16-A42	07-06602	Gasket	$2.74
CF16-A4B	07-06603	Gasket	$4.70
CF16-A56	07-06604	Gasket	$11.95
CF16-B44	07-06605	Gasket	$3.95
CF16-B45	07-06606	Gasket	$2.75
CF16-B85	07-06608	Gasket	$4.35
CF17-372	07-06609	Rod	$20.85
CF17-383	07-06610	Rod	$19.60
CF194-580	07-06611	Pump Plunger	$92.75
CF194-581	07-06612	Pump Plunger	$79.85
CF194-591	07-06613	Pump Plunger	$89.00
CF194-593	07-06614	Pump Plunger	$84.75
CF194-605	07-06615	Pump Plunger	$93.65
CF233-614	07-06616	Valve & Seat	$74.85
CF233-615	07-06617	Float Valve	$68.75
CF24-262	07-06618	Spring	$2.05
CF24-A10	07-06619	Spring	$3.45
CF24-A115	07-06620	Spring	$3.50
CF24-A30	07-06621	Spring	$2.99
CF24-A33	07-06622	Spring	$3.95
CF29-182	07-06623	Clip	$11.95
CF32-32	07-06624	Shaft	$16.95
CF32-35	07-06625	Shaft	$17.90
CF32-72	07-06626	Valve	$15.50
CF34-91	07-06627	Valve	$12.50
CF44-220	07-06628	Packing	$5.75
CF44-223	07-06629	Packing"O" Ring	$6.55
CF44-224	07-06630	Packing	$5.75
CF44-49	07-06631	Packing	$12.50
CF60-260	07-06632	Bushing	$12.90

Mfg. Ref.	Part No.	Description.	Price
CF60-A160	07-06633	Bushing	$19.50
CF778-1003	07-06634	Throttle Shaft	$129.95
CF778-1004	07-06635	Throttle Shaft	$95.80
CF15-483	07-06666	Screw	$1.55
CF15-58	07-06667	Screw	$1.75
CF15-A14	07-06668	Screw	$1.87
CF15-A23	07-06669	Screw	$1.93
CF15-B108	07-06670	Screw	$2.59
CF15-B109	07-06671	Screw	$2.75
CF15-B98	07-06672	Screw	$4.80
CF16-222	07-06673	Gasket	$6.50
CF16-224	07-06674	Gasket	$2.57
CF16-625	07-06675	Gasket Kit	$76.75
CF16-646	07-06677	Gasket Kit	$73.85
CF16-653	07-06678	Gasket Kit	$38.65
CF16-676	07-06679	Gasket Kit	$38.75
CF16-696	07-06680	Gasket Kit	$38.65
CF16-713	07-06681	Gasket Kit	$29.75
CF16-735	07-06682	Gasket Kit	$37.50
CF16-A107	07-06683	Gasket	$3.35
CF16-A108	07-06684	Gasket	$2.75
CF16-A16	07-06685	Gasket	$2.80
CF16-A28	07-06686	Gasket	$2.90
CF16-A30	07-06687	Gasket	$3.90
CF16-A31	07-06688	Gasket	$4.75
CF16-A32	07-06689	Gasket	$3.85
CF16-A36	07-06690	Gasket	$3.75
CF82-1	07-06691	Pin	$0.99
CF82-11	07-06692	Pin-Cotter	$1.10
CF82-14	07-06693	Pin-Cotter	$1.14
CF99-44	07-06694	Plug	$8.50

Mfg. Ref.	Part No.	Description.	Price
CF99-8	07-06695	Plug	$12.75
CF47-850	07-06696	Nozzle	$117.75
CF47-851	07-06697	Nozzle	$123.75
CF47-852	07-06699	Nozzle	$127.75
CF778-1005	07-06636	Throttle Shaft	$121.75
CF778-1006	07-06637	Throttle Shaft	$125.85
CF778-1007	07-06638	Throttle Shaft	$107.75
CF778-1008	07-06639	Throttle Shaft	$133.75
CF78-121	78-121	Washer	$1.95
CF78-388	07-06648	Washer	$1.14
CF78-A109	07-06649	Washer	$2.95
CF78-A110	07-06650	Washer	$2.95
CF78-A111	07-06651	Washer	$2.75
CF78-A40	07-06652	Washer	$2.13
CF78-A97	07-06653	Washer	$2.65
CF81-311	07-06654	Nut	$4.35
CF13-1519	07-06655	Throttle Shaft	$133.75
CF13-1520	07-06656	Throttle Shaft	$134.95
CF13-1521	07-06657	Throttle Shaft	$128.75
CF13-1522	07-06658	Throttle Shaft	$168.75
CF13-1523	07-06659	Throttle Shaft	$144.75
CF13-1531	07-06660	Throttle Shaft	$154.75
CF13-1533	07-06661	Throttle Shaft	$177.75
CF155-226	07-06662	Lever	$13.75
CF155-307	07-06663	Lever	$26.85
CF15-126	07-06664	Screw	$5.25
CF43-648	07-06702	Needle	$27.55
CF43-564	07-06701	Needle	$42.85

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE PARTS LIST.

EP

REPLACEMENT CARBURETOR VENTURI'S (ONE PIECE)

These one piece Venturis replace old type primary and main Venturis in Marvel-Schebler carburators. Order by new Venturi part number.

Old Main Venturi	New 1-Piece Venturi	Our Price
46-462	46-F7	$107.95
46-486	46-F8	$76.95

Old Main Venturi	New 1-Piece Venturi	Our Price
46-A2	46-F10	$79.75
46-A65	46-F11	$64.90
46-A70	46-F12	$84.75

FLOAT NEEDLE SEAT DRIVER

This Float Needle Seat Driver is applicable to Marvel-Schebler MA3 and MA4 carburetors and is quality made of alloy steel. It facilitates the easy removal of needle valve seats, prevents damage to the main casting and the new seat during installation, and insures proper torque application. Features 7/16" hex drive fitting. P/N 12-30190 .....$76.75

BENDIX/PRECISION RSA FUEL SERVOS & FLOW DIVIDERS

- Bendix/Precision (RSA-5, RSA-7da1, RSA-10 Overhaul/Exchange).
- Bendix/Precision (Flow Dividers Overhaul/Exchange.
- TMC Complete Fuel Injection Systems (IO-360, IO-550, L/TSIO-360,TSIO-520, GTSIO-520, TSI Overhaul Exchange).
- TCM Individual Fuel Injection Components Throttle Assemblies, Control Assemblies (without throttle Pumps, Manifold Valves, Pressure Regulators, No Assemblies (cleaning, rejetting, calibrating).
- FAA/PMA Replacement Parts.

Call or visit our website at: www.aircraftspruce.com for more info.

REPLACEMENT FLOAT KITS BY KELLY AEROSPACE

1984 FAA Service Bulletin A1-84 recommends replacing old Marvel-Schebler floats with the following float kits which feature metal floats to replace old plastic floats:

Kit CF666-915 - For MA3, MA3-SPA, MA4-SPA.....P/N 07-00677 .....$112.00
Kit CF666-916 - For MA4-5, MA5, MA6.....P/N 07-00678 .....$119.99
Kit CF666-917 - For HA-6.....P/N 07-00679 .....$118.95
Needle and Seats for MA3-4 #233-615.....P/N 07-06617 ..... $68.75
Needle and Seats for MA4-5 #233-614.....P/N 07-06616 ..... $74.85

REPAIR KITS & PARTS FOR COMMON MARVEL-SCHEBLER CARBURETORS

Lycoming No.	Marvel-Schebler		Major Repair Kit Price
	Kit P/N	Carb P/N	
62289	286-1628	10-3346-1	$561.00
69250	286-1624	10-3678-12	$413.95
62830	286-1630	10-3565-1	$414.00
LW-11222	286-1622	10-5062	$413.95
LA-16907	286-1783	10-5267	$322.00
71098	666-660	10-3878	$208.95

NOTE: Many Marvel-Schebler replacement parts are no longer available from Facet. These are manufactured by Kelly Aerospace.

CARBURETOR HEAT BOX PARTS

Unique Elastomer Bearing Replaces Needle Bearing - McFarlane's elastomer bearing is assembled with tension between the mating surfaces. This tension prevents micro-movement and its related metal erosion. The bearing contact area that transfers vibration motion from the heat box to the butterfly shaft is hundreds of times greater than that of the original needle bearing. This large surface effectively prevents localized metal erosion. • Absorbs shaft and butterfly vibration • Eliminates needle bearing failures • Increases service life of all components • Direct replacement for original parts. Proven Design: • Tested to over 700,000 cycles while exposed to avgas, heat and vibration without any change in performance • Extremely rugged and wear resistant in high temperature and fuel environments. Convenient: • Discontinued part numbers through the factory are now manufactured by McFarlane • Also available in kits containing the shaft, arm, bearing housings, monel rivets, and roll pin

CESSNA SHAFT		
Description	Part No.	Price
Cessna Shaft MC0450068-2 Model: FA152 Serial No: FA1520337 thru FA1520425	05-04430	$150.75
Cessna Shaft MC0550180-16 Model: 172B,C Serial No: 17247747 thru 17249544	05-04431	$136.75
Cessna Shaft MC0550180-28 Model: F172D,E,F, G Serial No: F172-0001 thru F172-0319	05-04432	$175.75
Cessna Shaft MC0509068-6 Model: 172Q Serial No: 17275869 thru 17276516	05-04433	$190.75
Cessna Shaft MC1752078-4 Model: 177A,B Serial No: 17701165 thru 17702752	05-04434	$83.99
Cessna Shaft MC0750112 Model: 180* Serial No: 30000 thru 32150	05-04435	$143.75
Cessna Shaft MC0750126-19 Model: 180*, 180A,B Serial No: 32151 thru 50661	05-04436	$160.75
Cessna Shaft MC0750133-8 Model: 175, 175A Serial No: 55001 thru 56777	05-04437	$79.75
Cessna Shaft MC0750173-3 Model: 185, 185A,B, C,D,E/ A185E* Serial No: 185-0001 thru 185-1300	05-04438	$165.75
Cessna Shaft MC0750173-4 Model: A185E* Serial No: 185-1301 thru 18501832	05-04439	$180.75

*Partial model eligibiliy.

CESSNA ARM		
Description	Part No.	Price
Cessna Arm MCS2280-8-00 Model: 152, A152, F152, FA152 Serial No: 15279406 thru 15286033 A152 A1520735 thru A1521049 F152 F15201429 thru F1520198 FA152 FA1520337 thru FA1520425	05-04440	$138.75
Cessna Arm MC0750111-19	05-04441	$110.75
Cessna Arm MCS2280-3-157	05-04442	$179.75

CESSNA BEARING		
Description	Part No.	Price
Cessna Bearing HSG MC0750113-1 Model: 152 Serial No: MC0750113-1	05-04443	$51.80
Cessna Bearing HSG MC0750113-3 Model: 172Q Serial No:MC0750113-3	05-04444	$52.85

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CARBURETOR OVERHAUL QUICK KITS

Kelly Aerospace "Quick Kits" are easy to use, and are designed to save you time and money. Quick Kits include not only the recommended replacement parts used in every overhaul, but the additional parts used by all fuel professionals to insure the job is done right.
Kits include (where applicable): Throttle shaft lever, throttle shaft, throttle adjusting screw, throttle valve screws, inlet strainer screws, throttle body screws, mixture control lever screw, gasket kit, pump connection rod, throttle adjustment spring, throttle opening spring, idle adjustment spring, float lever shaft, pump stem, throttle shaft bushings, inlet strainer washer, pump stem retainer washer, mixture control lever washer, throttle body washers, throttle lever lock nut, float shaft cotter pin, throttle nut cotter pin, pump lever, pump plunger assembly and float valve seat assembly.

KIT P/N	PRICE
CF286-00	$329.00
CF286-01	$464.00
CF286-02	$429.00
CF286-03	$467.00
CF286-04	$409.00
CF286-05	$498.00
CF286-06	$463.00
CF286-07	$486.00
CF286-08	$459.95
CF286-09	$469.00
CF286-10	$529.00
CF286-11	$528.00
CF286-12	$360.00

See which Part No. is for your application in the charts to the right.

Franklin Carburetors	
P/N	"Quick Kit" P/N
10-2971-P	CF286-02
10-3007	CF286-06
10-3063-2	CF286-06
10-3148-1	CF286-06
10-3479	CF286-06
10-5069	CF286-02
10-5093	CF286-00
Continental Carburetors	
P/N	"Quick Kit" P/N
10-2848	CF286-02
10-2948	CF286-02
10-3168	CF286-05
10-3237	CF286-03
10-3649-1	CF286-05
10-3759	CF286-05
10-3859	CF286-05
10-3859-1	CF286-05
10-3965	CF286-05
10-3965-1	CF286-05
10-4171	CF286-05
10-4191	CF286-05
10-4233	CF286-02
10-4240	CF286-02
10-4240-1	CF286-02
10-4252	CF286-02
10-4439	CF286-03

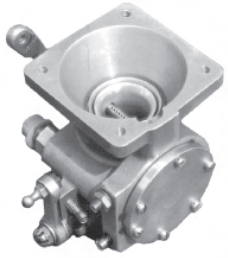
Continental Carburetors	
P/N	"Quick Kit" P/N
10-4457	CF286-02
10-4893	CF286-05
10-4893-1	CF286-05
10-4894	CF286-02
10-4894-1	CF286-02
10-4895	CF286-03
10-4895-1	CF286-03
10-5067	CF286-02
10-5082	CF286-02
10-5128	CF286-02
10-5192	CF286-05
10-5284	CF286-05
Lycoming Carburetors	
P/N	"Quick Kit" P/N
10-2827	CF286-07
10-2983	CF286-00
10-3103-1	CF286-00
10-3323	CF286-07
10-3346-1	CF286-02
10-3391-1	CF286-06
10-3565-1	CF286-02
10-3634	CF286-06
10-3678-12	CF286-04
10-3678-32	CF286-04
10-3729	CF286-02
10-3856	CF286-06

Lycoming Carburetors	
P/N	"Quick Kit" P/N
10-3856-1	CF286-06
10-3856-11	CF286-06
10-3856-12	CF286-06
10-3878	CF286-08
10-4057	CF286-09
10-4057-1	CF286-09
10-4164	CF286-08
10-4164-1	CF286-07
10-4404	CF286-09
10-4404-1	CF286-09
10-4910	CF286-04
10-4910-1	CF286-04
10-4953	CF286-00
10-4978-1	CF286-01
10-5009	CF286-04
10-5009N	CF286-04
10-5034	CF286-07
10-5042	CF286-00
10-5045	CF286-10
10-5045-1	CF286-10
10-5050	CF286-01
10-5054	CF286-09
10-5062	CF286-04
10-5092	CF286-10
10-5126	CF286-01
10-5135	CF286-04

Lycoming Carburetors	
P/N	"Quick Kit" P/N
10-5142	CF286-01
10-5180	CF286-10
10-5189	CF286-10
10-5193	CF286-08
10-5199	CF286-00
10-5206	CF286-10
10-5206-1	CF286-10
10-5206-11	CF286-10
10-5210	CF286-10
10-5217	CF286-04
10-5219	CF286-11
10-5220-E	CF286-01
10-5220	CF286-01
10-5221	CF286-12
10-5224	CF286-11
10-5227	CF286-12
10-5230	CF286-11
10-5235	CF286-11
10-5253	CF286-11
10-5255	CF286-11
10-5257	CF286-01
10-5267	CF286-01
10-5282	CF286-11
10-5283	CF286-11
10-5288	CF286-08
10-6014	CF286-11

EP

ELLISON CARBURETORS



Ellison variable venturi throttle body injectors provide reliable fuel metering for a variety of homebuilt engine applications. Features include uniform fuel distribution, inverted flight operation, few moving parts, instantaneous response, easy starting, light weight, and low maintenance. When ordering, specify: Engine make, engine model/HP and displacement and RPM.

MODEL	EFS-3A
Part Number	07-00959
Airflow Capacity*	
Fuel Regulation	SV Diaphragm Controlled
Application	>80 HP
Fuel Pressure Requirements**	1/2 - 3 PSI
Controllable Mixture	Yes
Fuel Fitting	3/8 Flared Tube
	$1,025.00

BENDIX STROMBERG NA-S3A1 CARBURETOR OVERHAUL PARTS FOR NA-S3A1 CARBURETOR

The NA-S3A1 carburetor is no longer in production. Only the parts listed are carried in stock. Others may be special ordered. Originally used on Cont. A-65, A-75, A-80, C-75, C-85 and C-90 engines.
Gasket & Ring Set (Incl. gaskets for under seat) P/N 07-02200 ..... $64.50
P-14222 Steel Needle and P-17247 seat ..... P/N 07-14222 ..... $149.50
Needle (Delrin) ..... P/N 2523047 ..... $147.75
Metering Jet (C-85) ..... P/N 07-00684 ..... $13.50
Metering Jet (A-65) ..... P/N 07-00685 ..... $12.50
Washer only - P5329 for Main Discharger Nozzle P/N 07-05329 ..... $2.70
Throttle Shaft (Ref. #34 in Manual) not available.

STROMBERG NA-S3A1 CARBURETOR OVERHAUL MANUAL

P/N 07-02400 ..... $15.75

MARVEL-SCHEBLER CARB GASKETS

MC16-A36 GASKET FUEL INLET FAA-PMA - Marvel-Schebler Fuel Inlet Screen Gaskets for many Carbureted Aircraft The copper gaskets should be changed when finger screens are inspected at each annual inspection.
P/N 07-01387 ..... $4.35

Marvel-Schebler / Facet Carburetor Models Eligible for Installation	Eligible Engine Model Series	
	Continental Model Series	Lycoming Model Series
MA-3, MA-3PA, MA-3A, MA-3SPA, MA-4SPA	A-65, A-75, C-85, C-90, O-200, C-125, C-145, O-300	O-235, O-290, O-320

MC16-A108 GASKET FUEL INLET FAA-PMA - Marvel-Schebler Fuel Inlet Screen Gaskets for many Carbureted Aircraft The copper gaskets should be changed when finger screens are inspected at each annual inspection.
P/N 07-01389 ..... $2.96

Marvel-Schebler / Facet Carburetor Models Eligible for Installation	Eligible Engine Model Series	
	Continental Model Series	Lycoming Model Series
MA-4-5, MA-4-5AA, MA-5, MA-6AA, HA-6	GO-300, O-470	O-340, O-360, O-435, O-540

MC16-A48 GASKET FUEL INLET FAA-PMA - Marvel-Schebler Fuel Inlet Screen Gaskets for many Carbureted Aircraft The copper gaskets should be changed when finger screens are inspected at each annual inspection. Sold as a 5 pack.
P/N 07-01388 ..... $11.75

Marvel-Schebler / Facet Carburetor Models Eligible for Installation	Eligible Engine Model Series	
	Continental Model Series	Lycoming Model Series
MA-4-5, MA-5AA, MA-4-5AA, MA-5, MA-6, MA-6AA, HA-6	GO-300, O-470	O-340, O-360, O-435, O-540

BING CARBURETORS

COMPLETE CARBURETORS – TYPE 54

To Order, Specify:
1. Model indicated by engine number 277, 377, 447, 503, or 532.
2. With intake silencer or Without intake silencer.
3. Single Carb or Dual Carb.
4. Hand Choke or Remote Choke.

Model # 54/36/2040
P/N 07-00303 ..... $358.00

TYPE 54 REBUILD KIT

#17 Top O Ring
#29 Bowl Gasket
#25 Hinge Pin
#21 Cable Grommet
#7 Air Screw O Ring
#26 Float Needle
#10 Sieve Sleeve (Screen)

P/N 07-00304 ..... $41.60

TYPE 54 FIX-IT KIT

#12 New Spring Cup
#11 Clip
#56 Jet Needle O Ring
P/N 07-00305 ..... $15.70

COMPLETE CARBURETORS – TYPE 84

To Order, Specify:
1. Model indicated by engine number 277, 377, 447, 503, or 532.
2. With intake silencer or Without intake silencer.
3. Single Carb or Dual Carb.
4. Hand Choke or Remote Choke.

Model # 84/32/3437 ..... P/N 07-00306 ..... $334.95

TYPE 84 REBUILD KIT

#17 Top O Ring
#29 Bowl Gasket
#25 Hinge Pin
#21 Cable Grommet
#7 Air Screw O Ring
#26 Float Needle
#10 Sieve Sleeve (Screen)

P/N 07-00307 ..... $38.50

ROTAX FLOAT & BOWL KIT

This float and bowl kit replaces a single float system. Includes clip float needle, float pin, float bracket, float chamber, and the float. P/N 261-010 ..... $99.85

BING CARBURETOR ACCESSORIES

Bing Remote Choke Kit (w/8' cable) ..... P/N 07-00308 ..... $49.95
Bing Remote Choke Kit (w/o cable) ..... P/N 07-00309 ..... $28.60
Bing Aircraft Parts manual ..... P/N 07-00310 ..... $13.95
Bing Plastic Crossover Vent Tube - 280mm long. Used on Bing type 84 carbs ..... P/N 07-01360 ..... $10.95

BING JUNCTION BLOCKS

Bing junction block for dual Carb linkage on any Rotax engine. Three gang outlet can be used dual Carbs or with three way oil injection and dual Carbs. Converts a single throttle line into as many as three lines.

3" Junction Block ..... P/N 15-05033 ..... $13.85
4" Junction Block ..... P/N 15-05450 ..... $11.50

CARBURETOR SYNCHRONIZATION

CARBMATE - Quick & easy synchronizing by direct comparison of a set of carbs / Fuel Injector throttle bodies. Range adjstable from 2 to 0,05cmHg per LED. Hook up 2 or 5 cylinder with the optional adapter kit.

Carbmate ..... P/N 07-01265 ..... $116.75
With Rotax 912/914 Accessory Kit ..... P/N 07-01891 ..... $194.75

SYNCHROMATE - Precise synchronizing by direct comparison of a set of carbs / Fuel Injection throttle bodies.Fixed resolution of 0, 5cmHg. Includes absolute vacuum & 'wireless' RPM measurement. Hook up 3 or 4 cylinders with the optional adapter kit.

Synchromate ..... PN 07-01266 ..... $249.00
W/ Rotax Accessory Kit ..... P/N 07-01892 ..... $287.95

4-CHANNEL ADAPTER KIT

Converts the SynchroMate or CarbMate into a 4 carb/throttle valve synchroniser. This easy-to-mount & easy-to-use kit allows connection of SynchroMate's or CarbMate 2 channels (tubes) to 4 carbs / throttle valves at once.

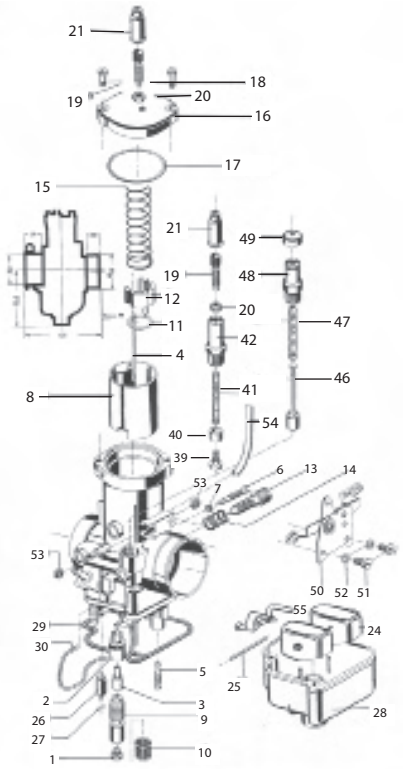
PN 07-01267 ..... $57.50

Accessories	Part No.	Price
4-Channek adapter kit TS-220	07-01267	$57.50
Rotax adapter w/ 2X6 ft hose TS-400	07-01889	$59.85
ROTAX ACCESSORY KIT TS-400 KIT	07-01890	$96.75
Rotax black nylon storage case TS-222	07-01893	$23.85
Rota rubber black holster TS-223	07-01894	$9.60
Rotax replacement 6 ft rubber hose	07-01895	$13.85

ROTAX THROTTLE SPRING

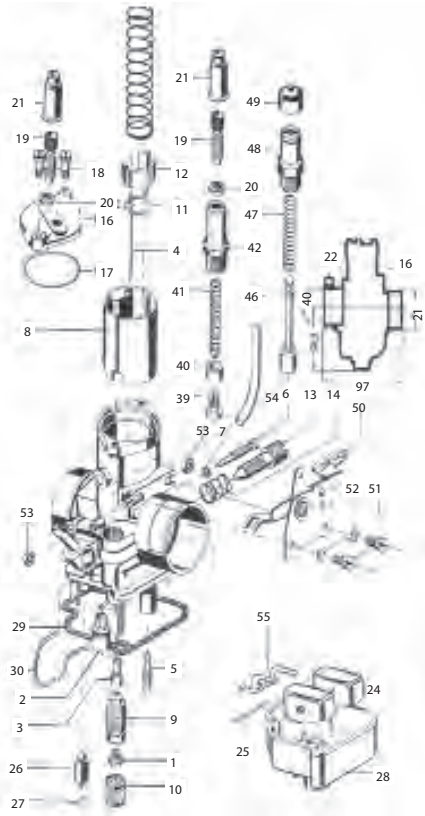
Alternate throttle return spring for Rotax 912/914 series engines. ..... P/N 08-06858 ..... $2.20

REPLACEMENT PARTS – TYPE 54



No.	Part No.	Description	Price
1	268-978-998	Main Jet	$8.50
2	251-554	Atomizer	$19.75
3	963-691-699	Needle Jet	$16.75
4	963-711-719	Jet Needle	$15.50
5	963-140-147	Idler Jet	$28.65
6	963-155	Air Screw	$10.95
7	831-710	O Ring	$3.65
8	963-679	Piston	$94.75
9	963-700	Mixing Tube	$17.50
10	261-625	Sieve Sleeve	$9.50
11	963-500	Clip	$8.50
12	827-347	New Style Spring Cup	$7.50
13	963-160	Mix Screw	$7.95
14	938-640	Spring	$2.95
15	938-655	Slide Spring	$6.50
16	963-720	Cover Plate	$21.65
17	831-450	O Ring	$7.50
18	241-430	Screw	$1.47
19	241-440	Adjuster	$4.75
20	942-541	Nut	$1.22
21	260-370	Grommet	$2.50
24	861-181	Indep. Float	$32.50
25	929-700	Pivot Pin	$2.03
26	261-705	Float Needle	$32.50
27	261-710	Clip	$1.53
28	261-010	Bowl Kit (bowl,24-27,55) *Float Needle Valve not included	$99.85
29	830-720	Gasket	$9.50
30	963-180	Bowl Clip	$7.95
39	963-740	Piston	$10.50
40	268-850	Sleeve	$4.35
41	661-050	Spring	$1.70
42	963-750	Housing	$12.75
46	268-847	Piston	$25.50
47	239-730	Spring	$4.35
48	261-770	Housing	$10.65
49	260-490	Rubber Cap	$5.60
50	261-755	Choke Lever	$26.85
51	240-791	Screw(51) & Washer(52)	$2.40
52	945-750		
53	261-200	Nut	$1.11
54	256-035	Vent Tube	$11.75
55	861-190	Float Arm	$18.50
56	831-715	Jet Needle O Ring	$1.39

REPLACEMENT PARTS – TYPE 84



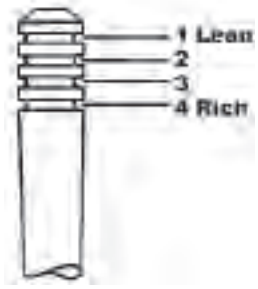
No.	Part No.	Description	Price
1	268-980	Main Jet 135	$9.50
2	261-692	Atomizer	$24.50
3	261-606	Needle Jet 262	$14.60
4	261-643	Jet Needle 8H1	$13.50
5	963-140	Idler Jet 50	$28.65
6	963-155	Air Screw	$10.95
7	831-710	O Ring	$3.65
8	261-635	Piston	$74.85
9	963-130	Jet Stock	$17.50
10	261-625	Screen	$9.50
11	261-650	Holding Plate	$7.50
12	227-635	Spring Cup	$6.95
13	963-160	Mix Screw	$7.95
14	938-640	Spring	$2.95
15	239-700	Slide Spring	$6.75
16	261-660	Cover	$21.70
17	261-670	O Ring	$8.95
18	241-430	Screw	$1.47
19	241-440	Adjust. Screw	$4.75
20	942-541	Nut	$1.22
21	260-370	Grommet	$2.50
24	963-192	Float	$49.90
25	929-700	Pin	$2.03
26	261-705	Float Needle	$32.50
27	261-710	Clip	$1.53
28	963-170	Bowl	$38.75
29	830-720	Gasket	$9.50
30	963-180	Bowl Clip	$7.95
39	963-740	Piston	$10.50
40	268-850	Sleeve	$4.35
41	661-050	Spring	$1.70
42	963-750	Housing	$12.75
46	268-847	Piston	$25.50
47	239-730	Spring	$4.35
48	261-770	Housing	$10.65
49	260-490	Rubber Cap	$5.60
50	261-750	Lever	$18.65
51	240-791	Screw(51) & Washer(52)	$2.40
52	945-750		
53	261-200	Nut	$1.11
54	256-033	Vent Tube	$11.75

EP

CARBURETOR JETTING CHART FOR ROTAX® UL ENGINES

Use this chart to identify part number you need, then use bottom chart to select correct part number to order.

ROTAX® ENGINE	$9.50 MAIN JET	$23.50 IDLER JET	$14.60 NEEDLE JET	$13.50 JET NEEDLE	CLIP POSITION	AIR SCREW
2771	148	45	2.72	8L2	2	1
2772	140	45	2.72	8L2	2	1
3771	165	45	2.70	8O2	2	.5
3772	155	45	2.70	8O2	2	.5
4471	165	45	2.70	15K2	2	.5
4472	155	45	2.70	15K2	2	.5
447DC1	135	50	2.70	6G1	3	1
447DC3	128	50	2.68	15K2	2	1
503SC1 Up to #3785371	180	45	2.74	8G2	3	.5
503SC2 Up to #3785371	158	45	2.74	6H2	3	.5
503SC1 From #3785372 Up	185	45	2.72	15K2	3	.5
503SC2 From #3785372 Up	165	45	2.70	15K2	3	.5
503DC1	158	45	2.74	8L2	1	.5
503DC3	148	45	2.68	11K2	2	1
532SC1	195	55	2.74	15K2	3	1
532SC3	170	55	2.74	15K2	3	1
532DC1	165	55	2.72	11G2	3	1
532DC3	145	55	2.68	15K2	3	1
5821	165	55	2.72	11G2	3	1
5823	145	55	2.68	15K2	3	1



1 = Without Rotax® intake silencer kit, with K&N RC1200 air filter, with or without Rotax® after muffler kit.

2 = With Rotax® intake silencer kit, with K&N CM0300 air filter, with or without Rotax® after muffler kit.

3 = With Rotax® dual intake silencer kit, with K&N RC1200 air filters, with or without Rotax® after muffler kit.

MAIN JET

125 = Part No. R268-978
128 = Part No. R261-085
130 = Part No. R268-979
135 = Part No. R268-980
138 = Part No. R268-998
140 = Part No. R268-981
145 = Part No. R268-982
148 = Part No. R268-995
150 = Part No. R268-983
155 = Part No. R268-984
158 = Part No. R268-996
160 = Part No. R268-985
162 = Part No. R268-990
165 = Part No. R268-986
170 = Part No. R268-987
175 = Part No. R268-988
180 = Part No. R268-989
185 = Part No. R261-080
190 = Part No. R261-084
195 = Part No. R268-992
200 = Part No. R261-082
205 = Part No. R261-087
220 = Part No. R261-081

IDLER JET

30 = Part No. R963-141
35 = Part No. R963-143
40 = Part No. R963-142
45 = Part No. R963-144
50 = Part No. R963-140
55 = Part No. R963-147
60 = Part No. R963-145
65 = Part No. R963-146

NEEDLE JET

2.62 = Part No. R261-606
2.68 = Part No. R963-691
2.70 = Part No. R963-698
2.72 = Part No. R963-697
2.74 = Part No. R963-699
2.76 = Part No. R963-693
2.78 = Part No. R963-696
2.80 = Part No. R963-695
2.82 = Part No. R963-694
2.94 = Part No. R961-022

JET NEEDLE

2H2 = Part No. R963-717
4E2 = Part No. R963-716
6G1 = Part No. R261-642
6H2 = Part No. R963-719
6P2 = Part No. 15-05029
8G2 = Part No. R963-712
8H1 = Part No. R261-643
8L2 = Part No. R963-714
8O2 = Part No. R963-711
1O = Part No. R961-045
11G2 = Part No. R961-043
11K2 = Part No. R961-044
15K2 = Part No. R963-718

NEEDLE CLIP

P/N 07-00693 ..... $8.50

Lower numbers indicate smaller jet size or opening.
Low numbers = lean.
High numbers = rich.
First needle number denotes mixture above half-throttle.
Needle letter denotes mixture below half-throttle.

UNIVERSAL FUEL PRESSURE REGULATOR

If the fuel pump is putting out more than 8 psi, this regulator can be used to keep the fuel pressure within safe limits and avoid the possibility of flooding.
• Pressure Range (psi): 4.5-9 • Regulator Style: Non-return • Regulator Location: Inline • Boost/Vacuum Reference Port: No Gauge Port: No • Mounting Bracket Included: Yes • Fittings Included: No • Rebuildable: Yes • Inlet Quantity: One • Inlet Attachment: Female threads • Inlet Size: 3/8 in. NPT • Outlet Quantity: Two • Outlet Attachment: Female threads • Outlet Size: 3/8 in. NPT • Regulator Material: Aluminum • Regulator Finish: Chrome plated. • Universal: Yes • Fuel Type: Gasoline • Regulator Usage: Carburetor.
P/N 15-08385 ..... $48.50

KWIK TUNE FOR ROTAX ENGINES

The handy Kwik Tune, a timesaving tool launched at Sun 'n Fun. Kwik Tune helps remove and reinstall the aircraft throttle cable, cover, spring, and slide in a Bing carburetor. P/N 08-05206 ..... $9.95

CARB CLEANING BRUSH

3/16" Tube, .005 Nylon, 2" BP, 6" OAL Can be used in the cleaning of internal bores and cylindrical cavities. Good for light duty jobs applying either wet or dry ingredients or cleansers. Sturdy twisted wire handles feature loop for easy grip.
P/N 15-08286 ..... $3.90

MIKUNI FUEL PUMP

Fuel Pump

Genuine Mikuni fuel pumps. Replace original parts on Rotax®, Hirth, & many other engines.
Single Pump ..... P/N 07-00777 ..... $32.50
Dual Pump ..... P/N 07-00778 ..... $28.90

Rebuild Kits

MIKUNI REBUILT KIT FOR SINGLE/DUAL FUEL PUMPS

Single Pump ..... P/N 07-01011 ..... $12.50
Dual Pump ..... P/N 07-01010 ..... $14.75

CARB FLANGE

VM38/200 Carb Flange. Bolt Centers: 2.875" 36-38 mm Carbs. ..... P/N 15-06241 ..... $29.90

BING FUEL PUMP

Bing High-capacity pump. Use when tank is more than 5' away or significantly lower than engine.
P/N 07-00779 ..... $235.95
Diaphragm Repair kit ..... P/N 07-01007 ..... $39.50
Bing Low Vol. fuel pump. ..... P/N 07-01008 ..... $116.85
Repair Kit for Low Vol pump. ..... P/N 07-01009 ..... $33.50

MIKUNI FLOAT CHAMBER PLUG

Mikuni Float Chamber Plug.
P/N 15-05548 ..... $4.85

BUZZ PUMP AC2001

A lightweight positive displacement, high volume, manual dual stroke auxiliary fuel pump for experimental aircraft. A capacity to operate aircraft engines as large as 300 HP
Specifications: • Weight: 2.4 lbs. •Aluminum billet housing construction • Double O-ring shaft seals • Triple precision bearing shaft support • Metal valves for long life • Pressure setting relief valve: 5-25psi • 90° stroke angle for comfortable operation • Housing dia.: 3.4" x 4.5" total length • Pump handle length: 4.5" • One input port and one output port @ 180° • 1/4-18 NPT tapped holes for fittings • Standard finish is clear anodize (light gray color) • Buzz Filter Sump AC2002, can bolt directly to the pump with an AN911-6D threaded nipple (not included) P/N 07-00654 ..... $625.00

BUZZ FILTER SUMP

A fuel filter/moisture sump for high-pressure applications, 50psi ideally suited for precision fuel injection systems. Can mount directly to the Buzz Pump AC2001 or to the fuselage or firewall. Easy to replace fuel filter. Specifications: • High-pressure application to 50psi • Weight: 13 oz. •Aluminum billet housing construction • Large O-ring sump seal • 1/4-18 NPT tapped holes for fittings • CG-12 Fram filter with easy to replace insertion chamfer • Standard finish is clear anodize (light gray color) • Curtis drain fitting •*AN fittings not included. P/N 07-00655 ..... $398.00

EP

FUEL INJECTION SERVOS – FLOW DIVIDERS

PRECISION AIRMOTIVE

Precision Airmotive now feature's competitively priced OEM factory overhauled RSA Fuel Injection Servo's & Flow Dividers. As the OEM manufacturer, they ensure 'out of the box' performance of these overhaul units by completing both full flow dynamic and static analysis, verifying fuel delivery performance from idle to full throttle. Since 1988, Precision Airmotive has set the industry standard for fuel injection systems by supporting the general aviation industry with time tested quality products that meet the highest standards.
Note: Aircraft Spruce carries Precision Airmotive replacement parts and accessories, contact us for pricing and availability.

FUEL INJECTION SERVOS

Model No.	Part No.	Engine	Airframe	New Exchange		Rebuilt Exchange		Overhaul Exchange		Core
RSA-5AD1	2576536-2	IO-360-L2A	Cesna 172	07-02770	$3,306.00	07-02772	$1,663.00	07-02773	$1,383.00	$1,000.00
	2524054-11	IO-360/540 & various	Mooney 201& others	07-02775	$3,233.00	07-02776	$1,565.00	07-02777	$1,383.00	$1,000.00
	2576544-3	IO-540-AB1A5	Cessna182	07-02778	$3,434.00	07-02779	$1,565.00	07-02780	$1,383.00	$1,000.00
	2524450-9	IO-360-AB1/C1C/C1C6	Piper, Arrow, Cherokee, Lake Buccaneer	07-02781	$3,233.00	07-02782	$1,565.00	07-02783	$1,383.00	$1,000.00
RSA-10ED1	2524500-9	LTIO-540-F2BD/J2B/J2BD TIO-540-F2BD/J2B/J2BD	Piper Navajo PA-31-325 Chieftan PA-31-350	07-02784	$4,359.00	07-02785	$1,772.00	07-02786	$1,524.00	$1,000.00
	2524273-12	IO-540-K1A5/K1A5D/K1G5	Piper Saratoga/ Lance	07-02787	$4,318.00	07-02788	$1,772.00	07-02789	$1,524.00	$1,000.00
	2576562-4	TIO-540-AJ1A	Cessna T206	07-02791	$4,601.00	07-02792	$1,772.00	07-02793	$1,524.00	$1,000.00
	2576630-4	IO-540-AE1A5	Robinson R44	07-02794	$4,697.00	07-02795	$1,772.00	07-02796	$1,524.00	$1,000.00

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FLOW DIVIDERS

Part No.	Engine	Configuration	New Exchange		Rebuilt Exchange		Overhaul Exchange	
2576564-1	IO-320, IO-360, IO-540	4psi spring, w/ vent tube	07-02797	$926.00	07-02798	$318.00	07-02984	$264.95
2524232-2	IO-320, IO-360, IO-540	2 psi spring, no vent tube	07-02799	$898.00	07-02801	$318.00	07-02983	$264.95
2576526-1	IO-540	4 psi spring, no vent tube	07-02802	$966.00	07-02981	$338.00	07-02803	$264.95

FOR TURBO APPLICATIONS, UNLISTED SERVOS, & FLOW DIVIDERS CALL OR EMAIL AIRCRAFT SPRUCE FOR PRICING.

SILVERHAWK EX FUEL INJECTION SYSTEMS

The Silver Hawk EX, non-certified Fuel Injection System is proven technology drawn from decades of fuel metering engineering by Precision Airmotive. Manufactured as experimental, the new Silver Hawk kit provides experimental pilots with precise, dependable, and reliable fuel metering. Just what you'd excpect from Precision Airmotive.
At a price that will make you soar. Manufactured using the highest quality materials and components, the Silver Hawk EX features a machined finish with clear coat anodize. Designed for these major engine manufacturer applications: Lycoming 320, 360, & 540 series; Continental 470 series; Superior and others.

- Specifically engineered and built to meet the demands of aviations growing experimental segment.
- Precision Airmotive appointed worldwide network of factory authorized product support centers
- Backed by a Precision warranty program.

Model No.	Description	Part No.	Price
EX320-1	Application: Lycoming O-320 and IO-320 engines with 150/160 HP	07-00773	$2,638.00
EX360-1	Application: Lycoming O-360 and IO-360 parallel valve engines with 160/180 HP Superior O-360 and IO-360 parallel valve engines with 180 HP	07-00774	$2,685.00
EX360-2	Application: Lycoming O-360 and IO-360 angle valve engines with 200 HP	07-00775	$2,685.00
EX540-1	Application: Lycoming O-540 and IO-540 parallel valve engines with 235-260 HP Continental O-470 engines	07-00776	$2,679.00

PRECISION O-RING INLET FITTINGS FOR SILVERHAWK EX

Silver Hawk Model Number	Inlet Part Number	Part No.	Price
EX-5VA1	951789 Fitting	07-02977	$3.35
EX-5VA1	953541-10 Filter	07-02978	$0.73
EX-10VA1 (300 HP)	951790 Fitting	07-02979	$4.80
EX-10VA1 (300 HP)	951392 Filter	07-02980	$2.80

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

LYCOMING & CONTINENTAL FUEL PUMPS

Proven to be a trouble-free mechanical pressure pump. Original equipment on numerous airframe installations and adaptable to most applications with one of 3 dual diaphragm types. Overboard vent of this design provides operating assurance throughout all flights.

Engine Type	Engine Model No.	Our P/N	Lycoming Part No.	Our Price
Lycoming	O-235, O-290, O-320, O-340, O-360, HO-360, GO-480, O-540, VO-540	07-00704	LW15472 41271 (old 40295) 4-6 PSI	$398.00 (Core $100.00)
	IO-320, IO-360, AIO-360, HIO-360, IVO-360, IO-540, IGO-540, IO-720	07-00705	LW15473 41234 (old 40296) 25-30 PSI	$368.00 (Core $100.00)
Continental	Can be used on A/C who formerly used medium pressure 15 PSI (PS5)	41272 (old 40595) 25-30 PSI	LW15473	$368.00 (Core $100.00)
	C-75(-12,-12F),C-90 (-8,-8F,-12,12F)	05-19045	AF40695	$506.00 (Core $100.00)
	C-90 (-16F), 0-200	05-19050	AF631391	$897.00

Lycoming Fuel Pump Gasket For LW15473 ..... P/N 60096 ..... $1.50

Adapt pump thread to AN fittings using AC Fuel pump adapters:
P/N 75505..... Fitting .... $47.50 or P/N 75505-1 ..... Fitting & O-Ring $47.50

LYCOMING/AC FUEL PUMP FITTINGS

P/N 07-00783

P/N 07-00782

These fittings are designed to fit mechanical fuel pumps used on Lycoming engines. These fittings feature 3/8" AN flare outlets for connection to aircraft hoses, and are available in straight, 45° and 90° angle versions. Note: These fittings are not certified.

P/N 07-00780

P/N 07-00781

Straight fitting .. P/N 07-00780 ..... $3.30
45° fitting..... P/N 07-00781 ..... $9.85
90° fitting.....P/N07-00782..... $7.90
Tee fitting w/1/8" pipe thread tapping for fuel pressure.....P/N 07-00783 ..... $16.50

LYCOMING FUEL PUMP GASKET FOR LW15473

Gasket for Lycoming Gasket LW15473.
P/N 60096..... $1.50

ACS FUEL PUMP COOLING SHROUD

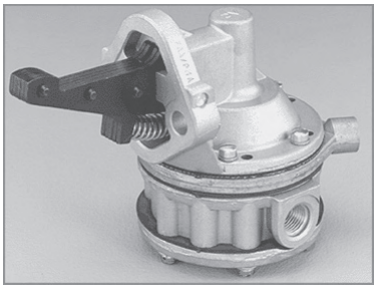
Designed to keep the fuel pump cooler in the hot engine compartments, and reduce the risk of fuel vapor lock. The cooling shroud will fit carbureted or fuel injector Lycoming engines using a diaphragm style pump. Made in the U.S.A. P/N 08-06097 ..... $63.85

FACET POSI-FLO SOLID STATE FUEL PUMPS

• Fuel Compatibility: All models of the Facet Posi-Flo Pumps are compatible with gasoline, diesel, biodiesel, blended alcohol fuels and fuel additives.
• Reliability: Proven on thousands of original equipment applications. No bearings, electrical contacts, or diaphragms to wear out or fatigue. Lasts four to five times longer than many other electric pumps.
• Easy to Install-Easy to Service: Two bolt installation plus the small size makes installation easy. For best results, mount the pump close to the fluid or fuel tank and below the liquid level.
• Eliminates Vapor Lock: When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes.
Not FAA Approved.

Model	Volts	PSI Max-Min	Fitting Size	Lift Min. Dry	Check Valve	Positive Shut Off Valve	Int.-Ext. Fuel Filter	Part No.	Price
60300	12	4-2.5	1/8-27 INT	20	Y	N	EXT.	05-06862	$34.90
60301	12	5-3.5	1/8-27 INT	30	Y	N	EXT.	05-06863	$34.90
60302	12	7-5	1/8-27 INT	32	Y	N	EXT.	05-06864	$34.90

TEMPEST LYCOMING & TCM FUEL PUMPS



The Early Model Lycoming Fuel Pump

The New Continental Pump

OVERHAULED LYCOMING FUEL PUMPS
All internal parts are replaced with new certified parts. The actuating arms are magnetic particle test inspected; cast parts are inspected for wear, corrosion and cracks. Bboth the older laminated and newer channel style fuel pumps are overhauled for normally aspirated, pressure carburetor, and fuel injected systems.
Note: Customer will need to provide core for overhaul in the event our supplier does not have cores available to overhaul.

MMO	Description	P/N	Price
Overhauled Lycoming & TCM Diaphragm Fuel Pumps			
40174	Fuel Pump - Overhauled	05-02530	$253.95
40296	Fuel Pump - Overhauled	05-02531	$228.95
40595	Fuel Pump - Overhauled	05-19015	$259.95
41234	Fuel Pump - Overhauled	05-02532	$229.95
41270	Fuel Pump - Overhauled	05-02533	$229.95
41271	Fuel Pump - Overhauled	05-02534	$229.95
41272	Fuel Pump - Overhauled	05-02536	$262.95
41452	Fuel Pump - Overhauled	05-02537	$259.95
41812	Fuel Pump - Overhauled	05-02539	$264.95
75246	Fuel Pump - Overhauled	05-02540	$229.95
75247	Fuel Pump - Overhauled	05-02541	$228.95
103396-01	Fuel Pump - Overhauled	05-02542	$625.00
103586-01	Fuel Pump - Overhauled	05-02543	$625.00
LW14282	Fuel Pump - Overhauled	05-02544	$258.95
LW15399	Fuel Pump - Overhauled	08-15399	$229.00
LW15472	Fuel Pump - Overhauled	05-19000	$218.95
LW15473	Fuel Pump - Overhauled	05-19010	$218.95
LW16335	Fuel Pump - Overhauled	05-02545	$229.95
LW16775	Fuel Pump - Overhauled	05-02546	$259.95
LW16947	Fuel Pump - Overhauled	05-02547	$263.95
R00253-1	Fuel Pump - Overhauled	05-02549	$619.00
R00253-2	Fuel Pump - Overhauled	05-02551	$619.00
R00253-501	Fuel Pump - Overhauled	05-02552	$613.00
R00253-502	Fuel Pump - Overhauled	05-02554	$613.00
AF1572	Fuel Pump - Overhauled	05-02555-1	$218.95
AF15473	Fuel Pump - Overhauled	05-02556-1	$218.95
New Lycoming Diaphragm Fuel Pumps			
AF15472	Fuel Pump - New	05-02555	$278.95
AF15473	Fuel Pump - New	05-02556	$278.95
Overhauled TCM Centurion Fuel Pumps			
4036/9076	Fuel Pump - Overhauled	05-19030	$519.00
6861	Fuel Pump - Overhauled	05-19035	$527.00
9051/9867	Fuel Pump - Overhauled	05-19025	$551.00
40585	Fuel Pump - Overhauled	05-02557	$529.00
40695	Fuel Pump - Overhauled	05-02558	$514.00
AF40585	Fuel Pump - Overhauled	05-02562	$499.00
AF40695	Fuel Pump - Overhauled	05-19045	$506.00
AF631391	Fuel Pump - Overhauled	05-19050	$897.00
New TCM Centurion Fuel Pumps			
AF6561	Screen Kit	05-02560	$88.90
AF16335	Fuel Pump - New	05-02561	$347.00
AF40585	Fuel Pump - New	05-02564	$873.00
AF40695	Fuel Pump - New	05-02565	$874.00
AF631391	Fuel Pump - New	05-19050	$897.00

$100.00 CORE CHARGE ON TEMPEST OVERHAULED FUEL PUMPS.

EP

FACET FUEL PUMPS

FACET SOLID STATE ELECTRIC FUEL PUMPS

These pumps measure less than 3" in any direction and weigh only 18 oz. Fuel is supplied as soon as the ignition is turned on so the engine will start faster at colder temps. Built-in pressure relief prevents flooding and assures fast re-starts on hottest days. The all-steel plated case is water tight. Mounts with two bolts. For best results, mount the pump close to the fuel tank and below the liquid level.

The tank is self-priming to 12" to 36" Lift min dry. Standard 12 V models require only 1 amp at max. delivery. Many models are available, but these are the ones recommended by Rutan Aircraft Factory, Stoddard Hamilton and many other aircraft designers. All of the pumps shown feature the all nylon valve and plunger as specified by Rutan Aircraft in the Canard Pusher newsletter.

Facet No.	Volts	PSI Max-Min	GPH	Fitting Size	Lift Min. Dry	Check Valve	Part No.	Price
40100N	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-10771	$37.95
40101N	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-10772	$37.95
40102N	12	4.0-1.5	25	1/8 - 27 INT	12"	N	05-10773	$37.95
40103N	12	10.0-7.0	38	1/8 - 27 INT	12"	N	05-10774	$39.95
40104	12	4.0-1.5	25	1/8 - 27 INT	12"	N	05-00799	$36.85
40105	12	4.5-3.0	30	1/8 - 27 INT	12"	N	40105	$36.50
40106	12	7.0-4.0	32	1/8 - 27 INT	12"	N	40106	$36.65
40108	12	6.0-4.5	32	3/8 FLARE	12"	N	40108	$44.75
40154	24	6.0-4.5	32	3/8 FLARE	12"	N	40154	$44.50
40163	12	2.5-1.5	17	1/8 - 27 INT	24"	Y	40163	$46.50
40164	24	6.0-4.5	32	1/8 - 27 INT	12"	N	40164	$42.85
40171	12	3.5-2.0	15	1/8 - 27 INT	12"	Y	40171	$48.50
40178	12	3.5-2.0	15	1/8 - 27 INT	36"	Y	05-10781	$47.75
40185	12	11.5-9.0	32	1/8 - 27 INT	36"	Y	05-10782	$48.50
40241	12	3.5-2.0	15	Female Flare	36"	Y	05-10788	$51.75
40243	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-10864	$37.50
40272	12	11.5-9.0	32	1/8 - 27 INT	36"	Y	05-10791	$49.55
40288	12	4.5-3.0	30	1/8 - 27 INT	36"	Y	05-06860	$38.50
40289	12	7.0 - 4.0	30	1/8 - 27 INT	36"	Y	05-06861	$38.50
40300	12	11.5 - 9	30	1/8 - 27 INT	36"	Y	05-10802	$51.75
FEP-12SV	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-00812	$47.75
FEP-42SV	12	4.0-1.5	25	1/8 - 27 INT	12"	N	05-00809	$32.85

FACET DURA-LIFT FUEL PUMPS

• Application: Refrigeration trucks, marine generator sets, diesel filtration systems, industrial applications, and other diesel lift applications. These pumps are rated for diesel fuel, gasoline, blended alcohol fuels, and fuel additives.

• Solid State Reliability: Proven on many original equipment applications No electrical contacts. No bearings or diaphragms to wear out or fatigue. Endurance life almost doubles that of our nearest competitor.

• Easy to Install-Easy to Service: Two bolt mounting makes installations easy. Nothing to adjust. The pump is self-priming to 120 inches (3.0 m). Vertical mounting is preferred to assure maintenance of rated pressures. The transparent housing allows for visual capability to monitor the cleanliness of the stainless steel filter.

• Eliminates Vapor Lock: When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes.

Facet No.	Volts	PSI Max-Min	GPH	Fitting Size	Lift Min. Dry	Check Valve	Part No.	Price
40295	12	11.5-9.0	33	1/8-27 Int.	60"	Y	05-10888	$99.75
40222	12	11.5-9.0	33	1/8-27 Int.	120"	Y	05-10884	$86.75
40285	12	7.0-4.0	33	1/8-27 Int.	120"	Y	05-10886	$88.75
40303	12	6.25-4.25	33	1/8-27 Int.	60"	Y	05-10889	$99.75

FACET GOLD-FLO INTERRUPTER TYPE PUMPS

Fuel Compatibility: All models of the Facet High Performance Gold-Flo Solid State Fuel Pumps are compatible with gasoline, diesel, biodiesel, blended alcohol fuels and fuel additives.

Reliability: The new Gold-Flo Solid State Fuel Pump is an enhanced version of our Interrupter model. It has Solid State circuitry and will meet or exceed all performance specifications and is totally interchangeable. (These pumps have demonstrated an endurance life almost double that of the nearest competitor, according to our test data).

Easy to Install-Easy to Service: Two bolt mounting makes installations easy. Nothing to adjust. For best results, mount the pump close to the fuel tank and below the fuel level. The pump is self-priming to 24 inches vertical fuel lift. Vertical mounting is preferred to assure maintenance of rated pressures. An installation kit is available for replacement applications. The only service normally required is a simple cleaning of the filter and fuel inlet cavity.

Eliminates Vapor Lock: When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes.

Facet No.	Volts	PSI Max-Min	GPH	Fitting Size	Lift Min. Dry	Check Valve	Part No.	Price
40007E	12	5.5-4.0	36	1/4"-18 Int.	24"	N	05-10842	$82.75
40131E	12	5.5-4.0	34	1/8"-27 Int.	24"	N	480545	$76.90
476088	24	5.0-4.0	32	1/8"-27 Int.	24"	N	476088	$74.85
480543	12	8.0-6.0	45	1/4"-18 Ext.	24"	N	480543	$93.95
476087E	12	5.5-4.0	36	1/8"-27 Int.	24"	N	05-10832	$74.75
476459E	12	8.0-6.5	32	1/8"-27 Int.	24"	N	05-10833	$74.75
477060E	12	4.0-2.75	34	1/8"-27 Int.	24"	N	05-10835	$74.75
478360E	12	5.5-4.0	36	1/8"-27 Int.	24"	N	478360	$75.85
480534E	12	8.0-6.0	45	1/4"-18 Int.	24"	N	05-00802	$80.75
480564E	24	5.0-4.0	32	1/4"-18 Int.	24"	N	05-01003	$97.50
FEP59SV	12	8.0-6.5	32	1/8"-27 Int.	24"	N	05-10871	$77.75
FEP60SV	12	4.0-2.75	34	1/8"-27 Int.	24"	N	05-10872	$77.75
FEP87SV	12	8.0-6.5	32	1/8"-27 Int.	24"	N	47-06087	$77.50

FACET POSI-FLO SOLID STATE FUEL PUMPS

• Fuel Compatibility: All models of the Facet Posi-Flo Pumps are compatible with gasoline, diesel, biodiesel, blended alcohol fuels and fuel additives.

• Reliability: Proven on thousands of original equipment applications. No bearings, electrical contacts, or diaphragms to wear out or fatigue. Lasts four to five times longer than many other electric pumps.

• Easy to Install-Easy to Service:Two bolt installation plus the small size makes installation easy. For best results, mount the pump close to the fluid or fuel tank and below the liquid level.

• Eliminates Vapor Lock: When properly installed on most vehicles a constant, smooth, dependable supply of fuel under pressure is assured in the hottest weather or in high altitudes.

Facet No.	Volts	PSI Max-Min	GPH	Fitting Size	Lift Min. Dry	Check Valve	Part No.	Price
60106	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-10856	$29.95
60107	12	10.0-7.0	40	1/8 - 27 INT	12"	N	05-10857	$29.95
60243	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-10878	$32.50
60244	132	10.0-7.0	40	1/8 - 27 INT	12"	N	05-10879	$33.70
60245	12	4.0-1.5	23	1/8 - 27 INT	12"	N	05-10880	$32.50
60300	12	4.0-2.5	20	1/8 - 27 INT	50"	Y	05-06862	$34.90
60301	12	5.0-3.5	30	1/8 - 27 INT	50"	Y	05-06863	$34.90
60302	12	7.0-5.0	32	1/8 - 27 INT	50"	Y	05-06864	$34.90
60303	12	10.0-7.0	40	1/8 - 27 INT	50"	Y	05-10881	$36.50
60304	12	2.0-1.0	15	1/8 - 27 INT	24"	Y	05-10882	$36.50
FEP04SV	12	4.0-1.5	23	1/8 - 27 INT	12"	N	05-01250	$32.95
FEP06SV	12	7.0-4.0	32	1/8 - 27 INT	12"	N	05-10883	$32.60

AEROQUIP FITTING FOR FACET PUMPS

On the recommendation of Rutan Aircraft Factory, we now stock Aeroquip #2071-6-6S fitting which is a steel elbow with a swivel nut which fits the 37 flares on the Facet 40108 and 40154 fuel pumps. This Aeroquip fitting makes installation of the pumps easy & economical. P/N 04-05800 ..... $4.95

EP

WELDON FUEL PUMPS

WELDON PMA'D FUEL PUMPS

Weldon's strong commitment to excellence with Made-in-America quality has evolved into a comprehensive line of fuel and hydraulic pumps for general aviation, military aircraft, ground support vehicles and UAVs.

Aircraft Make & Model	Weldon Part No.	OEM Part No.	Description	Part Number	Price
Casa	4049-A	AC520068A	Prop Unfeathering	08-10717	$2,089.00
Casa	C4033-E	AC520068A	Prop Unfeathering	08-10718	$2,061.00
Cessna	18000-A	C291504-0101	Fuel Boost	08-07082	$730.00
Cessna 172R, 172S, 182S/T, T182T	18002-B8	5100-00-4	Fuel Boost	08-10719	$1,191.00
Cessna 182	A8160-D	A8160-D	Fuel Boost	08-10720	$921.00
Cessna 206H	A10056-B	A10056-B	Fuel Boost	08-10721	$1,021.00
Cessna 310, 320, 340 & 400 Series	18013-B	4140-00-153	Fuel Boost	08-10722	$793.00
Cessna 340A, 414, 421B	8150-B	8150-B	Fuel Transfer	08-10723	$1,034.00
Cessna 441	C4033-G	9910344-3	Prop Unfeathering	08-10724	$2,595.00
Cessna Single-Engine & 337 Aircraft	18000-B	C291504-0201	Fuel Boost	08-07083	$729.00
Cessna T182	A8185-B	A8185-B	Fuel Boost	08-10725	$916.00
Cessna T206H	A10055-B	A10055-B	Fuel Boost	08-10726	$1,021.00
CPAC (Commander) 112, 112B	A8120-C	A8120-C	Fuel Boost	08-10727	$1,017.00
Daher Socata TBM 700	2022-B	6097727225	Fuel Boost	08-10728	$1,853.00
Diamond DA-40, DA-42	18002-B	18002-B	Fuel Boost/Transfer	08-10729	$836.00
Enstrom F28-A, 280	A8110-G	A8110-G	Fuel Boost	08-10730	$933.00
Enstrom F-28C, 280C, F-28F, 280F, 280FX	A10019-D	A10019-D	Fuel Boost	08-10731	$2,799.00
Enstrom F-28C, 280C, F-28F, 280F, 280FX	A10019-E	A10019-E	Fuel Boost	08-10732	$2,007.00
Gippsland GA8 AirVan	8172-A	8172-A	Fuel Boost	08-10733	$1,145.00
Gippsland GA8 AirVan	A8172-A	A8172-A	Fuel Boost	08-10734	$1,175.00
Mooney M20J (SN 24-0001 thru 24-2999)	A8163-A	A8163-A	Fuel Boost	07-00785	$943.00
Mooney M20J (SN 24-3000 and up)	A8163-B	A8163-B	Fuel Boost	08-10735	$1,017.00
Mooney M20K Serial #25-001 to 25-0999	10054-A	10054-A	Fuel Boost	08-10736	$1,034.00
Mooney M20K Serial #25-1000 & up	10054-B	10054-B	Fuel Boost	08-10737	$1,034.00
Mooney M20M	A10051-D	A10051-D	Fuel Boost	08-10738	$1,092.00
Mooney M20R, M205	A8152-B	A8152-B	Fuel Boost	08-10739	$923.00
Moravan (Zin Z-143L)	A8150-B1	A8150-B1	Fuel Boost	08-10740	$989.00
Moravan (Zin Z-242L)	D8100-F	D8100-F	Fuel Boost	08-10741	$1,022.00
PA-23-250, PA-23-235	B8001-G	33959-3	Fuel Boost	08-10742	$907.00
PA-23-250, PA-23-236, PA-23-160	B8001-H	33959-2	Fuel Boost	08-10743	$906.00
PA-28R-180, PA-28R-200, PA28R-201, PA28R-201T, PA-28R-201, PA-28RT-201T	8120-G	481-780	Fuel Boost	08-08120	$839.00
PA-28R-201	B8120-G	461-758	Fuel Boost	08-10744	$954.00
PA-30, PA-39	C8100-J	763-518	Fuel Boost	08-10745	$1,849.00
PA-31-325, PA-31-300	A10014-D44	42113-6	Fuel Boost	08-10746	$1,940.00
PA-31-350	A10014-D	53050-2	Fuel Boost	08-10747	$1,940.00
PA-31-350, T-1020, PA-31-325, PA-31-300	A10014-D40	42113-5	Fuel Boost	08-10748	$1,888.00
PA-31P	B10007-D	48885-2	Fuel Boost	08-10749	$2,074.00
PA-32-301T, PA32R-301T, PA-32RT-300T	10080-B	481-807	Fuel Boost	08-10750	$1,551.00
PA-32R-301T Serial #'s 3257001 & up	10080-D	461-750	Fuel Boost	08-10751	$1,551.00
Pilatus B/N BN2A-2, 2A-3, BN2A-20, 21, BN2B-20, 21	A10050-D	354301024	Fuel Boost	08-10752	$1,066.00
Robinson R44	19001-B	19001-B	Fuel Boost	08-10753	$898.00
Lake (Revo Inc.) Mooney M20E, M20F, M20J S/N thru 24-2999 Mooney M20J S/N thru 24-2999, M20K S/N thru 25-0999	18020-A	18020-A	Fuel Boost	05-11890	$793.00

WELDON HIGH PRESSURE ELECTRIC FUEL PUMP

The 8150 series high pressure electric fuel pump is a positive displacement cammed vane type used primarily in airborne applications. It features a low pressure relief valve and integral bypass valve. Applications include in-line fuel transfer priming of fuel-injected engines & emergency fuel pump. A permanent-magnet, explosion resistant motor is rated for continuous duty. These self-priming, lightweight (2.6 lbs. max.) pumps have been used for over 15 years by major aircraft manufacturers.

Model No.	Flow GPH	Output	Fluid	Power	Core	Price Ea
8150-B Overhauled*	35 Min.	4.5 PSI	Av Gas	24V DC @ 2A	$400.00	$828.00
* Customer overhauled only. O/H unit comes with 8130.						
New Fuel Pumps Not FAA approved. For Experimental Aircraft Only!						
8163-A New	35 Min.	21 PSI	Av Gas MIL-G-5572	14V DC @ 5A	---	$943.00
8170-A New	35 Min.	4.5 PSI	Gasoline	12V DC @ 4A	---	$897.00

NEW PMA'D WELDON 18000 FUEL PUMPS

Weldon 18000-A (14Volt) Replaces: Cessna C291504-0101, Dukes 4140-00-17
Weldon 18000-B (28Volt) Replaces: Cessna C291504-0201, Dukes 4140-00-15
18000-A Weldon Pump 14V .....P/N 08-07082 .....$730.00
18000-A Weldon Pump 28V .....P/N 08-07083 .....$729.00

MOUNTING BRACKET FOR WELDON FUEL PUMPS

This T-bolt quick release band clamp with mounting bracket fits all Weldon fuel pumps with 2-1/2" diameter motors. Made from certified aerospace quality stainless steel, this bracket offers secure holding power under extreme vibration. The band clamp rotates within the mounting foot to offer easy access to the quick release latch for a variety of mounting positions. P/N 05-00021 .....$41.50 ea.

EP

FUEL PUMPS

CJ AVIATION NEW AND NEW EXCHANGE FUEL PUMPS

New FAA–PMA Direct Replacement Fuel Boost Pumps for Cessna, Beech, Diamond, Navion, Maule, Mooney, Lake and Diamond Aircraft. These certified drop in replacement pumps have a new improved check valve and more efficient motor. There are no Service Bulletins which eliminates the 10 year overhaul requirements. Pumps are warrantied for two years or 300 hours. Exchange pumps are in stock and CJ Aviation, Inc. is willing to drop ship on behalf of Aircraft Spruce for quicker delivery. All pumps come with 8130's and technical support from the manufacturer.

NEW OUTRIGHT FUEL PUMPS

Model No.	OEM No.	Description	Part No.	Price
4140-00-15CJ	4140-00-15	4140-00-15CJ CJ Fuel Pump New	05-07962	$735.00
4140-00-17CJ	4140-00-17	4140-00-17CJ CJ Fuel Pump New	05-07974	$735.00
5100-00-9CJ	5100-00-9	5100-00-9CJ CJ Fuel Pump New	05-10550	$797.00

NEW EXCHANGE FUEL PUMPS

Model No.	OEM No.	Description	Part No.	Price
1184-00-3CJ	1184-00-3	1184-00-3CJ CJ Fuel Pump New Exchange	05-07965	$1,250.00
1296-00-1NVCJ	1296-00-1NV	1296-00-1NVCJ CJ Fuel Pump New Exchange	05-07966	$1,250.00
1471-00-3CJ	1471-00-3	1471-00-3CJ CJ Fuel Pump New Exchange	05-07967	$1,250.00
4140-00-153CJ	4140-00-153	4140-00-153CJ CJ Fuel Pump New Exchange	05-07983	$1,250.00
4140-00-15CJ	4140-00-15	4140-00-15CJ CJ Fuel Pump New Exchange	05-07969	$685.00
4140-00-17CJ	4140-00-17	4140-00-17CJ CJ Fuel Pump New Exchange	05-07976	$685.00
4140-00-17NCJ	4140-00-17N	4140-00-17NCJ CJ Fuel Pump New Exchange	05-07977	$1,250.00
4140-00-19ACJ	4140-00-19A	4140-00-19ACJ CJ Fuel Pump New Exchange	05-07978	$1,250.00
4140-00-21ACJ	4140-00-21A	4140-00-21ACJ CJ Fuel Pump New Exchange	05-07979	$1,250.00
4140-00-39NVCJ	4140-00-39NV	4140-00-39NVCJ CJ Fuel Pump New Exchange	05-07981	$1,250.00
4140-00-400CJ	4140-00-400	4140-00-400CJ CJ Fuel Pump New Exchange	05-07986	$1,250.00
4140-00-401CJ	4140-00-401	4140-00-401CJ CJ Fuel Pump New Exchange	05-07987	$1,250.00
4140-00-57CJ	4140-00-57	4140-00-57CJ CJ Fuel Pump New Exchange	05-07982	$1,250.00
4140-00-7NVCJ	4140-00-7NV	4140-00-7NVCJ CJ Fuel Pump New Exchange	05-07968	$1,250.00
4258-00-15NVCJ	4258-00-15NV	4258-00-15NVCJ CJ Fuel Pump New Exchange	05-07988	$1,250.00
4404-00-7NVCJ	4404-00-7NV	4404-00-7NVCJ CJ Fuel Pump New Exchange	05-07989	$1,250.00
4613-00-3NVCJ	4613-00-3NV	4613-00-3NVCJ CJ Fuel Pump New Exchange	05-07991	$1,250.00
4613-00-5NVCJ	4613-00-5NV	4613-00-5NVCJ CJ Fuel Pump New Exchange	05-07992	$1,250.00
5100-00-4CJ	5100-00-4	5100-00-4CJ CJ Fuel Pump New Exchange	05-07993	$1,250.00
5100-00-9CJ	5100-00-9	5100-00-9CJ CJ Fuel Pump New Exchange	05-07994	$685.00

NOTE: A CORE CHARGE APPLIES TO ALL EXCHANGE FUEL PUMPS. REFER TO OUR WEBSITE FOR DETAILS ON THE CJ AVIATION CORE POLICY.

OVERHAULED EXCHANGE FUEL PUMPS

Model No.	Description	Part No.	Price
1184-00-3	1184-00-3 Fuel Pump O/H Exchange	05-07997	$1,050.00
1296-00-1NV	1296-00-1NV Fuel Pump O/H Exchange	05-07999	$1,050.00
1471-00-3	1471-00-3 Fuel Pump O/H Exchange	05-08002	$1,050.00
1500-00-31	1500-00-31 Fuel Pump O/H Exchange	05-08003	$1,050.00
4140-00-11NV	4140-00-11NV Fuel Pump O/H Exchange	05-08007	$1,050.00
4140-00-135	4140-00-135 Fuel Pump O/H Exchange	05-08018	$1,050.00
4140-00-15	4140-00-15 Fuel Pump O/H Exchange	05-08009	$1,050.00
4140-00-17	4140-00-17 Fuel Pump O/H Exchange	05-08011	$1,050.00
4140-00-184	4140-00-184 Fuel Pump O/H Exchange	05-08019	$1,050.00
4140-00-19B	4140-00-19B Fuel Pump O/H Exchange	05-08012	$1,050.00
4140-00-1NV	4140-00-1NV Fuel Pump O/H Exchange	05-08006	$1,050.00
4140-00-21A	4140-00-21A Fuel Pump O/H Exchange	05-08013	$1,050.00
4140-00-218	4140-00-218 Fuel Pump O/H Exchange	05-08021	$1,050.00
4140-00-400	4140-00-400 Fuel Pump O/H Exchange	05-08022	$1,050.00
4140-00-47	4140-00-47 Fuel Pump O/H Exchange	05-08016	$1,050.00
4140-00-57	4140-00-57 Fuel Pump O/H Exchange	05-08017	$1,050.00
4404-00-7NV	4404-00-7NV Fuel Pump O/H Exchange	05-08023	$1,050.00
4613-00-3NV	4613-00-3NV Fuel Pump O/H Exchange	05-08024	$1,050.00
4140-00-39NV	4140-00-39NV Fuel Pump O/H Exchange	05-08014	$1,050.00

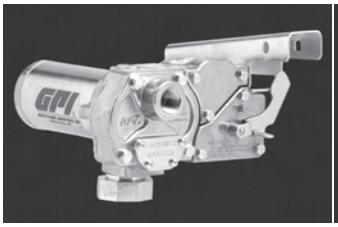
WELDON PUMP OVERHAUL/EXCHANGES

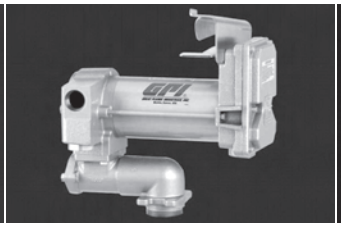
JC LIP SEAL					
Model	Part No.	Price	Model	Part No.	Price
8150-B	05-10594	$750.00	8163-A	05-10598	$750.00
8159-A	05-10596	$750.00	8163-B	05-10600	$750.00
JC FACE SEAL					
Model	Part No.	Price	Model	Part No.	Price
A8150-B	05-10577	$795.00	A8163-B	05-10581	$795.00
A8150-B1	07-00784	$828.00	A8164-A	05-10583	$795.00
A8163-A	07-00785	$943.00			
J LIP SEAL					
Model	Part No.	Price	Model	Part No.	Price
33959-2	05-10551	$725.00	A8110-F	05-10564	$725.00
33959-3	05-10554	$725.00	A8110-G	05-10566	$725.00
481-780	05-10556	$725.00	B8001-G	05-10568	$725.00
8120-G	05-10558	$725.00	B8001-H	05-10570	$725.00
8120-H	05-10560	$725.00	C8100-E	05-10572	$725.00
A8110-C	05-10562	$725.00	C8100-F	05-10575	$725.00
J FACE SEAL					
Model	Part No.	Price	Model	Part No.	Price
461-758	05-10585	$750.00	B8120-G	05-10589	$750.00
B8110-G	05-10587	$750.00	B8120-H	05-10582	$695.00
JA SERIES					
Model	Part No.	Price	Model	Part No.	Price
A8120-C	Call For Quote				

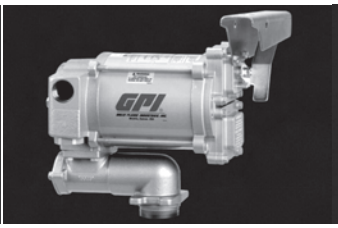
EP

AVIATION REFUELING PUMPS

These aviation pumps are only intended to be groundbased or vehicle mounted. Do not use or mount in or on the aircraft. For use with aviation gasoline (AVGAS 100LL) and kerosene grade (JET A). User should consult NFPA 407 Standard for aircraft fuel servicing for safety requirements during ground fuel servicing of aircraft using liquid petroleum fuels. This product has no actual or implied compliance with this standard. Warranty is 2 years.


M-150S-AV-PO


M-3025-CB-AV-PO

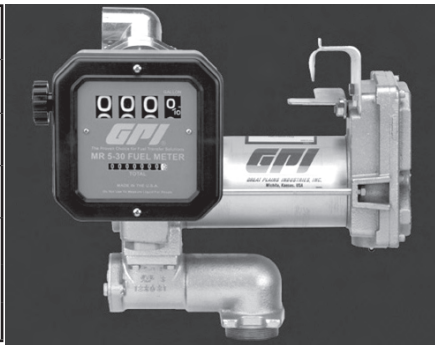

M-3120-AV-PO

M-3130-AV-PO

PUMPS				
Pumps Model No.	M-150S-AV-PO	M-3025-CB-AV-PO	M-3120-AV-PO	M-3130-AV-PO
Part No.	08-07463	08-07464	08-07465	08-07466
Price	$399.00	$703.00	$661.00	$1,107.00
Volt	12-Volt	12-Volt	115-Volt	115/230-Volt
GPM	15 GPM / 57 LPM	25 GPM / 95 LPM	20 GPM / 75 LPM	30 GPM / 114 LPM
Approvals	Motor is U.L. Listed to U.S. and Canadian Standards			
Use With	Gasoline, Gasoline/Ethanol blends at levels designated as "gasohol" (E10 maximum), diesel, kerosene and aviation fuels gasoline (AVGAS 100LL) and kerosene grade (JET A).			

METERS			
Meter Model No. & Part No. Price	08-07464	MR-5-30-G8N, Aviation	$703.00
	08-07468	MR-5-30-L8N, Aviation	$229.00
Flow Range	5-30 GPM (19-114 LPM)		
Use with	Gasoline, Gasoline/Ethanol blends at levels designated as "gasohol" (E10 maximum), diesel, kerosene, aviation gasoline (AVGAS 100LL) and kerosene grade (JET A).		

COMBOS				
Model No. & Part No. Price	Calibrated in Gallons	08-07469	M-3025CB-AV-PO / MR 5-30-G8N	$956.00
		08-07470	M-3120-AV-PO / MR 5-30-G8N	$902.00
		08-07471	M-3130-AV-PO / MR 5-30-G8N	$1,328.00
	Calibrated in Liters	Special Order. Please request a quote.	M-3025CB-AV-PO / MR 5-30-L8N	Special Order. Please request a quote.
			M-3120-AV-PO / MR 5-30-L8N	
			M-3130-AV-PO / MR 5-30-L8N	



EP

FUEL PUMPS

ANDAIR FUEL BOOST PUMPS

The high pressure fuel boost pump from Andair features a brushless motor which is light weight, powerful, and reliable. The pump components are D2 tool steel providing unequalled wear characteristics. The model PX375-40A-5-25 boost pump is furnished with a BLX-150 controller that is needed to drive the pump. This pump was designed to meet the requirements of an engine such as the Lycoming IO-360 at full power. The model XP375-40A-5 has none of the pressure relief or bypass features of the boost pump and is designed for a smoke system or transfer fuel from tank to tank. This pump is furnished with a BLX-165 controller. Features: * Integral bypass and pressure relief valve. * 11-14V DC, 6 amps max * Flow: 16 GPH @ 25 PSI * Open Flow: 56 GPH @ 8 PSI * Pressure drop in bypass mode @ 36 GPH: <0.5 PSI * No flow max pressure: 26 PSI * Weight: 460g (16.23 oz) * Soft Start - Continuous Duty * Self Priming to 10ft (3M) Head through 3/8" tube. * Aerospace Grade Aluminium Body. * AN-6 male fittings. * Mounting bracket included.

Fuel Boost Pump ..... P/N 07-01334 ..... $848.00
Smoke Transfer Pump ..... P/N 07-01335 ..... $610.00

ANDAIR FUEL PUMP KITS

Engine Size	Description	Andair PN	Contents	Part No.	Price
IO320-IO360	Pump Kit	PK-360	Filter + Pump (PX375-TC+FX375-MK)	07-01352	$847.00
	Filter Pump Kit	FPK-360	Filter+ Pump+ Bracket (FX375-MK + PX375-40A-5-25-F + KX10)	07-01353	$838.00
	Fuel System Deluxe	FS-DE-LUX-360	Filter+Pump+ Bracket Valve + Gascolator + Bulkhead fitting (FX375-MK + PX375-40A-5-25-F + KX10 + FS20x7-T + GAS375-F + BH375)	07-01354	$1,254.00
	Fuel System Super Deluxe	FS-S/DE-LUX-360	Pump + Bracket + 2 x Gascolator Valve + Bulkhead fitting (PX375-40A-5-25-F + KX10 + 2off GAS375-F + FS20x7-T + BH375)	07-01355	$1,593.00
Engine Size	Description	Andair PN	Contents	PN	Price
	Filter Pump Kit	FPK-540	Filter + Pump (PX500-TC + FX375-MK)	07-01357	$849.00
	Fuel System Deluxe	FS-DE-LUX-540	Filter+ Pump+ Bracket Valve + Gascolator + Bulkhead fitting (FX375-MK + PX375-40A-5-28-F + KX10 + FS20x7-T + GAS375-F + BH375)	07-01358	$1,272.00
	Fuel System Super Deluxe	FS-S/DE-LUX-540	Pump + Bracket + 2 x Gascolator Valve + Bulkhead fitting (PX375-40A-5-28-F + KX10 + 2off GAS375-F + FS20x7-T + BH375)	07-01359	$1,437.00

DUKES OVERHAULED FUEL PUMPS

Dukes Aerospace Fuel Pumps are available on an overhaul exchange basis. All fuel pumps are overhauled in accordance with factory specifications and contain 100% OEM parts.
Attention: There will be an additional Core Charge per order.

Model No.	Part No.	Price
1184-00-1	08-07563	$970.00
1184-00-3	08-07564	$970.00
1296-00-1	08-07565	$970.00
1458-00-1	08-07567	$994.00
1471-00-3	08-07568	$970.00
1499-00-21NV	08-07569	$1,295.00
1500-00-35	08-07571	$970.00
1500-00-38	08-07572	$970.00
1515-00-1	08-07573	$970.00
1521-00-1	08-07574	$970.00
1816-00-1NV	08-07575	$1,295.00
4140-00-153	08-07576	$1,295.00
4140-0-15	08-07577	$1,295.00
4140-00-19A	08-07578	$1,532.00
4140-00-1	08-07579	$1,532.00
4140-0-218	08-07580	$1,532.00
4140-00-21A	08-07581	$1,532.00
4140-00-39	08-07582	$1,295.00
4140-00-57	08-07583	$1,295.00
4150-00-1	08-07584	$1,295.00
4258-00-15	08-07585	$970.00
4404-00-404	08-07586	$1,295.00
4404-00-7	08-07588	$1,297.00
4613-00-5NV	08-07589	$1,295.00
5100-00-19	08-07590	$1,295.00
5217-00-3	08-07592	$1,295.00
1499-00-19	08-07593	$1,296.00
1500-00-42	08-07594	$1,295.00
4140-00-7	08-07595	$1,295.00
4140-00-11	08-07596	$1,295.00
4140-00-17	08-07597	$1,532.00
4140-00-67	08-07598	$1,295.00
4140-00-198	08-07599	$1,295.00
4140-00-311	08-07600	$1,295.00
4258-00-21	08-07601	$1,295.00
4634-00	08-07602	$1,295.00
5100-00-9	08-07603	$1,296.00
5288-00-1	08-07604	$1,295.00
5367-00-1	08-07605	$1,532.00
5596-00-1	08-07606	$1,295.00

FUEL SERVO O-RING

951789 - 1/4" Dia., Round, Blue Rubber
P/N 07-951789 ..... $2.45
953541-10 - 1/2" Dia., Round, Black Rubber
P/N 07-953451-10 ..... $0.53

WALBRO FUEL PUMP

This WIP-11 include a bracket to mount the pumps in place. This bracket is bolted to a solid surface with two 8-32 coarse thread bolts.
P/N 15-06246 ..... $22.00

EP

FUEL PUMPS – SPRAYING SYSTEMS

ELECTRIC FUEL TRANSFER PUMPS

Heavy Duty Industrial Grade Fuel pumps designed for every day use in: Agricultural, Construction, Automotive, Industrial, Racing & Boating applications. Rain & Weather proof for tough outdoor use Lightweight, yet strong non corroding Aluminum Die cast construction. With a geared pump design using precision sintered metal gears and sintered geared construction makes this pump more tolerant than plastic gear designs; in addition to offering tremendous suction & minimal noise. This design is such that the motor cannot be switched on without removing nozzle from the nozzle hanger. The low current draw increases usage life from a single charge of battery on DC pump model UL & cUL listed Motor. Duty Cycle: 30 Minutes On / 30 Minutes Off. Recommended Use: Gasoline, Diesel.

12V Electric Gas Pump FPM-12.....P/N 08-07610 .....$424.00
115V Electric Gas Pump FPM-11525.....P/N 08-07609 .....$459.00

ROTARY FUEL PUMP

Industry Standard for Rotary pumps; these are by far the heaviest duty, for severe outdoor use in extreme weather conditions. Deliver media with a head / lift up to 20' solid cast iron construction, fully CNC machined to close tolerances. Pump handle rotates a high quality sintered powder metal 3 vane rotor inside a highly finished pumping chamber. The graphite veins are self lubricating & non wearing with high quality graphite seal that allows the pump to be used with a wide variety of fluids including diesel with up to 15% ethanol blend. This pump has self priming operation with discharge up to 38 LPM (10 GPM). Also supplied complete with 2" Bung, Telescopic Suction Tube with Strainer for use with 15 gallons (50 litre) – 55 gallons (205 litre) barrels. DO NOT USE With Water Based Media. .....P/N 08-07611 .....$270.95

SAFETY FLOW FUEL PUMP & CONTAINER

Quickly safely and easily fill your fuels or chemicals with this 5 gpm rotary pump & 7 gallon container. Ideal for Airlines, boaters, Racecars, factories, job shops, auto repair, labs, farms, etc. Pumps: Diesel, gasoline, oil, alcohols, E85, ethanol, nitro, antifreeze, transmission fluid. Tether safety clamp makes for safe transfer of liquids even with one person. Static line included for additional safety. Cart not included.....P/N 08-07612 .....$269.00

FM RATED & GROUNDED FUEL PUMPS

Stainless steel and carbon steel FM rated pumps. 30% of all calls are for FM rated hand pumps. These are ideal for lower volume users comes with safety straps and clamps.

Carbon Chrome
P/N 08-07613.....$240.95

Stainless Steel FM Approved
P/N 08-07614.....$375.00

BUNG NUT DRUM WRENCH

Non-Sparking Aluminum Bung Nut Wrench: Use to install or remove large and small drum plugs and install faucets. Accommodates most common bungs also, tightens or loosens drum rings.

P/N 08-07615 ..... $15.85

BIG R POWER SPRAYING SYSTEMS

BIGR: All steel construction for durability with large rubber feet for stability and ships fully assembled. Also utilizes a circuit breaker instead of fuses; protecting the operator and eliminating the need to search for fuses. Pressure sensitive switch shuts off pump when you stop spraying, preventing bursting hoses and product separation or damage. This feature can be by-passed with our pressure activated re-circulator. Multiple power options available including: 115vac includes standard 9' power cord, 230vac includes standard 9' power cord, 12vdc includes standard 25' power cord w/ battery clamps.

In the Box:
1 - spray control gun with comfort grip handle and quick connect, open flow fittings
1 - 18" straight brass wand section
1 - 18" curved brass wand section
1 - 1gal. per minute brass fan tip
1 - adjustable brass fan nozzle
100' safety yellow 3/8" chemical resistant hose with quick connect open flow fittings, chemical resistant diaphragm and seals in pump and reel.

115 VAC.....P/N 08-07617 .....$381.00
230 VAC.....P/N 08-07618 .....$1,207.00
12VDC.....P/N 08-07619 .....$1,192.00

7GPM SIPHON PUMP FOR DRUMS

7 gpm bellow action siphon pump includes 4ft. discharge hose and 2" bung, fits 15-30-55 gallon barrels. Pump,Siphon,7 GPM Drum Pump, Siphon, 500 SSU, Outlet Size 1 Inch Outside Diameter, Suction Design Tube, Suction Pipe Size Outside Diameter 1 In, Adapter Type 2 Inch NPT Bung, Fits 15, 30 and 55 Gallon Drums, Piston Polyethylene, Pump Body Material Polyethylene, Max Temp 140 Degree F, Includes Discharge Tubing, Discharge Tubing Material Corrugated Flexible Polyethylene, Internal Parts Material Polyethylene, Overall Length 45 3/4 In, Self Priming, Suction Tube 34 Inches Long.

P/N 08-07616 ..... $12.50

DOUBLE DIAPHRAGM LEVER PUMP

Steel and aluminum, telescoping intake tube from 22" to 39". 3/4" inlet and outlet delivers approx. 1 gal. per ten strokes. Longwearing. Double-action piston pump for durability. Ideal for dispensing gasoline, diesel fuel, and similar petroleum products.

P/N 08-07622 ..... $199.95

PISTON PUMP FOR AGGRESSIVE CHEMICALS

Stainless Steel & PTFE Hand Pump 22oz. Stroke T-Handle Pump Stainless and PTFE hand pump ideal for transferring your aggressive chemicals. Includes 2" bung 41" long body,1-1/2" outer body diameter. P/N 08-07623 ..... $98.75

STAINLESS STEEL ROTARY PUMP

10 GPM Stainless Steel rotary drum pump 40 inch intake tube.Drum Pump, Rotary Chemical, 5000 SSU, Curved Discharge Spout, Outlet Size 3/4 Inch UNF, Suction Design 3 Piece Tube, Tube Material 304 SS, Adapter Type 1 1/2 x 2 Inch NPT Bung, Fits 15, 30 and 55 Gallon Drums, Pump Body Material 304 SS, PTFE Seal, Max Temp 140 Degree F, Includes Suction Tube, GPM 10 @135 RPM, Discharge Tubing Material 304 SS, Internal Parts Material PTFE and 304 SS, Inlet Size 1 Inch FNPT, Overall Length 53 In, Self Priming, Suction Tube 40 Inches Long 14lbs. ship wt.

P/N 08-07624 .....$495.00

EP

OVERHAULED BENDIX MAGNETOS BY KELLY AEROSPACE

Core charges apply to all Overhauled Magnetos.

Model	Part Number	Price
10-51360-29	10-51360-29	$598.00
10-51360-26	10-51360-26R	$598.00
10-682555-11R DU	10-682555-11R	$1,590.00
10-51360-37R	10-51360-37R	$719.00
10-682555-14R	10-68255-14	$1,525.00
10-349370-4R	10-349370-4R	$673.00
10-349310-1R	10-349310-1R	$511.00
10-682560-11R	07-02976	$1,511.00
10-51360-27	10-51360-27R	$585.00
10-51365-39R	10-51365-39R	$687.00
10-79020-10R	10-79020-10R	$598.00
10-163050-9R	10-16305-9	$523.00
10-51365-47R	10-51365-47R	$668.00
10-51360-28R	10-51360-28R	$588.00
10-600614-1	07-01799	$568.00
10-163005-11R	07-01523	$523.00
10-163005-3R	07-01524	$523.00
10-163010-10R	07-01525	$523.00
10-163010-15R	07-01526	$523.00
10-163010-2R	07-01527	$523.00
10-163010-5R	07-01528	$529.00
10-163010-6R	07-01529	$523.00
10-163010-7R	07-01530	$523.00
10-163015-3R	07-01531	$529.00
10-163020-2R	07-01532	$523.00
10-163020-3R	07-01533	$523.00
10-163020-4R	07-01534	$523.00
10-163030-1R	07-01535	$523.00
10-163045-1R	07-01536	$523.00
10-163045-2R	07-01537	$523.00
10-163045-3R	07-01538	$524.00
10-163045-6R	07-01539	$523.00
10-163045-8R	07-01540	$523.00
10-163050-1R	07-01541	$523.00
10-163050-2R	07-01542	$523.00
10-163050-6R	07-01543	$523.00
10-163050-7R	07-01544	$523.00
10-163050-8R	07-01545	$523.00
10-163055-1R	07-01546	$522.00
10-163060-1R	07-01547	$523.00
10-163060-2R	07-01548	$523.00
10-349220-4R	07-01549	$511.00
10-349220-5R	07-01550	$511.00
10-349235-3R	07-01551	$511.00
10-349260-3R	07-01553	$511.00
10-349260-4R	07-01554	$511.00
10-349260-6DR	07-01555	$317.95
10-349260-6R	07-01556	$509.00
10-349260-7R	07-01557	$511.00
10-349270-7R	07-01558	$511.00
10-349285-1R	07-01559	$511.00
10-349285-5R	07-01560	$511.00
10-349285-7R	07-01561	$511.00
10-349290-17R	07-01562	$511.00
10-349290-1DR	07-01563	$511.00
10-349290-1R	07-01564	$511.00
10-349290-2DR	07-01565	$317.95
10-349290-2R	07-01566	$511.00
10-349290-3DR	07-01567	$511.00
10-3492920-3R	07-01568	$511.00
10-349290-4R	07-01569	$511.00
10-349290-9R	07-01570	$511.00

Model	Part Number	Price
10-349300-4DR	07-01571	$795.00
10-349300-4R	07-01572	$1,141.00
10-349305-1DR	07-01573	$317.95
10-349305-1R	07-01574	$511.00
10-349305-2R	07-01575	$511.00
10-349305-3R	07-01576	$511.00
10-349305-4R	07-01577	$511.00
10-349310-10R	07-01578	$511.00
10-349310-11R	07-01579	$511.00
10-349310-14R	07-01580	$511.00
10-349310-1DR	07-01581	$317.95
10-349310-2R	07-01582	$511.00
10-349310-3R	07-01583	$511.00
10-349310-4DR	07-01584	$317.95
10-349310-4R	07-01585	$511.00
10-349310-5R	07-01586	$511.00
10-349310-8DR	07-01587	$465.95
10-349310-8R	07-01588	$511.00
10-349320-4DR	07-01589	$661.00
10-349320-4R	07-01590	$1,141.00
10-349350-4R	07-01591	$649.00
10-349350-5R	07-01592	$649.00
10-349350-6R	07-01593	$597.00
10-349350-7R	07-01594	$597.00
10-349365-1R	07-01596	$597.00
10-349365-3R	07-01597	$559.00
10-349365-6R	07-01598	$584.00
10-349365-9DR	07-01599	$519.00
10-349365-9R	07-02512	$582.00
10-349365-10R	07-01595	$597.00
10-349370-1R	07-01602	$584.00
10-349370-2R	07-01603	$584.00
10-349370-4DR	07-01604	$545.00
10-349370-5R	07-01606	$584.00
10-349370-6R	07-01607	$584.00
10-349420-1R	07-02516	$582.00
10-349420-2R	07-02517	$582.00
10-349460-1DR	07-01609	$519.00
10-349460-1R	07-02518	$582.00
10-349460-2R	07-02519	$582.00
10-349490-1DR	07-01610	$520.00
10-349490-1R	07-02520	$582.00
10-349490-2R	07-01611	$584.00
10-349490-3R	07-01612	$584.00
10-349500-1R	07-01613	$1,236.00
10-349510-1DR	07-01614	$519.00
10-349510-2R	07-01615	$567.00
10-349510-3R	07-01616	$567.00
10-349520-1DR	07-01617	$795.00
10-349520-1R	07-01618	$1,236.00
10-382555-10R DU	07-01619	$1,314.00
10-382555-11R DU	07-01620	$1,211.00
10-382555-12R DU	07-01621	$1,211.00
10-382555-13R DU	07-01622	$1,211.00
10-382555-14R DU	07-01623	$1,218.00
10-382555-151R D	07-01624	$1,218.00
10-382555-15R DU	07-01625	$1,218.00
10-382555-16R DU	07-01626	$1,218.00
10-382560-11R DU	07-01627	$1,217.00
10-382560-13R DU	07-01629	$1,217.00
10-382605-10R DU	07-01630	$1,217.00
10-382605-13R DU	07-01631	$1,217.00

Model	Part Number	Price
10-382610-11R DU	07-01632	$1,217.00
10-382610-13R DU	07-01633	$1,217.00
10-382610-14R DU	07-01634	$1,217.00
10-382610-221R DU	07-01635	$1,217.00
10-382620-11R DU	07-01636	$1,218.00
10-382910-13R DU	07-01637	$1,498.00
10-382910-18R DU	07-01638	$1,217.00
10-382920-11R DU	07-01639	$1,218.00
10-51360-41R	07-01640	$584.00
10-51360-45R	07-01642	$584.00
10-51360-46R	07-01643	$584.00
10-51360-47R	07-01644	$584.00
10-51360-48R	07-01645	$584.00
10-51360-54R	07-01646	$584.00
10-51360-55R	07-01647	$584.00
10-51360-58R	07-01648	$585.00
.10-51365-32R	07-01650	$584.00
10-51365-33R	07-01651	$584.00
10-51365-34R	07-01652	$632.00
10-51365-35R	07-01653	$584.00
10-51365-40R	07-01654	$631.00
10-51365-43R	07-01655	$631.00
10-51365-44R	07-01656	$584.00
10-51365-45R	07-01657	$584.00
10-51365-46R	07-01658	$584.00
10-51365-48R	07-01659	$632.00
10-51365-57R	07-01660	$632.00
10-51365-9R	07-01661	$584.00
10-52350-19R	07-01662	$632.00
10-52350-20R	07-01663	$584.00
10-52350-22R	07-01664	$584.00
10-52350-23R	07-01665	$632.00
10-500556-3R	07-02548	$568.00
10-500556-101R	07-02546	$568.00
10-500556-103R	07-02547	$568.00
10-600606-1R	07-02587	$548.00
10-600616-3R	07-02590	$548.00
10-600616-7R	07-02591	$548.00
10-600616-9R	10-05522	$589.00
10-600646-1R	07-02593	$548.00
10-600646-2R	07-02597	$582.00
10-600646-201R	07-02594	$559.00
10-600656-1R	07-02598	$582.00
10-682555-13R DU	07-01667	$1,438.00
10-682555-15R DU	07-01669	$1,438.00
10-682555-16R DU	07-02607	$1,449.00
10-682555-141R DU	07-02601	$1,449.00
10-682555-151R DU	07-02605	$1,449.00
10-682560-13R DU	07-01671	$1,446.00
10-682605-13R DU	07-01672	$1,474.00
10-682610-13R DU	07-01673	$1,474.00
10-682620-11R	07-01674	$1,694.00
10-682620-11R DU	07-02612	$1,669.00
10-682910-13R DU	07-01675	$1,528.00
10-682910-18R DU	07-01676	$1,528.00
10-79020-10R	10-79020-10	$598.00
10-79020-118R	07-01677	$797.00
10-79020-119R	07-01678	$691.00
10-79050-16R	07-01679	$584.00
10-79020-17R	07-01681	$584.00
10-79020-18R	07-01682	$584.00
10-79020-19R	07-01683	$584.00

OVERHAULED BENDIX MAGNETOS

A Bendix magneto is a specific type of aircraft magneto manufactured by Teledyne Continental Motors. There are multiple models of Bendix magnetos, and they can be infinitely overhauled. As a result, the Bendix magneto is more often overhauled than bought new, allowing for efficient, cost-effective use.

Description	Part No.	Price
10-163010-10 Quality O/H Bendix Mag	07-01949	$675.00
10-163020-4 Quality O/H Bendix Mag	07-01950	$675.00
10-163060-1r Quality O/H Bendix Mag	07-02392	$675.00
10-349290-9 Quality O/H Bendix Mag	07-01955	$675.00
10-349220-4 Quality O/H Bendix Mag	07-01939	$675.00
10-349220-5 Quality O/H Bendix Mag	07-01935	$675.00
10-349260-6 Quality O/H Bendix Mag	07-01936	$675.00
10-349260-7 Quality O/H Bendix Mag	07-01938	$675.00
10-349285-1 Quality O/H Bendix Mag	07-01975	$675.00
10-349290-17 Quality O/H Bendix Mag	07-01952	$675.00
10-349290-1 Quality O/H Bendix Mag	07-01933	$669.00
10-349290-2 Quality O/H Bendix Mag	07-01953	$675.00
10-349290-3 Quality O/H Bendix Mag	07-01976	$675.00
10-349290-4 Quality O/H Bendix Mag	07-01954	$675.00
10-349290-9r Quality O/H Bendix Mag	07-02399	$675.00
10-349293-1 Quality O/H Bendix Mag	07-01977	$675.00
10-349300-4 Quality O/H Bendix Mag	07-01946	$1,164.00
10-349305-1 Quality O/H Bendix Mag	07-01941	$675.00
10-349305-3 Quality O/H Bendix Mag	07-01978	$675.00
10-349310-14 Quality O/H Bendix Mag	07-01979	$675.00
10-349310-1 Quality O/H Bendix Mag	07-01932	$675.00
10-349310-1r Quality O/H Bendix Mag	07-02401	$675.00
10-349310-2 Quality O/H Bendix Mag	07-01980	$675.00
10-349310-4r Quality O/H Bendix Mag	07-02402	$675.00
10-349310-8 Quality O/H Bendix Mag	07-01981	$675.00
10-349320-4 Quality O/H Bendix Mag	07-01982	$1,125.00
10-349350-4 Quality O/H Bendix Mag	07-01931	$675.00
10-349350-5 Quality O/H Bendix Mag	07-01930	$675.00
10-349350-6r Quality O/H Bendix Mag	07-02403	$675.00
10-349350-7 Quality O/H Bendix Mag	07-01989	$675.00
10-349365-10 Quality O/H Bendix Mag	07-01957	$675.00
10-349365-1 Quality O/H Bendix Mag	07-01990	$675.00
10-349365-3 Quality O/H Bendix Mag	07-01942	$675.00
10-349365-6 Quality O/H Bendix Mag	07-01958	$675.00
10-349370-1 Quality O/H Bendix Mag	07-01960	$675.00
10-349370-4 Quality O/H Bendix Mag	07-01934	$663.00
10-349420-1 Quality O/H Bendix Mag	07-01961	$675.00
10-349420-2 Quality O/H Bendix Mag	07-01962	$753.00
10-349460-1 Quality O/H Bendix Mag	07-01963	$753.00
10-349460-2 Quality O/H Bendix Mag	07-01991	$753.00
10-349490-2 Quality O/H Bendix Mag	07-01964	$675.00
10-349520-1 Quality O/H Bendix Mag	07-01992	$1,125.00
10-382555-14 Quality O/H Bendix Mag	07-01947	$1,555.00
10-500514-1 Quality O/H Bendix Mag	07-01973	$675.00
10-500516-2 Quality O/H Bendix Mag	07-01974	$675.00
10-500516-3r Quality O/H Bendix Mag	07-02418	$675.00
10-500556-101 Quality O/H Bendix Mag	07-01993	$675.00
10-500566-101 Quality O/H Bendix Mag	07-01926	$733.00
10-500556-103 Quality O/H Bendix Mag	07-01927	$732.00
10-500556-1 Quality O/H Bendix Mag	07-01929	$675.00
10-500556-203 Quality O/H Bendix Mag	07-01983	$776.00
10-500556-3 Quality O/H Bendix Mag	07-01924	$655.00
10-500556-901r Quality O/H Bendix Mag	07-02424	$675.00
10-51306-26 Quality O/H Bendix Mag	07-01984	$675.00
10-51360-27R Quality O/H Bendix Mag	07-02549	$675.00
10-51360-28R Quality O/H Bendix Mag	07-02550	$675.00
10-51360-29R Quality O/H Bendix Mag	07-02551	$675.00
10-51360-37 Quality O/H Bendix Mag	07-01943	$675.00
10-51360-41R Quality O/H Bendix Mag	07-02553	$675.00
10-51360-45R Quality O/H Bendix Mag	07-02556	$675.00
10-51360-47R Quality O/H Bendix Mag	07-02557	$675.00
10-51360-47R Quality O/H Bendix Mag	07-02558	$675.00
10-51360-48R Quality O/H Bendix Mag	07-02560	$675.00
10-51360-54R Quality O/H Bendix Mag	07-02561	$675.00
10-51360-55R Quality O/H Bendix Mag	07-02562	$675.00
10-51360-58R Quality O/H Bendix Mag	07-02563	$675.00
10-51365-32 Quality O/H Bendix Mag	07-01965	$675.00
10-51365-33 Quality O/H Bendix Mag	07-01966	$675.00
10-51365-34 Quality O/H Bendix Mag	07-01967	$675.00
10-51365-43 Quality O/H Bendix Mag	07-01968	$675.00

Description	Part No.	Price
10-51365-46 Quality O/H Bendix Mag	07-01969	$582.00
10-51365-47 Quality O/H Bendix Mag	07-01944	$675.00
10-51365-57 Quality O/H Bendix Mag	07-01970	$675.00
10-51365-9R Quality O/H Bendix Mag	07-02581	$675.00
10-51365-35R Quality O/H Bendix Mag	07-02567	$675.00
10-51365-39R Quality O/H Bendix Mag	07-02569	$675.00
10-51365-40R Quality O/H Bendix Mag	07-02570	$675.00
10-51365-44R Quality O/H Bendix Mag	07-02573	$675.00
10-51365-45R Quality O/H Bendix Mag	07-02574	$675.00
10-51365-48R Quality O/H Bendix Mag	07-02579	$675.00
10-52350-19R Quality O/H Bendix Mag	07-02582	$675.00
10-52350-20R Quality O/H Bendix Mag	07-02583	$675.00
10-52350-22R Quality O/H Bendix Mag	07-02584	$675.00
10-52350-23R Quality O/H Bendix Mag	07-02586	$675.00
10-600606-1 Quality O/H Bendix Mag	07-01971	$582.00
10-600614-1r Quality O/H Bendix Mag	07-02425	$675.00
10-600616-1 Quality O/H Bendix Mag	07-01937	$675.00
10-600616-3R Quality O/H Bendix Mag	07-02589	$655.00
10-600616-7R Quality O/H Bendix Mag	07-02592	$675.00
10-600646-1 Quality O/H Bendix Mag	07-01985	$675.00
10-600646-201 Quality O/H Bendix Mag	07-01925	$656.00
10-600646-2 Quality O/H Bendix Mag	07-01972	$675.00
10-600656-1 Quality O/H Bendix Mag	07-01945	$675.00
10-682610-221r Quality O/H Bendix Mag	07-02439	$1,159.00
10-79020-10 Quality O/H Bendix Mag	07-01940	$675.00
10-79020-16 Quality O/H Bendix Mag	07-01986	$675.00
10-79020-6 Quality O/H Bendix Mag	07-01987	$696.00
10-349350-6 Quality O/H Bendix Mag	07-01988	$675.00

OVERHAULED BENDIX DUAL MAGNETOS

Description	Part No.	Price
10-382555-11r Quality O/H Bendix Dual Mag	07-02405	$1,555.00
10-382555-13r Quality O/H Bendix Dual Mag	07-02406	$1,555.00
10-382555-141r Quality O/H Bendix Dual Mag	07-02407	$1,555.00
10-382555-141r Quality O/H Bendix Dual Mag	07-02428	$1,555.00
10-382555-151r Quality O/H Bendix Dual Mag	07-02409	$1,555.00
10-382555-15r Quality O/H Bendix Dual Mag	07-02408	$1,555.00
10-682555-15r Quality O/H Bendix Dual Mag	07-02429	$1,555.00
10-382555-16r Quality O/H Bendix Dual Mag	07-02411	$1,555.00
10-382560-11r Quality O/H Bendix Dual Mag	07-02412	$1,555.00
10-382560-13r Quality O/H Bendix Dual Mag	07-02413	$1,557.00
10-382610-13r Quality O/H Bendix Dual Mag	07-02414	$1,555.00
10-382610-221r Quality O/H Bendix Dual Mag	07-02415	$1,557.00
10-382910-13r Quality O/H Bendix Dual Mag	07-02416	$1,555.00
10-382910-18r Quality O/H Bendix Dual Mag	07-02417	$1,555.00
10-682555-11r Quality O/H Bendix Dual Mag	07-02426	$1,650.00
10-682555-13r Quality O/H Bendix Dual Mag	07-02427	$1,650.00
10-682555-151r Quality O/H Bendix Dual Mag	07-02430	$1,566.00
10-682555-16r Quality O/H Bendix Dual Mag	07-02431	$1,566.00
10-682560-11r Quality O/H Bendix Dual Mag	07-02432	$1,967.00
10-682560-13r Quality O/H Bendix Dual Mag	07-02433	$1,650.00
10-682605-13r Quality O/H Bendix Dual Mag	07-02434	$1,650.00
10-682610-11r Quality O/H Bendix Dual Mag	07-02435	$1,159.00
10-682610-131r Quality O/H Bendix Dual Mag	07-02438	$1,159.00
10-682610-13r Quality O/H Bendix Dual Mag	07-02437	$1,650.00
10-682620-11r 8cyl Quality O/H Bendix Dual Mag	07-02440	$1,650.00
10-682620-13r Quality O/H Bendix Dual Mag	07-02441	$1,159.00
10-682910-18r Quality O/H Bendix Dual Mag	07-02442	$1,650.00
10-682920-11r 8cyl Quality O/H Bendix Dual Mag	07-02443	$1,159.00

BENDIX-SCINTILLA MAGNETOS

BENDIX MAGNETO ENGINE APPLICATIONS

Engine		Magneto Type	Magneto Replacement	Units per Engine
Make	Model			
Continental	A-65-8, A-75-8,	S4RN-20	10-51360-27 (Rt. Side)	1
	C-75-8, C-85-8 with original crankcase	S4RN-21	10-51360-28 (Lt. Side)	1
	A65-8, A-75-8, C-75-8, C-85-8 with current crank-case castings No. 6794 & No. 6795	S4RN-21	10-51360-28	2
	C-75-12F, C-85-8F,C-85-12F, C-90-12,	S4LN-21	10-51360-26	2
	C-115, C-125-2, C-145-2, C-145-4	S6LN-21	10-51365-39	2
	E-165-2, E-185-2 (above S/N 10111) E-185-3, E-185-9 (above S/N 5937) (above S/N 20922), E-225-4, E-225-8 (all), O-470-7 (above S/N 5937)	S6LN-20	10-51365-43	2
	GO-300A, GO-300B	S6RN-21	10-51365-35	2
	O-470-2, -4, -13, -A, -B, -E, -G, -J, -K, -L, -M, BGSO-526-A	S6RN-25	10-79020-8	2
	O-470-13A	S6LN-23	10-52350-20	2
	PE-150-2, -6 Packette	S6LN-23	10-52350-20	1
	FSO-526-A	S6RN-26	10-85290-2	2
Franklin	6A4-150-B3, 6A4-165-B3	S6RN-21		2
	6V4-178-B3, -B33, O-335-2, -3	S6RN-21	10-51365-48	2

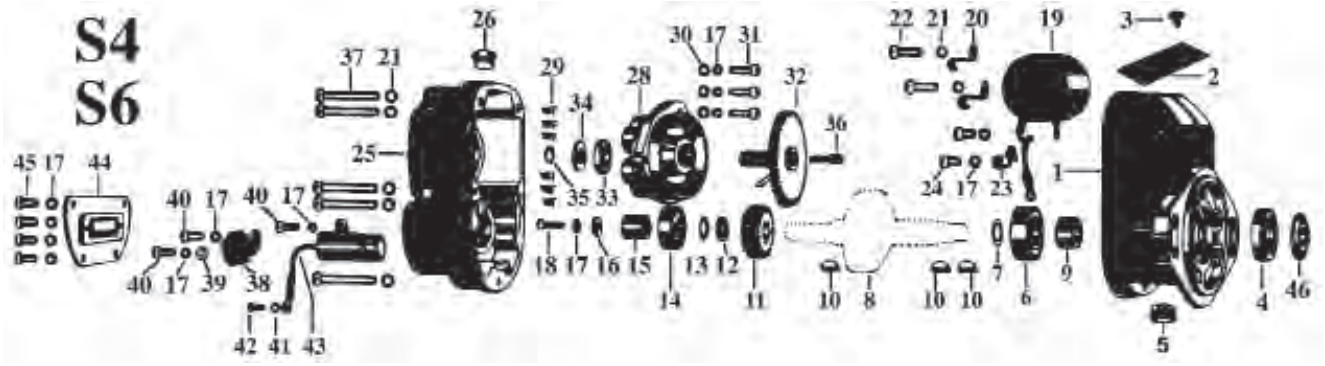
*See Listing Below.

Engine		Magneto Type	Magneto Replacement	Units per Engine
Make	Model			
Franklin	6V4-200-C32, -C33, O-335-2, -3, -5, -6	S6RN-23	10-52350-19	2
	6A4-200-C6	S6RN-23	10-52350-21	2
Lycoming	††O-145-B2, -B3, -C2, -C3, ††O-235-C,	S4LN-20	10-51360-29	1
	O-235-C1, -C1A,	S4LN-21	10-51360-30	1
	O-320-A1A, -A2A, -B1A, -B2A, O-340-A, -A1A,	S4LN-21	10-51360-30 (25° Lag) or	2
	-A2A, -B1A, B2A, O-360-A, -A1A, -A1B , -B1A, -B2A	S4LN-21	10-51360-25 (35° Lag)	2
	O-290-G (single ignition)	S4LN-21	10-51360-25	1
	GO-435-C2, -C2A, -C2B , -C2B2, -C2C, -C2E, GO-480, -B, -B1A6, -B1C,	S6LN-20	10-51365-31	1
	-B1D, -C1A, -C1D6, -C2E6, -F1A6, -F2A6, -F3A6, -F4A6	S6LN-21	10-51360-32	1
	O-435-19, -20, VO-435A, -A1A, -A1B, -A1C, -A1D, GO-480-C1B6, -D1A,	S6LN-20	10-51365-33	1
	-G1B6, GSO-480-A1A6, -A1C6, -B 1A6, -B1B6,-B1C6	S6LN-21	10-51365-34	1
	O-435-6, -6A, -23, -23A,	S6LN-22	10-52350-22	1
	-23B, -A1C (optional), O-480-1	S6LN-23	10-52350-23	1
	O-435-17, GO-435-C2, -C2A, -C2B, -C2D,	S6LN-20	10-51365-44	1
	GO-480-B1, -B1B, -C2C6, -F3B6, -F4B6	S6LN-21	10-51365-45	1
	O-540	S6LN-20	10-51365-46	1
		S6LN-21	10-51365-47	1

**New P/N 10-357584. ***New P/N 10-357586.

EP

PARTS COMMON TO S4N & S6N MAGNETOS



Ref. No.	Part No.	Description	Price Ea.
1	10-50727Y	Housing - Magneto	$524.00
2	10-400012	Plate - Mag Ident	$19.75
3	10-22067	Drive Screw - Ident Plate	— —
4	10-357592	Oil Seal - Drive Shaft	$18.50
5	10-157134	Vent - Mag Housing	$4.35
6	10-81806	Bearing - Mag, Drive End	$31.50
7	2-161-1	Shim Washer - .0025"	$3.35
	2-161-2	Shim Washer - .004"	$7.50
	2-161-3	Shim Washer - .005"	$2.89
	2-161-4	Shim Washer - .008"	$2.65
	2-161-5	Shim Washer - .010"	$2.98
	2-161-6	Shim Washer - .012"	$3.35
	--------	(Drive End Bearing)	-------
8	— —	Magnet - Rotating	— —
9	10-25788	Bushing - Drive Shaft	$26.95
10	10-90788-5	Key - Woodruff	$1.95
11	10-157123Y	Gear-Distrib., Small (S4)	$56.75
11A	10-157120Y	Gear-Distrib., Small (S6)	$45.50
12	10-3503	Spacer-Brkr End Bearing	$1.65
13	2-199-1	Shim Washer - .002"	$2.10
	2-199-2	Shim Washer - .004"	$2.45

Ref. No.	Part No.	Description	Price Ea.
13	2-199-3	Shim Washer - .005"	$2.18
	2-199-4	Shim Washer - .008"	$2.65
	2-199-5	Shim Washer - .010"	$2.07
	2-199-6	Shim Washer - .012"	$2.15
	--------	(Breaker End Bearing)	-------
14	2-202	Bearing-Magnet, Brkr End	$45.95
15	10-88543-1	Cam - Breaker	$17.80
16	10-51354	Washer-Plain (Cam Screw)	$2.23
18	10-35936-10	Screw - Cam	$2.40
19	10-357164	Coil	$166.75
20	10-50765	Clamp - Coil Core	$5.85
21	--------	Washer - Lock	-------
22	10-35937-8	Screw - Coil Core Clamp	$2.25
23	10-5752	Clip - Primary Lead	$4.60
24	10-16479	Screw	— —
25	— —	Housing - Distributor	— —
26	10-157135	Plug - Distributor Housing	$3.95
27	— —	Bushing - Ground Terminal	— —
28	10-52949	Block - Distributor (S4)	$79.90
28A	10-52958	Block - Distributor (S6)	$112.75
29	10-50737	Spring-H.T. Cable Contact	$0.79

Ref. No.	Part No.	Description	Price Ea.
30	--------	Washer - Plain	-------
31	--------	Screw - Distributor Block	-------
32	10-357584	Gear-Distrib., Large (S4)**	$76.90
32A	10-357586	Gear-Distrib., Large (S6)***	$159.75
33	10-50752	Washer - Felt	$0.85
35	10-92815-37	Ring-Retain. (Distrib.,Gear)	$0.85
36	10-9595	Brush - Carbon	$6.75
37	10-157158	Screw	$2.83
38	— —	Breaker Assembly*	— —
39	10-14268	Washer - Plain	$2.14
40	10-35936-6	Screw	$2.71
41	--------	Washer - Lock	— —
42	--------	Screw - Lead to Breaker	-------
43	10-51676	Condenser	$26.50
44	— —	Cover - Breaker	— —
45	10-157161	Screw - Breaker Cover	$2.71
46	10-51678	Oil Slinger - Drive Shaft	$10.50

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

BENDIX-SCINTILLA MAGNETOS

BENDIX
BREAKER ASSEMBLIES

Early S4, S6 Mags

P/N 07-06305 (10-357173) with spring (current production) ..... $36.85 Ea.

P/N 07-06306 (10-357174) without spring (current production) ..... $37.75 Ea.

All above breaker assemblies used on either Right or Left Magnetos.

Late S4/S6 Mags, S200 Mags*

P/N 10-382584 (LH) ..... $38.75 Ea.

P/N 10-382585 (RH) ..... $33.95 Ea.

Used on many late Lyc. engines.

Note: Specify Bendix mag P/N e.g., 10-51369-29

REPLACEMENT COIL FOR BENDIX S4, S6 MAGS

Airborne FAA-PMA approved coil replaces both Bendix 10-357164 & 10-357165. Retrofits virtually the complete range of Bendix S20 & S200 series mags. Furnished with long & short "coil to points" leads.

P/N ES-652 ..... $108.95

NOTE: Part Nos. 10-357164-1, 10-357165-1, 07-06303, 07-06304 are all equivalents for ES-652

REPLACEMENT COIL FOR BENDIX 1200 SERIES MAGS

Aero Accessories, Inc. FAA-PMA approved coil is a direct replacement for Bendix 10-391088 coil as used on Bendix 1200 series mags at tremendous savings. P/N 07-05600 ..... $178.85

REPLACEMENT COILS FOR CONTINENTAL ENGINES PER SERVICE BULLETIN NO. 637

TCM Ignition Systems has issued Service Bulletin No. 637 to retire from service certain older coils and rotating magnets. The Bulletin applies to many S-20, S-200, S-600, and S-1200 series magnetos as identified in this chart. Compliance with this Bulletin is required at the next 100 inspection, annual inspection, or progressive maintenance inspection, whichever comes first. Order by new coil part number.

Magneto Series	Old Coil P/N	Color	New Coil P/N	Color	Our Price
S-20	10-51303 10-76384 10-160886	Opaque amber to Dark Purple	10-357164	Bright Red to Dark Red	$166.75
S-20 S-200	10-163172 10-163209 10-160887	Opaque Amber to Dark Purple	10-357165-1	Bright Red to Dark Red	$166.75
S-1200	10-349271	Opaque Amber	10-391088-1	Blue to Olive Green to Black	$207.95

ALTERNATOR FILTER

Replacement part for existing alternator filters. Wire won't break at the case and its clamp is made from heavy gauge steel. Double the capacitance compared to OEM alternator filters. For stubborn alternator noise, this Alternator filter combined with the Eliminator (P/N 11-08055) can trap a wide frequency range of electronic noise. Both of these filters have been thoroughly tested under a DO 160D and are FAA/PMA approved. P/N 11-08060 ..... $59.95

MAGNETO FILTER

Eliminates ignition noise. Install in primary lead of magneto. Not FAA approved. P/N 07-03200 ..... $66.75 ea

MAGNETO FILTER FAA APPROVED

Attenuates both low and high frequencies of noise generated from bendix magneto ignition systems. This filter has been used by avionics shops, OEM aircraft manufacturers, and FBO's, to attenuate and suppress pulsating noise generated by their aircraft's magneto systems. The magneto filter is FAA-PMA approved and is compatible with the bendix series S20, S21, S200, D3000, D4000 magneto. 1000 VDC working voltage, 5000VDC break down voltage. Capacitance: .05 uf-self healing technology. Heavy duty mounting clamp. Temp. range: -35°C to +80°C. Max. current: 20 amps P/N 07-00713 ..... $68.80

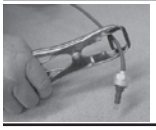
BENDIX MAGNETO GREASE

#10-27165 - Factory recommended lubricant for bearings in Bendix magnetos. 1 Lb. Can ..... P/N 10-27165 ..... $63.85

#10-391200 - For use on distributor block bushing. Provides proper shaft lubrication.

8 oz. can ..... P/N 10-391200 ..... $61.75

1 oz. tube ..... P/N 07-02500 ..... $3.95



GROMMET STRETCHER

Stop Cutting Grommets!

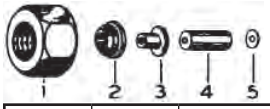
- Stretch grommets over large plugs and fittings.
- Great for spark plug wires or molex plugs.

P/N 11-06946 ..... $28.50

GROUND TERMINAL KITS

For S-20 series mags. Kit No. 10-52306 (AN3105) $39.75

Reg. No.	Part No.	No. Req.	Description
1	10-30299	1	NUT - Coupling (Ground Terminal)
2	10-56507	1	CROMMET Assy.(Ground Terminal)
3	10-3383	1	FERRULE - Inner (Ground Wire)
4	10-25725	1	SLEEVE - Insulating (Ground Wire)



For 20 series mags. Kit No. P/N 10-52305 ..... $72.75

Reg. No.	Part No.	No. Req.	Description
1	10-37669	1	NUT - Coupling (Ground Terminal)
2	10-7030	1	FERRULE - Outer (Ground Wire)
3	10-7029	1	FERRULE - Inner (Ground Wire)
4	10-37668	1	SLEEVE - Insulating (Ground Wire)
5	2-155	1	WASHER - Ground Wire Contact

TCM/BENDIX IMPULSE COUPLINGS

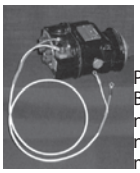
Part No.	Price
10-40307	$429.00
10-40309	$496.00
10-40310	$306.50
10-400313	$446.00
10-40314	$357.00
10-40315	$425.00
10-40322	$279.95
10-40325	$365.95

$70.00 core charge applies

TCM/BENDIX CAM ASSEMBLIES

Part No.	Price
10-40166-4	$284.95
10-40166-6	$252.95
10-40167-4	$308.00
10-40167-6	$299.75
10-40167-10	$282.95

$40.00 core charge applies



BOGERT AVIATION P-LEADS

P-leads for all aircraft using a Slick or Bendix Style Magnetos. This includes nearly all piston aircraft such as: Cessna, Piper, Grumman, Mooney, as well as many homebuilt and experimental aircraft. As a general rule cables should be replaced when ever wear is apparent. Broken ground leads should not be permitted. A drop in rpm is expected when one magneto of the two mags is shut off. Should the propeller be moved by hand and a functional "hot" magneto exists, the engine may fire causing injury. If there is no drop in rpm the owner should call a mechanic immediately. Bogert is using 14gauge MS27500 wire with aviation approved terminals. The shrink tube has an adhesive inside the sleeve to improve durability and reduce the possibility of corrosion. Cables are ready to install.

Length inches	Slick Style		Bendix Round Nut		Bendix Hex Nut	
	Part No.	Price	Part No.	Price	Part No.	Price
30	11-06869	$31.60	11-06891	$70.75	11-06914	$80.99
36	11-06870	$32.95	11-06892	$72.75	11-06915	$89.75
42	11-06871	$34.70	11-06893	$73.75	11-06916	$89.75
48	11-06872	$35.50	11-06894	$74.75	11-06917	$89.50
54	11-06873	$36.50	11-06895	$75.75	11-06918	$93.75
60	11-06874	$37.50	11-06896	$76.75	11-06919	$93.75
66	11-06875	$38.80	11-06897	$78.75	11-06920	$94.90
7	11-06876	$39.85	11-06898	$79.75	11-06921	$95.00
84	11-06877	$42.85	11-06899	$82.75	11-06922	$99.75
96	11-06878	$46.50	11-06901	$85.95	11-06923	$103.75
108	11-06879	$49.65	11-06902	$89.80	11-06924	$107.75
120	11-06880	$53.75	11-06903	$92.75	11-06925	$110.75
132	11-06881	$57.75	11-06904	$99.75	11-06926	$114.80
144	11-06882	$60.75	11-06905	$99.75	11-06927	$117.75
156	11-06883	$64.75	11-06906	$103.75	11-06928	$122.75
168	11-06884	$67.75	11-06907	$107.80	11-06929	$124.75
180	11-06885	$71.75	11-06908	$110.75	11-06930	$128.75
192	11-06886	$74.90	11-06909	$114.75	11-06931	$131.80
204	11-06887	$77.85	11-06910	$116.99	11-06932	$135.75
216	11-06888	$81.90	11-06911	$121.75	11-06933	$138.75
228	11-06889	$84.90	11-06912	$124.75	11-06934	$142.75
240	11-06890	$88.75	11-06913	$128.75	11-06935	$145.75

EP

BENDIX MAGNETO REPAIR KITS FROM TEMPEST

REPAIR KIT
1 - Contact Assy. Kit (3)
1 - Capacitor
2 - Bearings
1 - Oil Seal
1 - Oil Slinger
3 - Woodruff Keys
1 - Cotter Pin
1 - Cam Screw
1 - Felt Washer
1 - Felt Strip
1 - Snap Ring
1 - Carbon Brush

These magneto repair kits are designed to simplify the Bendix magneto overhaul process by providing all of the commonly needed overhaul parts in one convenient kit. The Repair Kits contain the parts needed for minor repair such as a 500 hour inspection, and the Deluxe Repair Kits contain the parts needed for major repair such as a magneto overhaul. These parts are highest quality direct replacement parts and are approved for installation and use on certificated aircraft. The Repair Kit and Deluxe Repair Kit for the Bendix -200, -201, and -202 series magnetos contain two sets of contact assembly kits. Some parts that may be need replacing during magneto overhaul are not included in these kits.

DELUXE REPAIR KIT
1 - Contact Assy. Kit (3)
1 - Coil Kit
1 - dist. Block Kit
1 - Gear Kit
1 - Capacitor
2 - Bearings
1 - Oil Seal
1 - Oil Slinger
3 - Woodruff Keys
1 - Cotter Pin
1 - Cam Screw

Bendix series	Magneto P/N	Magneto Type	Repair Kit P/N	Kit Price	Deluxe Repair Kit P/N	Kit Price
S-20 & S21	10-51360-1	S4R(L)N -20,21	07-00855	$108.95	07-00854	$356.00
	10-51360-3					
	10-51360-4					
	10-51360-6					
	10-51360-8					
	10-51360-10	S4R(L)N -20,21	07-00825	$106.75	07-00856	$336.00
	10-51360-11					
	10-51360-12					
	10-51360-25					
	10-51360-26	S4R(L)N -20,21	07-00855	$108.95	07-00854	$356.00
	10-51360-27					
	10-51360-28					
	10-51360-29	S4R(L)N -20,21	07-00825	$106.75	07-00856	$336.00
	10-51360-30					
	10-51360-31	S4R(L)N -20,21	07-00855	$108.95	07-00854	$356.00
	10-51360-33	S4R(L)N -20,21	07-00825	$106.75	07-00856	$336.00
	10-51360-37					
	10-51360-40					
	10-51360-41					
	10-51360-45	S4RN-21	07-00860	$159.75	07-00859	$383.00
	10-51360-46	S4R(L)N -20,21	07-00825	$106.75	07-00856	$336.00
	10-51360-47	S4RN-21	07-00860	$159.75	07-00859	$383.00
	10-51360-48	S4RN-21	07-00858	$153.75	07-00857	$396.00
	10-51360-54	S4R(L)N -20,21	07-00825	$106.75	07-00856	$336.00
	10-51360-55	S4R(L)N-20, 21	07-00860	$159.75	07-00859	$383.00
	10-51360-58					
	10-51360-1 up to S.N.238468	S6R(L)N-20, -21	07-00862	$106.75	07-00861	$399.75
	10-51365-1 up to S.N.238469	S6R(L)N	07-00864	$105.75	07-00863	$415.00
	10-51365-2	S6R(L)N -20,21	07-00862	$106.75	07-00861	$399.75
	10-51365-5					
	10-51365-7					
	10-51365-9	S6R(L)N -20,21	07-00864	$105.75	07-00863	$415.00
	10-51365-13	S6R(L)N -20,21	07-00862	$106.75	07-00861	$399.75
	10-51365-14	S6R(L)N -20,21	07-00864	$105.75	07-00863	$415.00
	10-51365-15					
	10-51365-16					
	10-51365-17					
	10-51365-20					
	10-51365-25					
	10-51365-26					
	10-51365-27					
	10-51365-28					
	10-51365-29					
	10-51365-30					
	10-51365-31					
	10-51365-32					
	10-51365-33					
	10-51365-34					
	10-51365-35					
	10-51365-39					
	10-51365-40	S6R(L)N -20,21	07-00862	$106.75	07-00861	$399.75
	10-51365-41					
	10-51365-42	S6R(L)N -20,21	07-00864	$105.75	07-00863	$415.00
	10-51365-43					
	10-51365-44					
	10-51365-45					
	10-51365-46					
	10-51365-47					
	10-51365-48	S6R(L)N -20,21	07-00862	$106.75	07-00861	$399.75
	10-51365-53	S6R(L)N -20,21	07-00864	$105.75	07-00863	$415.00
	10-51365-54					
	10-51365-57	S6LN -20,21	07-00868	$166.75	07-00867	$470.00

MAGNETO P-LEAD ADAPTER

This unique design of the P-lead adapter ensures proper spring pressure against the internal contact. It provides secure and stable alignment, and includes a post that prevents the timer leads from falling off. This adapter allows you to connect to the timer leads of all Bendix magnetos with an immediate and positive connection. One pair per package. 1 lbs (0.5Kg) shipping weight.

Magneto P-lead Adapter (Early S2, S4, S20) ..... P/N 12-03522 ..... $35.95
Magneto P-lead Adapter (S200, S600,later S2, S4, S20) ..... P/N 12-03523 ..... $35.95
Magneto P-lead Adapter (D2000, D3000 Series) ..... P/N 12-03524 ..... $35.95
Magneto P-lead Adapter (Complete Set) ..... P/N 12-03525 ..... $95.95

BENDIX MAGNETO REPAIR KITS FROM TEMPEST

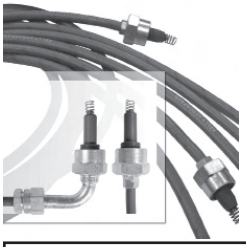
Bendix Series	Magneto P/N	Magneto Type	Repair Kit P/N	Kit Price	Deluxe Repair Kit P/N	Kit Price
S-24 & S25	10-79020-5	S6R(L)N -24,25	07-00864	$105.75	07-00863	$415.00
	10-79020-6					
	10-79020-8					
	10-79020-10					
	10-79020-11	S6LN -25	07-00868	$166.75	07-00867	$470.00
	10-79020-13	S6R(L)N -24, -25	07-00864	$105.75	07-00863	$415.00
	10-79020-14					
	10-79020-16					
	10-79020-17	S6LN -25	07-00868	$166.75	07-00867	$470.00
	10-79020-18					
	10-79020-118					
	10-79020-19	S6RN-25	07-00866	$164.75	07-00865	$468.00
	10-79020-119					
S-200	10-163005-1	S4R(L)N-200*	07-00844	$179.80	07-00843	$421.00
	10-163005-2					
	10-163005-3					
	10-163005-4					
	10-163005-5					
	10-163005-7					
	10-163005-10					
	10-163005-11					
	10-163015-1	S4R(L)N-201*	07-00844	$179.80	07-00843	$421.00
	10-163015-2					
	10-163015-3					
	10-163015-4					
	10-163045-1	S4LN -204	07-00757	$146.75	07-00847	$383.00
	10-163045-2	S4RN -204	07-00846	$173.75	07-00845	$382.00
	10-163045-3	S4LN -204	07-00757	$146.75	07-00847	$383.00
	10-163045-4	S4RN -204	07-00846	$173.75	07-00845	$382.00
	10-163045-6	S4LN -204	07-00757	$146.75	07-00847	$383.00
	10-163045-7	S4RN -204	07-00846	$173.75	07-00845	$382.00
	10-163055-1	S4RN -205	07-00846	$173.75	07-00845	$382.00
	10-163055-2	S4LN -205	07-00757	$146.75	07-00847	$383.00
	10-163010-1	S6R(L)N -200*	07-00849	$177.75	07-00848	$481.00
	10-163010-2					
	10-163010-3					
	10-163010-4					
	10-163010-5					
	10-163010-6					
	10-163010-7					
	10-163010-8					
	10-163010-9					
	10-163010-10					
	10-163010-11					
	10-163010-15					
	10-163010-17					
	10-163020-1	S6R(L)N-201*	07-00849	$177.75	07-00848	$481.00
	10-163020-2					
	10-163020-3					
	10-163020-4					
	10-163030-1	S6R(L)N-204	07-00849	$177.75	07-00848	$481.00
	10-163030-4					
	10-163050-1	S6LN-204	07-00853	$149.80	07-00852	$466.00
	10-163050-2					
	10-163050-3					
	10-163050-5					
	10-163050-6	S6RN -204	07-00851	$152.75	07-00850	$449.00
	10-163050-7					
	10-163050-8					
	10-163050-9	S6LN -204	07-00853	$149.80	07-00852	$466.00
	10-163060-1	S6RN -205	07-00851	$152.75	07-00850	$449.00
	10-163060-2	S6RN -205	07-00853	$149.80	07-00852	$466.00
	10-163070-1	S6RN -206	07-00853	$149.80	07-00852	$466.00
	10-163070-3					

*The Repair Kit and Deluxe Repair Kit for the Bendix -200, -201, and -202 Series Magnetos contain two sets of Contact Assembly Kits.

REPLACEMENT PARTS FOR BENDIX MAGNETOS FROM KELLY AEROSPACE

P/N	Description	Price	P/N	Description	Price	P/N	Description	Price	P/N	Description	Price
07-06301	Bearing	$13.50	07-06315	Breaker Points	$75.75	10-50737	Spring	$0.79	07-06341	Bushing	$5.35
10-357078	Bushing	$21.55	07-06316	Capacitor	$92.75	07-06329	Felt Washer	$0.85	10-160844	Brush	$5.35
10-357164	Coil	$166.75	07-06317	Washer	$3.85	07-06330	Plug	$7.95	07-06344	Bushing	$61.75
10-357165-1	Coil	$166.75	07-06318	Coil	$219.95	10-51676	Capacitor	$26.50	07-06345	Felt Strip	$0.80
10-35717-3	Breaker Points	$48.90	07-06319	Capacitor	$98.50	07-06332	Washer	$0.63	07-06346	Packing	$0.95
10-35717-4	Breaker Points	$48.65	07-06320	Gasket	$54.75	07-06333	Washer	$1.82	07-06347	Capacitor	$69.85
10-357193	Bushing	---	07-06321	Bushing	$31.55	07-06334	Distributor Block	$219.00	07-06348	Washer	$4.95
07-06308	Capacitor	$78.85	10-391088-1	Coil	$207.95	07-06335	Distributor Block	$232.95	07-06350	Breaker Points	$47.00
10-52949	Distributor Block	$79.90	07-06323	Gasket	$32.50	07-06336	Bearing	$31.50	07-06351	Bearing	$20.70
07-06311	Breaker Points	$99.75	07-06324	Gasket	$18.50	07-06325	Ring	$0.85			
10-382584	Breaker Points	$38.75	07-06325	Distributor Block	$74.75	07-06338	Ring	$1.34			
07-06313	Coil	$189.75	07-06326	Distributor Block	$79.90	07-06339	Bearing	$45.95			
07-06314	Breaker Points	$68.75	07-06327	Vent	$22.70	07-00787	Coil	$108.95			

KELLY AEROSPACE IGNITION HARNESSES



PLATED STEEL NUT: Steel nuts offer superior strength compared to aluminum nuts and reduce the potential for galling during installation FAA/PMA APPROVED FOR: - Franklin - Teledyne Continental Motors - Textron Lycoming .ABRASION AND HEAT RESISTANT: The abrasion resistant red polymer cover has been engineered specifically for the high-temperature environment of reciprocating engines. UNIQUE SPRING DESIGN: Hartzell ignition harnesses incorporate a negative-pitch spring design (the tip of the coil spring extends inward) allowing the coil spring tip to lie flat against the spark plug electrode, providing 360 contact. Ignition energy is maximized and flashover is reduced to a minimum. REPLACEABLE CONTACT SPRINGS: Replacement springs are available separately saving you time and money when a field repair is necessary. STRAIGHT AND CLOCKABLE 90 DEGREE STEEL ELBOW LEADS AVAILABLE: You have the option of using straight or clockable 90 elbow leads to make the installation neat and easy. PERFORMANCE - Plus: Using a tinned-copper, nickel plated braid shielding substantially reduces EMI and combined with a very flexible 19 strand conductor of stainless steel wire provides the ultimate in wire conductivity and ease of installation.

NOTE: PART NUMBERING SYSTEM and CROSS REFERENCE: The part numbering system is "user Friendly" for quickly cross-referencing to both Champion and Unison Harnesses. The "KA1"prefix is equivalent to the Champion "CH1" or the Unison"M" with the balance of the part number remaining the same. Add the suffix "E"to the part number to designate the 90 degree steel elbow terminations whenever ordering an "Elbow" harness. (EXAMPLE: KA12121E).

P/N	BEND	SLICK	4 CYL	6CYL	ELBOW	STRAIGHT	Our P/n	Price
KA11480		X		X		X	08-01095	$418.00
KA11480E		X		X	X		08-01096	$460.00
KA1730	X			X		X	08-01098	CALL
KA11730E	X			X	X		08-01099	CALL
KA11740	X			X		X	08-01101	CALL
KA11740E	X			X	X		08-01102	CALL
KA11780		X	X			X	08-01103	CALL
KA11780E		X	X		X		08-01104	$339.00
KA11878		X		X		X	08-01105	$399.00
KA11878E		X		X	X		08-01106	$463.00
KA11884		X		X		X	08-01107	$399.00
KA11884E		X		X	X		08-01108	$461.00
KA11950	X			X		X	08-01109	$386.00
KA11950E	X			X	X		08-01110	$449.00
KA11978	X			X		X	08-01111	CALL
KA11978E	X			X	X		08-01112	$410.95
KA12007	X		X			X	08-01113	$279.00
KA12007E	X		X		X		08-01114	CALL
KA12015	X			X		X	08-01115	CALL
KA12015E	X			X	X		08-01116	$449.00
KA12037	X			X		X	08-01117	$355.00
KA12037E	X			X	X		08-01118	$418.00
KA12112	X		X			X	08-01119	$278.95
KA12112E	X		X		X		08-01120	$342.00
KA12120	X			X		X	08-01121	CALL
KA12120E	X			X	X		08-01122	$461.00
KA12121	X			X		X	08-01123	CALL
KA12121E	X			X	X		08-01124	$425.00
KA12130	X			X		X	08-01125	$374.00
KA12130E	X			X	X		08-01126	$429.00
KA12154	X			X		X	08-01127	$355.00
KA12154E	X			X	X		08-01128	$418.00
KA12157	X			X		X	08-01129	$351.00
KA12157E	X			X	X		08-01130	$418.00
KA12176	X			X		X	08-01131	$399.00
KA12176E	X			X	X		08-01132	CALL
KA12216	X			X		X	08-01133	$398.00
KA12216E	X			X	X		08-01153	$463.00
KA12235	X		X			X	08-01134	$255.95
KA12235E	X		X		X		08-01135	$319.00
KA12244	X			X		X	08-01155	$399.00
KA12244E	X			X	X		08-01156	$465.00
KA12247	X			X		X	08-01157	$399.00
KA12247E	X			X	X		08-01158	$462.00
KA12259	X			X		X	08-01159	$399.00
KA12259E	X			X	X		08-01160	$410.95
KA12318		X		X		X	08-01161	$399.00
KA12318E		X		X	X		08-01162	$463.00
KA12339	X			X		X	08-01163	$399.00
KA12339E	X			X	X		08-01154	$463.00
KA12360	X		X			X	08-01136	$282.95
KA12360E	X		X		X		08-01137	$334.00
KA12364	X		X			X	08-01138	$273.95
KA12364E	X		X		X		08-01139	$328.00
KA12365	X		X			X	08-01082	$278.95
KA12365E	X		X		X		08-01141	$339.00
KA12381		X		X		X	08-01142	$349.00
KA12381E		X		X	X		08-01143	$418.00
KA12423	X		X			X	08-01144	$274.95
KA12423E	X		X		X		08-01164	$342.00
KA12447	X			X		X	08-01165	$399.00
KA12447E	X			X	X		08-01166	CALL
KA12474	X			X		X	08-01167	$399.00
KA12474E	X			X	X		08-01168	$463.00
KA12508		X	X			X	08-01145	$269.95
KA12508E		X	X		X		08-01169	$332.00
KA12616	X		X			X	08-01170	$278.95

P/N	BEND	SLICK	4 CYL	6CYL	ELBOW	STRAIGHT	Our P/n	Price
KA12616E	X		X		X		08-01171	$342.00
KA12628	X			X		X	08-01172	$397.00
KA12628E	X			X	X		08-01173	$463.00
KA12709	X			X		X	08-01174	$367.00
KA12709E	X			X	X		08-01175	$430.00
KA12712	X			X		X	08-01176	$399.00
KA12712E	X			X	X		08-01177	$462.00
KA12742	X			X		X	08-01178	$399.00
KA12745	X			X		X	08-01180	$399.00
KA12745E	X			X	X		08-01181	$463.00
KA12778		X		X		X	08-01146	$386.00
KA12778E		X		X	X		08-01182	$449.00
KA12790	X			X		X	08-01183	$399.00
KA12790E	X			X	X		08-01184	$463.00
KA12828		X		X		X	08-01185	$399.00
KA12828E		X		X	X		08-01186	$463.00
KA12851	X			X		X	08-01188	$399.00
KA12851E	X			X	X		08-01189	$463.00
KA12854	X			X		X	08-01190	$399.00
KA12854E	X			X	X		08-01191	$463.00
KA12865	X			X		X	08-01192	$399.00
KA12865E	X			X	X		08-01193	$463.00
KA12890	X			X		X	08-01194	$399.00
KA12890E	X			X	X		08-01195	$463.00
KA12932		X		X		X	08-01147	$393.00
KA12932E		X		X	X		08-01196	$445.00
KA14001		X	X			X	08-01148	$273.95
KA14001E		X	X		X		08-01086	$332.00
KA14002		X	X			X	08-01150	$268.95
KA14002E		X	X		X		08-01151	CALL
KA14004		X	X			X	08-01152	$272.95
KA14004E		X	X		X		08-01197	$332.00
KA14033	X		X			X	08-01198	$268.95
KA14033E	X		X		X		08-01199	$332.00
KA17001	X			X		X	08-01202	$399.00
KA17001E	X			X	X		08-01203	$463.00
KA17002	X			X		X	08-01204	$399.00
KA17002E	X			X	X		08-01205	$463.00
KA17005	X		X			X	08-01206	$268.95
KA17005E	X		X		X		08-01207	$331.00
KA17006	X		X			X	08-01208	$268.95
KA17006E	X		X		X		08-01209	$331.00
KA17007	X		X			X	08-01210	$268.95
KA17007E	X		X		X		08-01211	$332.00
KA17008	X		X			X	08-01212	$269.95
KA17008E	X		X		X		08-01213	$332.00
KA17011		X	X			X	08-01214	$268.95
KA17011E		X	X		X		08-01215	$332.00
KA12365	X		X			X	08-01082	$278.95
KA14001E		X	X		X		08-01086	$332.00
KA11730	X			X		X	08-01098	$383.00
KA11730E	X			X	X		08-01099	$449.00
KA11740	X			X		X	08-01101	$379.00
KA11740E	X			X	X		08-01102	$449.00
KA12007E	X		X		X		08-01114	$349.00
KA12120	X		X			X	08-01121	$399.00
KA12176E	X			X	X		08-01132	$463.00
KA12508		X	X			X	08-01145	$269.95
KA17012	X		X			X	08-01216	$638.00
KA17012E	X		X		X		08-01217	$699.00
KA11978	--	--	--	x	--	--	08-01111	$369.00
KA12045E	--	x	x	--	x	--	08-12156	$348.00
KA12351	--	x	x	--	--	x	08-12158	$283.95
KA12351E	--	x	x	--	x	--	08-12159	$348.00
KA12402	--	x	x	--	--	x	08-12160	$259.95

FOR A COMPLETE APPLICATION CHART PLEASE VISIT WWW.AIRCRAFTSPRUCE.COM

KELLY AEROSPACE INDIVIDUAL HARNESS LEADS

The leads are made with our industry leading Kelly Aerospace red ignition harness wire cut 72 inches in length with available 5/8 or 3/4 spark plug termination. Also shipping with the leads is an attachment kit with magneto attachment hardware for both Slick and Bendix/CMI magnetos. Trim to fit.

Kelly E100-72 Trim To Fit Lead 72" 3/4 Lead Assy W/ Elbow ..... P/N 08-13222 ..... $116.75
Kelly E200-72 Trim To Fit 72" 5/8 Lead Assy W/ Elbow ..... P/N 08-13223 ..... $116.75
Kelly S100-72 72" 3/4 Lead Assy Straight ..... P/N 08-13224 ..... $108.75
Kelly S200-72 72" 5/8 Lead Assy Straight ..... P/N 08-13225 ..... $108.75

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Prices Subject to Change Without Notice

4300 AND 6300 SERIES SLICK MAGNETOS

These new lightweight aircraft magnetos are being used by many new equipment manufacturers. Weigh only 3-3/4 lbs. compared to 6-1/4 lbs. for typical old style magnetos. All units carry a six-month warranty after delivery to the user. These new model magnetos are completely rebuildable. The old 4000/4100 magnetos may not be returned as an exchange unit for a new magneto of the same model. Most other Magnetos may be returned for core credit. Drive gears are not included. *When purchasing slick magnetos separately gaskets are not included.

IF NO CORE IS RETURNED, ADD $150 TO THE PRICE OF A NEW MAGNETO.

4300 SERIES

Magneto	ROT.	LAG	Weight	Type	Part No.	Price	Application
4309	LEFT	0	4	DD	08-01338	$911.00	Cont. IO-240-B
4310	LEFT	30	4	RB	08-01339	$1,055.00	Cont. IO-240-B
4333	RIGHT	25	4.8	IC	08-04333	$1,086.00	Cont. A-65-1, A-65-3, A-65-6, A-65-6J, A-65-7 A-65-8, A-65-8F, A-65-8FJ A-75-3, A-75-6, A-75-6J, A-75-8, A-75-8F, A-75-8FJ, A-75-8J, C-75-8, C-75-8F, C-75-8FH C-75-8FHJ, C-75-8FJ, C-75-8J, C-85-8, C-85-8F C-85-8FHJ, C-85-8FJ, C-85-8J, C-90-8F, C-90-8FJ
4345	LEFT	15	4	RB	08-01345	$1,048.00	Lyc. AEIO-360-A1A, AEIO-360-A1A, HIO-360-D1A, IO-360-A1A IO-360-A1C, IO-360-A2A, IO-360-A2C, IO-360-C1A IO-360-C1B, IO-360-D1A
4347	LEFT	25	4	RB	08-04347	$1,016.00	Lyc. AEIO-360-A1A, AEIO-360-A1A, AEIO-360-B1B, HO-360-C1A IO-320-B1D, IO-360-B1B, IO-360-B1D, IO-360-E1A O-235-C1B, O-235-F1B, O-320-A2C, O-320-A3C O-320-B1A , O-320-B1B, O-320-B2C, O-320-B2D O-320-B3C, O-320-D2B, O-320-D2B, O-320-E2B O-360-A1D, O-360-A2D, O-360-C1C, O-360-C2C
4372	LEFT	15	4.8	IC	08-43720	$947.00	Lyc. AEIO-360-A1B, AEIO-360-A1B6, AEIO-360-A1D, AEIO-360-A1D AEIO-360-A1E, AIO-360-A1A, AIO-360-A1B, AIO-360-B1B IO-360-A1B, IO-360-A1B6, IO-360-A1D, IO-360-A1D6 IO-360-A2B, IO-360-C1C, IO-360-C1C6, IO-360-C1D6 IO-360-C1E6, IO-360-C1F, IO-360-K2A , O-235-K2A, O-235-K2B, O-235-K2C, O-235-L2A, O-235-M1, O-235-M2C O-235-N2A, O-235-N2C, O-235-P1, O-235-P2A, O-290-D2
4381	LEFT	5	4.8	IC	4281	$998.00	O-235-L2C, O-235-N2C

Abbreviations: DD (Direct Drive), IC (Impulse Coupled), RB (Retard Breaker), TD (Tachometer Drive), P (Pressurized)
Weight does not include harness cap or magneto drive gear, and are provided for reference only.

6300 SERIES

Magneto	ROT.	LAG	Weight	Type	Part No.	Price	Application
6310	RIGHT	30	4.9	IC	08-06310	$923.00	Cont. IO-470-A, IO-470-C, IO-470-D, IO-470-E, IO-470-F, IO-470-G, IO-470-H, IO-470-J, IO-470-K, IO-470-L, IO-470-LO, IO-470-M, IO-470-N, IO-470-P, IO-470-R, IO-470-S, IO-470-T, IO-470-U, IO-470-V, IO-470-VO, IO-520-A, IO-520-B, IO-520-BA, IO-520-BB, IO-520-C, IO-520-CB, IO-520-D IO-520-E, IO-520-F, IO-520-J, IO-520-K, IO-520-L IO-520-M, IO-520-MB, IO-520-N, IO-520-NB, IO-550-A IO-550-B, IO-550-C, IO-550-D, IO-550-F, IO-550-L O-470-A , O-470-B, O-470-B-C1, O-470-E, O-470-G, O-470-G-C1, O-470-H, O-470-J, O-470-K, O-470-K-C1 O-470-L, O-470-L-C1, O-470-M, O-470-M-C1, O-470-N O-470-P, O-470-R, O-470-S, O-470-T, O-470-U TSIO-520-A, TSIO-520-B, TSIO-520-BB, TSIO-520-C, TSIO-520-D TSIO-520-DB, TSIO-520-E, TSIO-520-EB, TSIO-520-G, TSIO-520-H TSIO-520-J, TSIO-520-JB, TSIO-520-K, TSIO-520-KB, TSIO-520-L TSIO-520-LB, TSIO-520-M, TSIO-520-N, TSIO-520-NB, TSIO-520-P TSIO-520-R, TSIO-520-T, TSIO-520-U, TSIO-520-UB, TSIO-520-VB TSIO-520-WB
6320	RIGHT	30	4.9	ICP	08-01353	$958.00	Cont. LTSIO-360-E, LTSIO-360-EB, LTSIO-360-KB, LTSIO-360-RB TSIO-520-A, TSIO-520-AE, TSIO-520-AF, TSIO-520-B, TSIO-520-BB TSIO-520-C, TSIO-520-CE, TSIO-520-D, TSIO-520-DB, TSIO-520-E, TSIO-520-EB, TSIO-520-G, TSIO-520-H, TSIO-520-J, TSIO-520-JB, TSIO-520-K, TSIO-520-KB, TSIO-520-L, TSIO-520-LB, TSIO-520-M TSIO-520-N, TSIO-520-NB, TSIO-520-P, TSIO-520-R, TSIO-520-T TSIO-520-U, TSIO-520-UB, TSIO-520-VB, TSIO-520-WB, TSIO-550-A, TSIO-550-B, TSIO-550-C, TSIO-550-E, TSIO-520-BE,
6350	LEFT	0	4	DD	08-06350	$817.00	Lyc. AEIO-540-D4A5, AEIO-540-D4B5, AEIO-540-L1B5, IO-540-A1A5, IO-540-B1A5, IO-540-B1C5, IO-540-C1B5, IO-540-C1C5, IO-540-C2C IO-540-C4B5, IO-540-C4C5, IO-540-D4A5, IO-540-D4C5, IO-540-E1A5 IO-540-E1B5, IO-540-G1A5, IO-540-G1B5, IO-540-G1C5, IO-540-G1E5 iO-540-J4A5IO-540-K1A5, IO-540-K1B5, IO-540-K1D5, IO-540-K1F5 IO-540-K1G5, IO-540-K1H5, IO-540-K1J5, IO-540-K1K5, IO-540-L1A5 IO-540-L1C5, IO-540-M1A5, IO-540-N1A5, IO-540-P1A5, IO-540-R1A5 IO-540-S1A5, O-540-A1A , O-540-A1B5, O-540-A1C5, O-540-A1D O-540-A1D5, O-540-A2B, O-540-A3D5, O-540-A4A5, O-540-A4B5 O-540-A4D5, O-540-B1A5, O-540-B2A5, O-540-D1A5, O-540-E4A5 O-540-E4B5, O-540-E4B5-wd, O-540-G1A5, O-540-G1A5-wd, O-540-G2A5, O-540-G2A5-wd, O-540-J3A5, IO-540-AA1A5

Continues on the following page

EP

6300 SERIES MAGNETOS

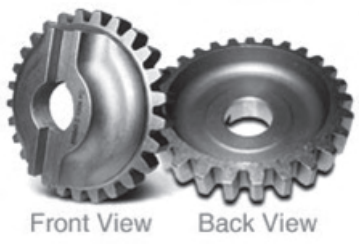
Continued from Previous Page

Magneto	ROT.	LAG	Weight	Type	Part No.	Price	Application
6351	LEFT	35	4.8	IC	08-06351	$968.00	Lyc. AEIO-540-D4B5, AEIO-540-L1B5, IO-540-AB1A5, IO-540-AC1A5 IO-540-G1C5, IO-540-G1D5, IO-540-G1F5, IO-540-K1A5, IO-540-K1B5 IO-540-K1C5, IO-540-K1E5, IO-540-K1G5, IO-540-K1H5, IO-540-K1K5 IO-540-L1A5, IO-540-L1C5, O-540-B2C5, O-540-E4C5, O-540-G1A5 O-540-G1A5-wd, O-540-G2A5, O-540-G2A5-wd, O-540-J3A5 IO-540-D4B5
6355	LEFT	45	4.8	IC	08-06355	$1,116.00	Lyc. IO-540-C2C, O-540-A1A, O-540-A1A5, O-540-A1B5, O-540-A1C5 O-540-A1D5, O-540-A2B, O-540-A4A5, O-540-A4B5, O-540-B2B5 O-540-B2B5-wd, O-540-B2C5-wd, O-540-B4B5, O-540-B4B5-wd, O-540-E4B5-wd, O-540-H2A5, O-540-E4B5
6363	LEFT	30	4	RBP	08-01356	$1,046.00	Lyc. TIO-540-A2B, TIO-540-A2C, TIO-540-J2B
6371	LEFT	0	4	TD	08-01358	$977.00	Lyc. AEIO-540-D4B5, IO-540-G1D5, IO-540-G1E5, IO-540-K1B5 O-540-E4C5, IO-540-S1A5
6393	LEFT	37	4	RBP	08-06393	$1,050.00	Lyc. AEIO-540-D4A5, AEIO-540-D4B5, AEIO-540-L1B5, IO-540-A1A5 IO-540-B1A5, IO-540-B1C5, IO-540-C1B5, IO-540-C1C5, IO-540-C4B5 iO-540-C4C5, IO-540-D4A5, IO-540-D4C5, IO-540-E1A5, IO-540-E1B5 IO-540-G1A5, IO-540-G1B5, IO-540-J4A5, IO-540-K1C5, IO-540-K1D5 IO-540-K1F5, IO-540-K1J5, IO-540-M1A5, IO-540-N1A5, IO-540-P1A5 IO-540-R1A5, IO-540-S1A5, O-540-A1B5, O-540-A1D, O-540-A1D5 O-540-A3D5, O-540-A4D5, O-540-B1A5, O-540-B2A5, O-540-D1A5 O-540-E4A5, O-540-E4C5, IO-540-AA1A5
6399	RIGHT	35	4.9	IC	08-01366	$1,098.00	Franklin 6A-350-C1, 6A-350-C1A, 6A-350-C2, 6A-350-C2A, 6A-350-D1 6A-350-D1A, 6A-350-D1B, 6A4-150-B3, 6A4-150-B31, 6A4-150-B4 6A4-165-B3, 6A4-165-B4, 6A4-165-B6

Abbreviations: DD (Direct Drive), IC (Impulse Coupled), RB (Retard Breaker), TD (Tachometer Drive), P (Pressurized)
Weight does not include harness cap or magneto drive gear, and are provided for reference only.

EP

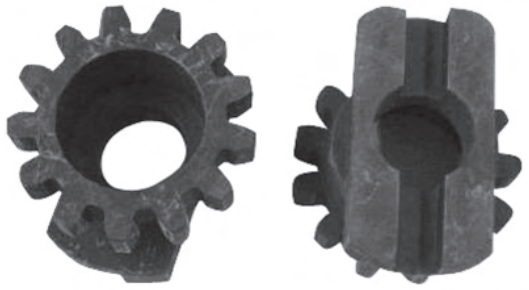
CONTINENTAL MAGNETO DRIVE GEARS



Used on Continental Engines.

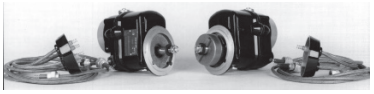
Engine Eligibility	Magneto Gear No.	Part No.	Price
O-200; C90-12, 14, 16; C85-12, 14, 15; C75-12, 15; IO-240-A, B	655845	36066	$723.00
O-200; C90-12, 14, 16; C85-12, 14, 15; C75-12, 15; IO-240-A, B	SA36066		
C-125, C-145, O-300	530603	07-02003	$1,523.00
O/IO-470, 520 Sancast	641728	07-02005	$1,135.00
520-550 Permold	641742	07-02006	$1,487.00
GTSIO-520	632797	07-02007	$1,295.00
GTSIO-520	632799	07-02008	$1,405.00

LYCOMING MAGNETO DRIVE GEARS



Used on Lycoming Engines.

Engine Eligibility	Magneto Gear No.	Part No.	Price
O-235, 320, 360 Impulse Magneto	61665	07-02009	$448.00
O-235,320, 360 Impulse Magneto	SL61665	07-02010	$392.00
O-235,320, 360 Direct Drive Magneto	68C19622	07-02011	$385.00
320, 360, "76"Series	LW-15659	07-02012	$1,477.00
O/IO-360 Dual Magneto	LW-13643	07-02013	$1,286.00
O/IO/LTIO/TIO-540	LW-19096	07-02014	$1,187.00
O/IO/LTIO/TIO-540	LW-19102*	07-02015	$1,369.00
O/IO/LTIO/TIO-540 Dual Magneto	LW-13899	07-02016	$1,371.00



SLICK IGNITION KITS

We offer complete Slick factory upgrade/conversion kits for virtually all general aviation aircraft. These kits include two factory new Slick magnetos, a complete Slick ignition harness, and conversion information. Add $300.00 core charge to the kit prices which is refundable upon return of the two old magnetos to Aircraft Spruce. Specify aircraft and engine make and model when ordering.

Part Numbers listed are Gray. Other colors available are: Blue, Yellow, and Red.

Slick Kit Part No.	Engine Application 4 Cyl. Single Impulse 2 Mags & 1 Set Ignition Harness	Spark Plug Size	Gray Part No. & Plug No.	Price Add $300.00 Core Charge to all kits
K4516	Lycoming: 0-235-C1A, C1C, C2C, E1, E2B, F1, G2B, H2C, J2B 0-320-A1A, A2D, C1A, D1D, D2G, D2H, D3G, E1J, E2D, E2E, E2G, E3D10-320-B1B, E1B, E2B, A2B, AE10-320-E1B, E2B 0-360-A1NG, A2H, A4K, A4M, B1A, C1E, C1F, C2B, C2E, D1A 10-360-B1FG A10-360-A2B AE10-360-A2B, B1F6, B2F6, H1A	5/8" PLUGS INCLUDED	08-07737 (-40)	$2,159.00
			08-07734 (-37B4)	$2,136.00
K4315	Lycoming: 0-235-C1C, C2C, E2B, F1, G2B, J2B, N2C, 0-320-A1A, B1A, B2A, C1A, C2A, C2B, C2C, C3A, C3B, C3C, D1D, D2G, D2H, D3G, E1J, E2D, E2E, E2G, E3D, 0-320-B1B, E1B, A10-320-A2B, AE10-320-E1B, E2B 0-360-A1NG, A2H, A4K, B1A, C1E,C1F,C2B,C2E,D1A 10-360-B1F6 A10-360-A2B AE10-360-A2B, B1F6, B2F6, H1A	3/4" PLUGS INCLUDED	08-07716 (-38)	$2,340.00
			08-07718 (-40)	$2,340.00
Slick Kit Part No.	Engine Application 4 Cyl. Single Impulse	Spark Plug Size	Gray Part No. & Plug No.	Price Add $300.00 Core Charge to all kits
K4517	Lycoming: 0-235-C1, C2A, E2A, F2A; G1, G2A, J2A 0-290-D 0-320-A1B, A2A, A2B, A3A, A3B B1A, B1B, B2A, B2B, B3A, B3B, C2A, C2B, C2C, C3A, C3B, C3C, D1A, E1A, E2A, E2H 10-320-B1C, B2A, E1A, E2A, AE10-320-E1A, E2A 0-360-A1AWD, A2A, A1H, A3A, A4A, A4J, B2A, C1A, C1G, C2A, D2A 10-360-A1B, B4A, AE10-360-A1D, B4A	5/8" PLUGS INCLUDED	08-07739 (-38)	$2,074.00
			08-07741 (-40)	$2,074.00
K4317	Lycoming: 0-235-C1, C2A, C2B, E2A, F2A, F2B; G1, G2A, J2A 0-290-D 0-320-A1B, A2A, A2B, A3A, A3B, B2B, B3A, B3B, D1A, D1C, D1F, D2A, D2C, E1A, E2A, E2H, E3H 10-320-B1C, B2A, D1A, DIB, E1A, E2A A10-320-AIB, B1B, C1B AE10-320-DIB, D2B, E1A, E2A 0-360-A1A, A1AWD, A1FG, A1G, A1G6, A1H, A2A, A2F A2G, A3A, A4A, AHG, A4J, B2A, C1A, C2A, D2A 10-360-A1B, B4A, C1D6, F1A AE10-360-B4A	3/4" PLUGS INCLUDED	08-07740 (-40)	$2,716.00
			08-07722 (-38)	$2,340.00
K4520	Continental:C-75-12, 15 C-85-14, 15, C-90-12, 14, 16, 16F 0-200-A, B, C	5/8"	08-07746 (-40)	$2,257.00
K4335	Consists of 4333 AMAG + One Drive Gear	N/A	K4335	$1,219.00
K4334	A-65 All, A-75 All (Except -12,-15) C-85 All (Except-12, 14, & 15) Includes Drive Gears	5/8"	08-07732 (-40)	$2,654.00
Slick Kit Part No.	Engine Application 6 Cyl. Single Impulse	Spark Plug Size	Gray Part No. & Plug No.	Price Add $300.00 Core Charge to all kits
K6520	0-470, B-C1, C, E, G,	5/8"	08-07711 (-38)	$299.00
			08-07913 (-40)	$2,549.00
K6320	G-C1, H, J, K, K-C1, L, L-C1,M, M-C1, N, P, R, S, U 10-470-A, C, D, E, F, G, H, J, K, L, LO, M, N, P, R, S, T, U, V, VO10-520-A, B, BA, BB, C, CB, D, E, F, G, H, J, K, L, M, MB, N, NB	3/4" PLUGS INCLUDED	08-07872 (-36S)	$3,253.00
			08-07875 (-40)	$2,424.00

Add $300.00 core charge to all kit prices (refundable with return of old Magnetos) Request quotation for kits for unlisted engines.
* Plugs included.

The following information will aid you in selecting the correct magneto, upgrade kit, or ignition harness:

1. Engine Manufacturer: _____

2. Engine Model Number: _____

3. Engine Type (4 or 6 Cylinder): _____

4. Current Ignition System Manufacturer: ____ _____

a) Number of impulse coupled magnetos (1 or 2): _____

Magneto Shaft Rotation (Right or Left) - See dataplate on current magneto _____
Lag Angle_____

b) Number of Direct Drive (Non-Impulse) Magnetos _____

c) Number of Retard Breaker Magnetos _____
d) Are the magnetos pressurized ? _____

e) Spark plug size (5/8" or 3/4") _____

5. Do you want to upgrade from a single impulse to a dual impulse system? _____

If yes, an additional drive gear and/or adapter purchase may be required.

6. Are you upgrading from a 600 Series to a 6200 Series magneto? _____

If yes, you will need to purchase an M3154 Adapter or a magneto equipped with an M3154 Adapter to be able to reuse the existing harness. Alternately, purchase a new harness configured for 6200 Series magnetos.

7. Are you upgrading a complete engine form a TCM/ Bendix to a Slick system ? _____

If yes, purchase a complete Engine Upgrade Kit.

EP

SLICK IGNITION HARNESSES BY CHchampion

AIRCRAFT ENGINE APPLICATION CHART

Engine	Engine Models	Magneto	5/8" X 24 Spark Plug Termination	3/4" X 20 Spark Plug Termination
	Textron Lycoming			
O-235	C	S4-1200	M2365	M2235
O-235	C	S4-20, S4-200	M2364	M2360
O-235	C1,C1B,C2A,C2C,E1,H2C,J2A,J2B,K2C,L2A,L2C,M1,N2A,N2C,P1,P2A	S4-1200	M2365	M2235
O-235	C1,C1B,C2A,C2C,E1,H2C,J2A,J2B,K2C,L2A,L2C,M1,N2A,N2C,P1,P2A	S4-20, S4-200	M2364	M2360
O-235	C1,C1B,C2A,J2A,L2A,M1,N2A,P1,P2A	**4200, 4300**	**M4004**	**M2508**
O-235	C2C,E1,H2C,J2B,K2C,L2C,N2C	**4200, 4300**	**M4001**	**M2508**
O-290	D,D2	**4200, 4300**	**M4004**	**M2508**
O-290	D,D2,D2A,D2C	S4-20, S4-200	M2364	M2360
AEIO-320	D1B,D2B	**4200, 4300**	**M4005**	**M2508**
AEIO-320	D1B,D2B,E1A,E2B	S4-1200	M2365	M2235
AEIO-320	D1B,D2B,E1A,E2B	S4-20, S4-200	M2364	M2360
AEIO-320	E1A	**4200, 4300**	**M4004**	**M2508**
AEIO-320	E2B	**4200, 4300**	**M4001**	**M2508**
AIO-320	B1B	**4200, 4300**	**M4005**	**M2508**
AIO-320	B1B	S4-1200	M2365	M2235
AIO-320	B1B	S4-20, S4-200	M2364	M2360
IO-320	B1A,B1C,B1D,B2A,B2B,C1A,C1C,D1A,D1B,E1A,E2A,E2B,F1A	S4-1200	M2365	M2235
IO-320	B1A,B1C,B1D,B2A,B2B,C1A,D1A,D1B,E1A,E2A,E2B,F1A	S4-20, S4-200	M2364	M2360
IO-320	B1A,C1A,F1A	**4200, 4300**	**M4000**	**M2508**
IO-320	B1C,B2A,E1A,E2A	**4200, 4300**	**M4004**	**M2508**
IO-320	B1D	**4200, 4300**	**M4007**	**M2508**
IO-320	C1C	S4-20, S4-200	M2112	M2360
IO-320	D1A,D1B	**4200, 4300**	**M4005**	**M2508**
IO-320	E2B	**4200, 4300**	**M4001**	**M2508**
LIO-320	B1A,C1A	**4200, 4300**	**M4000**	**M2508**
LIO-320	B1A,C1A	S4-1200	M2365	M2235
LIO-320	B1A,C1A	S4-20, S4-200	M2112	M2360
O-320	A1A,A1B,A2A,A2C,A2D,A3A,A3B,B1A,B2A,B2B,B2D,B3A,B3B,B3C,C1A,C1B,C3A,C3B,D1A,D1B,D1F,D2A,D2B,D2J,D3G,E1A,E1B,E1C,E1F,E2A,E2C,E2D,E2E,E2F,E2G,E2H,E3D,E3H	S4-1200	M2365	M2235
O-320	A1A,A1B,A2A,A2D,A3A,A3B,B1A,B1B,B2A,B2B,B3A,B3B,C1A,C1B,C3A,C3B,D1A,D1B,D2A,D2B,D2J,D3G,E1A,E1B,E1C,E1F,E2A,E2C,E2D,E2E,E2F,E2G,E2H,E3D,E3H	S4-20, S4-200	M2364	M2360
O-320	A1A,A2D,C1A,C3A,D3G,E2D,E2E,E2G,E3D	**4200, 4300**	**M4001**	**M2508**
O-320	A1B,A2A,A2B,A2C,A3A,A3B,B1A,B1B,B2A,B2B,B2C,B2D,B3A,B3B,B3C,C1B,C3B,D1A,D2B,E1A,E2A,E2H	**4200, 4300**	**M4004**	**M2508**
O-320	A2B,A2C,B2C,B2D,B3C	S4-20, S4-200	M2402	M2360
O-320	D1F	S4-20, S4-200	M2363	M2360
O-320	D1F,D2A,E1C,E1F,E2F,E3H	**4200, 4300**	**M4005**	**M2508**
O-320	D2J	**4200, 4300**	**M4002**	**M2508**
O-320	E2C	**4200, 4300**	**M4007**	**M2508**
O-320	H2AD	DUAL		M2917
O-340	A1A	S4-20, S4-200	M2364	M2360
AEIO-360	A1A,A1B,A1B6,A1D,B1F,B1G6,B2F,B2F6,B4A,H1A	S4-1200	M2365	M2235
AEIO-360	A1A,A1B,A1B6,A1D,B1F,B1G6,B2F,B2F6,B4A,H1A	S4-20, S4-200	M2364	M2360
AEIO-360	A1A,A1D,B4A	**4200, 4300**	**M4004**	**M4029**
AEIO-360	A1B,A1B6	**4200, 4300**	**M4012**	**M4029**
AEIO-360	B1F,B2F	**4200, 4300**	**M4005**	**M2508**
AEIO-360	B1G6,B2F6,H1A	**4200, 4300**	**M4001**	**M2508**
AIO-360	A1A,A1B	**4200, 4300**		**M4029**
AIO-360	A1A,A1B	S4-20, S4-200	M2364	M2360
AIO-360	A1A,A1B,B1B	S4-1200	M2365	M2235
AIO-360	A1B,B1B	**4200, 4300**	**M4001**	**M4029**
AIO-360	B1B	S4-1200		M2492
HIO-360	A1A	S4-20, S4-200	M2817	M2859
HIO-360	B1A,C1A	S4-20, S4-200	M2795	M2856
HIO-360	D1A	**4200, 4300**	**M4007**	
HIO-360	D1A	S4-1200	M2655	
HIO-360	E1AD,E1BD,F1AD	DUAL		M2944
HO-360	A1A,B1A,B1BB	S4-20, S4-200	M2364	M2360
IO-360	A1A,A1B,A1B6,A1C,A1D6,A2A,A2B,B1A,B1B,B1D,B1E,B1F,B1F6,B2End,B2Ewd,B2F6,C1A,C1C6,C1D6,D1A,K2A	S4-20, S4-200	M2364	M2360
IO-360	A1A,A1B,A1C,A2A,A2B,B1A,B1B,B1D,B1F,B1F6,B2End,B2Ewd,B2F6,C1A,C1D6,K2A	S4-1200	M2365	M2235
IO-360	A1A,A2A,B1B,B1D,C1A,K2A	**4200, 4300**	**M4004**	**M2508**
IO-360	A1B,A1B6,A1C,A1D6,C1B,C1D6	**4200, 4300**	**M4012**	**M2508**
IO-360	A1B6	S4-1200	M2420	M2641
IO-360	A1B6D,J1A6D	DUAL		M2915
IO-360	A1D6	S4-1200	M2420	M2235
IO-360	A2B,B1E,B2End	**4200, 4300**	**M4006**	**M2508**
IO-360	A3B6D	DUAL		M2916
IO-360	B1E	S4-1200	M2423	M2235
IO-360	B1F,B2Ewd,B2F6	**4200, 4300**	**M4005**	**M2508**
IO-360	B1F6	**4200, 4300**	**M4001**	**M2508**
IO-360	C1B,D1A	S4-1200	M2365	M2616
IO-360	C1C,C1C6,C1E6	**4200, 4300**	**M4027**	**M2508**
IO-360	C1C,C1E6,C1F	S4-1200	M2423	M2616
IO-360	C1C,C1E6,C1F	S4-20, S4-200	M2658	M2661
IO-360	C1C6	S4-1200	M2423	
IO-360	C1F,D1A	**4200, 4300**	**M4007**	**M2508**
IVO-360	A1A	S4-20, S4-200	M2364	M4033
LIO-360	B1A,C1A	S4-20, S4-200	M2364	M2360
LIO-360	C1E6	**4200, 4300**	**M4027**	

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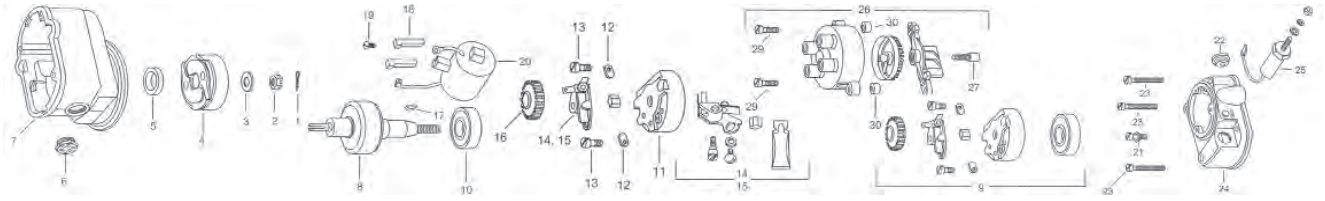
SLICK MAGNETO PARTS

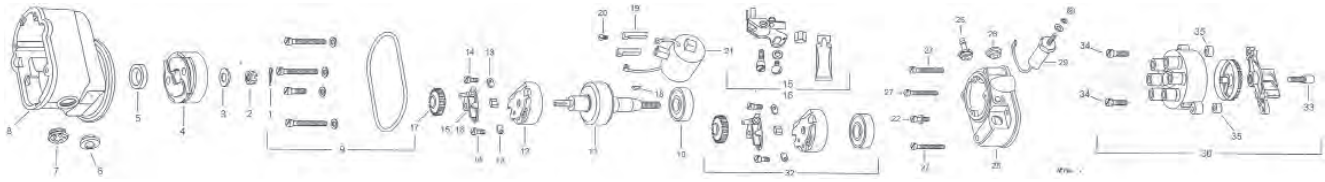


4300 SERVICE PARTS LIST

No.	Description	4301	4302	4303	4316	4330	4331	4342	4344	4345	4347	4348	4353	4354	4370	4371	4372	4373	4374	4381	Qty	Price/ ea.
1	Cotter pin	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	1	$1.00
2	Nut	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	1	$6.50
3	Washer	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	M3172	1	$4.95
4	Impulse Coupling Assy.	M3007	-	-	M3076	M3068	-	-	-	-	-	-	-	M3529	-	M3163	M3100	M3529	M3689	M3007	1	$410.00
5	Oil Seal	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	M3062	1	$11.50
6	Air Vent	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	M1077	1	$5.35
7	Frame	M3859	M3900	M3859	M3888	M3888	M3900	M3900	M3900	M3900	M3900	M3900	M3900	M3859	M3900	M3859	M3859	M3859	M3888	M3859	1	$264.95
8	Rotor	M3073	M3518	M3338	M3047	M3065	M3065	M3548	M3513	M3548	M3548	M3513	M3548	M3158	M3548	M3158	M3158	M3158	M3065	M3158	1	$303.00
9	Bearing Kit	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	K3301	K3301	K3301	K3301	K3301	K3301	K3301	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	K3318-4	1	$223.95
10	Ball Bearing	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	1	$43.65
11	Bearing Cap Ass.	M3485	M3485	M3485	M3485	M3485	M3485	M3630	M3630	M3630	M3630	M3630	M3630	M3630	M3485	M3485	M3485	M3485	M3485	M3485	1	$88.75
12	Bearing Cap Clamp	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	2	$1.45
13	Screw	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	2	$12.95
14	Contact Point Kit-Primary	M3081	M3081	M3081	M3081	M3081	M3081	M3637	M3637	M3637	M3637	M3637	M3637	M3637	M3081	M3081	M3081	M3081	M3081	M3081	1	$56.75
15	Contact Point Kit-Secondary	-	-	-	-	-	-	M3740	M3740	M3637	M3637	M3637	M3637	M3637	-	-	-	-	-	-	1	$89.75
16	Rotor Gear	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	M3827	1	$12.50
17	Woodruff Key	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	1	$1.15
18	Coil Wedge	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	2	$10.70
19	Screw	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	1	---
20	Coil*(see below)	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	K3975	1	$299.00
21	Screw	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	M2555	1	$1.19
22	Air Vent w/Hood	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	M3084	1	$18.85
23	Screw	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	M3015	3	$1.40
24	Housing, Dist.	M3902	M3902	M3902	M3902	M3902	M3902	M3874	M3874	M3832	M3832	M3832	M3832	M3832	M3902	M3902	M3902	M3902	M3902	M3902	1	$165.75
25	Capacitor	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	1	$123.75
26	Dist. Block & Gear Assy.	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	K3822	1	$323.00
27	Carbon Brush	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	1	$10.50
--	Washer	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	M2532	1	$0.47
29	Screw	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	2	$0.90
30	Spacer	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	2	$2.90

*Replaces M3525 Coil

Slick Gasket M3426.....P/N 08-05247..... $13.50



6300 SERVICE PARTS LIST

No.	Description	6310	6314	6320	6324	6331	6340	6350	6351	6355	6360	6361	6362	6363	6364	6365	6367	6371	6380	6382	6390	Qty.	Price ea
1	Cotter pin	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	M2556	1	$1.00
2	Nut, Impulse Coupling	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3019	M3492	M3019	M3492	M3019	M3019	M3019	M3019	1	$6.50
3	Washer	M3172	M3172	M3172	M3172	-	-	-	-	-	-	-	M3172	-	-	-	-	-	M3172	M3172	-	1	$4.95
4	Impulse Coupling Ass.	M3050	M3089	M3050	M3089	M3800	-	-	M3333	M3635	-	M3333	M3050	-	M3590	-	M3524	-	M3050	M3050	-	1	$397.00
5	Oil Seal	M3062	M3062	M3062	M3062	M3331	M3331	M3331	M3331	M3331	M3331	M3331	M3062	M3331	M3062	M3331	M3062	M3331	M3062	M3062	M3331	1	$11.50
6	Pressure Vent Plug	-	-	M3179	M3179	M3179	M3179	-	-	-	M3179	M3179	-	M3179	-	M3179	-	-	-	-	-	1	$4.75
7	Air Vent	M1077	M1077	-	-	-	-	M1077	M1077	M1077	-	-	M1077	-	M1077	-	M1077	M1077	M1968	M1968	M1077	1	$5.35
8	Frame	M3837	M3847	M3837	M3847	M3888	M3900	M3900	M3859	M3859	M3900	M3859	M3837	M3900	M3853	M3900	M3856	M3900	M3850	M3850	M3900	1	$307.00
9	Gasket Pressure Kit	-	-	K3307	K3307	K3307	K3307	-	-	-	K3307	K3307	-	K3307	-	K3307	-	-	-	-	-	1	$82.75
10	Ball Bearing	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	M3006	1	$43.65
11	Rotor	M3047	M3093	M3047	M3093	M3792	M3801	M3117	M3327	M3416	M3117	M3327	M3047	M3117	M3496	M3117	M3499	M3117	M3047	M3047	M3117	1	$326.00
12	Bearing Cap Assembly	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3485	M3630	M3485	M3630	M3485	M3630	M3485	M3485	M3630	1	$88.75
13	Bearing Cap Clamp	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	M3018	2	$1.45
14	Screw	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	M3221	2	$12.95
15	Contact Pt. Kit-Primary	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3081	M3637	M3081	M3637	M3081	M3637	M3081	M3081	M3637	1	$56.75
16	Contact Pt. Kit-Secondary	-	-	-	-	-	-	-	-	-	-	-	-	M3637	-	M3637	-	M3637	-	-	M3740	1	$89.75
17	Rotor Gear	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	M3828	1	$11.50
18	Woodruff Key	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	M2536	1	$1.15
19	Coil Wedge	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	M3040	2	$10.70
20	Screw	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	M3020	1	---
21	Coil	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	M3975	1	$299.00
22	Screw	M2555	M2555	-	-	-	-	M2555	M2555	M2555	-	-	M2555	-	M2555	-	M2555	M2555	M2555	M2555	M2555	1	$1.19
23	Adapter	-	-	-	-	-	-	-	-	-	-	-	M3154	-	-	-	-	-	-	M3154	-	1	$69.75
24	Screw	-	-	-	-	-	-	-	-	-	-	-	M3125	-	-	-	-	-	-	M3125	-	3	$1.25
25	Pressure Tube Fitting	-	-	M3180	M3180	M1280	M1280	-	-	-	M1280	M1280	-	M1280	-	M1280	-	-	-	-	-	1	$10.50
26	Air Vent with Hood	M3084	M3084	-	-	-	-	M3084	M3084	M3084	-	-	M3084	-	M3084	-	M3084	M3084	M3084	M3084	M3084	1	$18.85
27	Screw	M3015	M3015	-	-	-	-	M3015	M3015	M3015	-	-	M3015	-	M3015	-	M3015	M3015	M3015	M3015	M3015	3	$1.40
28	Housing, Distributor	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3902	M3832	M3902	M3832	M3902	M3832	M3902	M3902	M3874	1	$165.75
29	Capacitor	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	K3984	1	$123.75
30	Distributor Block &	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	K3823	1	$338.00
31	Washer	M2532	M2532	-	-	-	-	M2532	M2532	M2532	-	-	M2532	-	M2532	-	M2532	M2532	M2532	M2532	M2532	1	$0.47
32	Bearing Kit	K3320	K3320	K3320	K3320	K3319	K3319	K3319	K3319	K3319	K3319	K3319	K3320	K3302	K3320	K3302	K3320	K3302	K3320	K3320	K3302	1	$177.75
33	Carbon Brush	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	M3215	1	$10.50
34	Screw	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	M3021	2	$0.90
35--	Spacer	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	M3826	2	$2.90

EP

SLICK START – LASAR – BENDIX KITS

SLICK START

The FAA-PMA approved SlickStart™ magneto booster system integrates solid state electronics with conventional ignition hardware to deliver optimum spark energy for improved engine starting under all operating conditions. SlickStart™ delivers over 400% more spark energy during start than conventional impulse coupled or retard breaker systems. This added energy enables the magnetos to fire partially fouled spark plugs, ignite less than optimum fuel mixtures, improve hot engine restarts and improve starting performance during extreme cold weather operations.
SlickStart™ is designed to replace all TCM/Bendix starting vibrators used in conjunction with Slick Aircraft Products magnetos. SlickStart™ is also approved for use with Slick impulse coupled magnetos to enhance engine starting performance. SlickStart™ is not approved for installation on any airframe equipped with TCM/Bendix 20, 200, 1200, D-2000, or D-3000 series impulse coupled or retard breaker magnetos.
SlickStart™ can be installed with either impulse coupled or retard breaker magnetos and can be used with either 12V or 24V electrical systems. Fits all Slick impulse coupled and retard breaker 4200/6200 Series and 4300/6300 Series magnetos. ..... Slick Start for Slick Magnetos ..... P/N 08-01000 ..... $769.00

LASAR ELECTRONIC IGNITION SYSTEM BY CHAMPION

LASAR®, which stands for Limited Authority Spark Advance Regulator, is the first microprocessor based engine control system approved by the FAA for general aviation piston aircraft. With the system operating in its automatic mode, cylinder head temperature, manifold pressure, and engine speed (RPM) are monitored by the LASAR controller to establish and command the optimum ignition timing and spark energy to produce maximum torque from the engine.
Specify exact aircraft and Engine Models for quotation or Lasar systems. *When purchasing slick magnetos separately gaskets are not included.
Benefits from LASAR include:
* Better engine starting with 3 times more spark energy and higher output voltage.
* Smoother transition in ignition timing from engine start to idle
* Increased spark plug life
* Up to 12% Reduced Fuel Consumption
* Faster Rate of Climb
* EGT reduced by 150°F on average
* Up to 8% Increased Horsepower.

Components	Part No.	Price
Champion 4771Slick Lasar Mag.	08-06224	$2,652.00
Champion 4755Slick Lasar Mag.	08-06162	$2,682.00
Champion 4776Slick Lasar Mag.	08-06163	$2,681.00
Champion 6755 Slick Lasar Mag.	08-06164	$2,722.00
Champion 6766 Slick Lasar Mag.	08-06165	$2,681.00
Champion 6776 Slick Lasar Mag.	08-06166	$2,722.00

Components	Part No.	Price
Champion LC1011-04 Lasar Controller	08-06167	$4,209.00
Champion LC1011-10 Lasar Controller	08-06168	$4,209.00
Champion LC1011-14 Lasar Controller	08-06169	$4,209.00
Champion LC101115 Lasar Controller	08-06170	$4,209.00
Champion Lasar Controller Core Charge	08-14778	$250.00

EP

SLICK MAGNETO ASSEMBLY & TIMING KIT

T-100 Assembly and Timing Kit for field-repairable Slick 4300/6300 Series Magnetos.

P/N 07-00788 ..... $494.00

T-200 SLICK® IGNITION HARNESS TOOL KIT

The Slick® Assembly Tool Kit is required to install all Slick Ignition Harness Leads on all magneto harness caps and spark plug termination ends. The complete kit includes: Pressing Tool, #72 Drill Bit, Pin Vise, Stripping Tool, Spring Assembly Tool, and Shield Stripper. Complete instructions for the use of this kit can be found in the Unison Industries L-1178 Service Manual.

P/N 12-00720 ..... $176.75

SLICK MAGNETO REPLACEMENT PARTS BY TEMPEST

Magneto replacement parts manufactured by Aero Accessories Inc. are made to specifications dictated by Federal Aviation Administration parts manufacturing approvals. They are highest quality, direct replacement parts, approved for installation and use on certified aircraft.

Model No.	Description	Part No.	Price
AM3009	Coil	07-02444	$195.75
AM3081*	Contact Assy Kit	07-02445	$28.80
A-13081-8	Contact Lube	07-01081	$0.95
AM2536	Woodruff Key	07-02446	$0.50
AM2540	Cotter Pin	07-02447	$0.32
AM3006	Bearing	07-02448	$22.85

Model No.	Description	Part No.	Price
AM3021	Screw	07-02449	$0.45
AM3062	Oil Seal	07-01089	$6.80
AM3183	Capacitor Assy**	07-02451	$79.80
AM3215	Brush	07-02454	$5.95
AM3485	Bearing & Cap Assy	07-02455	$49.60
AM3611	Cam	07-02456	$9.70

Note: Always refer to the parts and service manual of the original equipment manufacturer or to Aircraft Type Certificate Data Sheets or other FAA-approved data to determine eligibility of a part or component for use in any application.
*Kit Includes: A13081, A13081-1, -2, & AM3611
**Includes: AM3183, AM3182-1, & -2

BENDIX SERIES MAGNETO REPAIR KITS FROM TEMPEST

These magneto repair kits and deluxe repair kits are designed to simplify the Bendix magneto overhaul process by providing all of the commonly needed overhaul parts in one convenient kit. The Repair Kits contain the parts needed for minor repair such as a 500 hour inspection, and the Deluxe Repair Kits contain the parts needed for major repair such as a magneto overhaul. These parts are highest quality direct replacement parts and are approved for installation and use on certificated aircraft. AB-200445SC-D and AB-200445SC-R kits contain two sets of contact assembly kits. Some parts that may be need replacing during magneto overhaul are not included in these kits.

4 CYLINDER KITS

Repair Kit Type	Tempest Kit P/N	Part No.	Price
MINOR	AB-484SC-R	10-04844	$163.75
MINOR	AB-485SC-R	10-04845	$158.75
MINOR	AB-200445SC-R	10-04849	$190.75
DELUXE	AB-484SC-D	10-04851	$423.00
DELUXE	AB-485SC-D	10-04852	$393.00
DELUXE	AB-200445SC-D	10-04855	$422.00

6 CYLINDER KITS

Repair Kit Type	Tempest Kit P/N	Part No.	Price
MINOR	AB-684SC-R	10-04847	$163.75
MINOR	AB-685SC-R	10-04848	$158.95
MINOR	AB-200645SC-R	10-04850	$189.75
DELUXE	AB-684SC-D	10-04853	$449.00
DELUXE	AB-685SC-D	10-04854	$451.00
DELUXE	AB-200645SC-D	10-04856	$479.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR MAGNETO KIT ELIGIBILITY AND CONTENTS.

E-MAG ELECTRONIC IGNITION

Note: New installation requires a harness, and possibly a gear, depending on the application (See Accessories). Verify requirements before ordering.

Of all the E-MAG innovations, the self-powering capability of the "P" Model is the most significant. It solves the largest single issue faced by all electronic ignitions - their need for an uninterruptible power supply.

Power back-up strategies that a) compromise ignition effectiveness, b) solve only half the problem, or c) require additional maintenance are less than ideal. Next-Generation ignitions need a better solution. So what does a next-generation electrical back-up need to do?

Above all, it has to be reliable. When it's needed, it has to work - period. It should operate for as long as needed. Whether it's the last 10 minutes of a Sunday pleasure flight, or you're crossing the Atlantic. It should be maintenance-free. Benign neglect should not prevent it from working. On the rare occasion it's needed, it should automatically engage without operator intervention. A simple and convenient pre-flight check should confirm it's working properly. This P model ignition has an internal three phase brushless alternator that produce enough power to sustain the ignition when the engine is turning 800 rpm, or more. If the aircraft buss voltage goes off-line, the ignition has an internal alternator. With this arrangement, dual electronic ignitions can be run "clean". No back-up batteries and no back-up magnetos.

The P Model Built-In Alternator adds no (zero) mechanical contact/wear parts to the system. Adds only a few ounces of weight. Requires no additional hardware to install. Will operate as long as the engine is turning

E-MAG Aircraft Harness

Description	Part No.	Price
"P" Model (P-MAG) Ignition - Same as the E model above, but has a built-in backup alternator.	07-01292	$1,395.00
E-Mag P Model Ignition with Alternator 4C Continental - Ignition compatible with most 4 cylinder Lycoming and Continental O-200 engines. Specify Ignition type as follows: Lycoming (and like) engine P114-L4, Continental O-200 engines P114-C4	07-01311	$1,245.00
E-MAG Aircraft Harness - Trim-to-fit harness kit. Aircraft Harness kits include with the coil end fittings, tool, and appear on forms as "Air Packs".	Substitute P/N 07-01404 See Below.	
E-Mag Gear Adapter Kit C 200	07-01805	$135.00
E-Mag Spark Plug Adapters w/o Gaskets (4 pk) Short Reach	08-06753	$85.00
E-Mag Spark Plug Adapters w/ Gaskets (4 pk) Short Reach	08-06753-1	$72.75
E-Mag Spark Plug Adapters w/ Gaskets (4 pk) Long Reach	08-07608	$85.00

E-MAG IGNITION KITS

Auto style custom fit kits. Include low-resistance spiral wound lead wire, end fittings, and tool. Auto style harness with terminals and boots installed on both ends. Same wire used in their custom trim-to-fit kit.

E-MAG Auto Harness - 4 Lead Kit without adapter	07-02716	$75.00
E-MAG Spark plug adapters - 4 pk.	08-06753	$85.00

EP

ELECTROAIR IGNITION SYSTEMS

EIS-1 KIT

EIS-2 KIT

EIS-3 KIT

EIS-4 KIT

Electroair Ignition Systems come complete with everything needed to install the EIS. Comprehensive installation procedure leaves little room for error when installing your system. STC'd for most Lycoming 4 cylinder engines. For more information on these kits and STC model list, please visit: www.aircraftspruce.com

EIS-1 KIT	Part No.	Price
4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Mag Timing Housing, MAP Sensor, spark plug wires, instruction manual. Specify engine make and model.	08-05953	$1,635.00
EIS-2 KIT	**Part No.**	**Price**
6-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Crankshaft Timing Wheel, MAP Sensor, spark plug wires, instruction manual. Specify engine make and model.	08-05954	$1,695.00
EIS-3 KIT	**Part No.**	**Price**
Subaru EJ-22 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Subaru Timing Wheel Kit (replaces COG pulley & factory pick-up), and instruction manual.	08-05955	$1,335.00
EIS-4 KIT	**Part No.**	**Price**
Rotorway RW 152 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Trigger Wheel Kit (mounts on V-Belt Pulley), spark plug wires, and instruction manual.	08-05956	$1,365.00

EIS-5 Kit Jabiru 2200 Single Ignition Kit	Part No.	Price
Jabiru 2200 4-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Jabiru Crankshaft Trigger Wheel Kit (mounts just behind prop flange on crankshaft), spark plug wires and instruction manual.	08-07683	$1,396.00
EIS-5D Jabiru 2200 Dual Ignition Kit	**Part No.**	**Price**
Jabiru 2200 4-cylinder Dual Electronic Ignition System comes with: Coil Pack, Controller, Jabiru Dual Pick-up Crankshaft Trigger Wheel Kit (mounts just behind prop flange on crankshaft), spark plug wires and instruction manual.	08-07684	$2,436.00
EIS-6 Jabiru 3300 Single Ignition Kit	**Part No.**	**Price**
Jabiru 3300 6-cylinder Electronic Ignition System comes with: Coil Pack, Controller, Jabiru Crankshaft Trigger Wheel Kit (mounts just behind prop flange on crankshaft), spark plug wires and instruction manual.	08-07685	$1,464.00
EIS-6D Jabiru 3300 Dual Ignition Kit	**Part No.**	**Price**
Jabiru 3300 6-cylinder Dual Electronic Ignition System comes with: Coil Pack, Controller, Jabiru Dual Pick-up Crankshaft Trigger Wheel Kit (mounts just behind prop flange on crankshaft), spark plug wires and instruction manual.	08-07686	$2,596.00

KITS ABOVE ARE 14V. FOR 24V KITS ADD -24 TO THE PART NUMBERS LISTED.

ELECTROAIR – IGNITION HARNESSES

ELECTROAIR FOUR CYLINDER ELECTRONIC IGNITION KITS

The EIS-41000 Series Electronic Ignition Kit is a fully STC'd kit for most Lycoming 4cyl engines. Replacing one magneto with the EIS-41000 will typically improve fuel economy on average by 10-15% (many operators have reported consistent fuel savings of 1gph or greater). Additionally, there will be an improvement in horsepower, smoother engine operation, and improved high altitude performance. Used on either 12V or 24V systems.
Kit includes: all the required parts to replace the direct drive magneto (typically, the right hand mag), or the Impulse Coupled Magneto (typically left handed) in most 4cyl Lycoming engines. (Please refer to the FAA approved model list to verify the system can be installed on your engine - Note: engines are being added regularly).

Description	Part No.	Price
EIS-41000 Direct Drive (non-impulse coupled)	08-07272	$3,060.00
EIS-41000IC Impulse Coupled	08-07505	$3,060.00
EIS-41000T Twin Engine Aircraft; Lycoming 4cyl Engines. Standard Rotation, Direct Drive (non-impulse coupled) Magneto Replacement	08-07667	$3,060.00
EIS-41000TIC Twin Engine Aircraft; Lycoming 4cyl Engines. Standard Rotation Impulse Coupled Magneto Replacement	08-07668	$3,060.00
EIS-41000TLH Twin Engine Aircraft; Lycoming 4cyl Engines. Counter-Rotating, Direct Drive (non-impulse coupled) Magneto Replacement	08-07669	$3,060.00
EIS-41000TLHIC Twin Engine Aircraft; Lycoming 4cyl Engines. Counter Rotating, Impulse Coupled Magneto Replacement	08-07670	$3,060.00

EP

ELECTROAIR 6 CYLINDER ELECTRONIC IGNITION KITS

The EIS-61000 Electronic Ignition Kit is a fully STC'd kit for Continental 470 & 520, non-turbo'd, series engines, installed on single engine aircraft. Replacing one magneto with the EIS-61000 will typically improve fuel economy. This kit can be used on either 12V or 24V systems.
Kit includes: all the required parts to replace one magneto.

Description	Part No.	Price
EIS 61000-1C Electroair Cont. 6 Cyl.	08-12237	$4,950.00
EIS 6100-T1C Electroair Cont. 6 Cyl.	08-13155	$4,950.00
EA-6000/EA-6000TP the brains of the Electroair Electronic Ignition System. This replacement unit if for 6cyl engines. This unit can be used in either a 12V or 24V application.	08-13157	$2,354.00
EA-11000 Crank Shaft Trigger Wheel kit mounts on the bare spot of the crank shaft just behind the propeller flange. NOTE: Minimum clearance of 0.650" between the front of the engine case and propeller studs is REQUIRED. Please check this dimension before starting installation ordering the kit.	08-13158	$901.00
EA-8000 is the 6cyl Coil Pack used in the EIS-61000 Electronic Ignition System. This unit can be used in either a 12V or 24V application.	08-13159	$612.00

ELECTROAIR SPARK PLUGS

Electroair partnered with Tempest to produce its new HE spark plug line. The HE plugs are STC'd and PMA'd for use with the Electroair electronic ignition systems. The plugs are approved for all aircraft, and installations approved for use with the Electroair electronic ignition systems.

Electroair's "HE" plug line include a massive electrode with extended reach outer electrodes has a gap of 0.032. This optimal gap accommodates the high energy output of 70,000 volts delivered by the Electroair system.

EAREM37HE..... P/N 08-07714 ..... $49.50
EAREM38HE..... P/N 08-07715 ..... $92.25

SEE WWW.AIRCRAFTSPRUCE.COM FOR ELECTROAIR TIMING KITS AND PARTS.

LIGHTWEIGHT HIGH TEMPERATURE SHIELDED IGNITION HARNESSES

MFG. BY ACS PRODUCTS CO.

New production ignition harnesses at remarkably low prices. Late type 5MM wire constructed of 16 strands of tightly braided copper wire impregnated with scuff resistant white silicone. All strands must fracture before a complete open circuit type failure occurs thus extending lead life. Lead flexibility is retained from -65° to 400° F. Moisture and cleaning solvent penetration is eliminated by the impregnated silicone coating. This extremely flexible wire lends itself to sharp bends thereby eliminating the need for old style harness elbows. No soldered joints in the grounding circuit. Custom made for most 4 cylinder and 6 cylinder engines using Bendix or Eisemann magnetos and 4 cylinder engines using Slick magnetos. Cable outlet plates are not furnished for Bendix and Eisemann mags as these are already installed on the magnetos in service. They must be purchased separately for new magneto installations. Harnesses for Slick magnetos are furnished with the backplates installed. Standard harnesses for the Bendix S4/S6 mags are fitted with a male nut which screws into the threaded outlet plate on the back of the mag. Harnesses for old style Bendix SF4 and SF6 magnetos are fitted with female nuts.

HARNESSES FOR BENDIX AND EISEMANN MAGNETOS

All 4-Cylinder Harnesses (8 wires)..... $179.50
All 6-Cylinder Harnesses (12 wires)..... $242.95
(Not Available for Bendix S1200 Magnetos)
Replacement Leads to 48" (Specify Length)..... Call For Quote
(Bendix & Eisemann only)

HARNESSES FOR SLICK MAGNETOS

For 4000, 4200 & 4300 Series Mags (4 Cyl.) Only..... $187.95

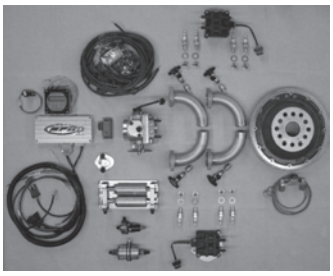
All Harnesses Furnished with Cable Ties and Clamps
For plugs with 5/8-24 barrel size only.

BENDIX MAGNETOS	
Engine/Magneto	Part No.
Cont. A-65/S4	12301-02
C-85/S4	12301-05
C-90/S4	12301-06
0-200/S4	12301-05
LYC. 0-100/S4	12301-21
0-235/S4	12301-21
0-290/S4	12301-21
0-320/S4	12301-22
0-360/S4	12301-22
Cont. A-65/SF4	12302-02
A-75/SF4	12302-03
Lyc. 0-100/SF4	12302-20
0-235/SF4	12302-20
0-290/SF4	12302-20
Cont. E-185/S6	12305-10
E-225/S6	12305-11
O-470/S6	12305-13
C-145/S6	12305-09
O-300/S6	12305-09
Lyc. 0-540/S6	12305-22
IO-540/S6	12305-22
Franklin165/S6	12305-41
Cont.C-125-SF6	12307-08
Lyc.0-435/SF6	12307-23
SLICK MAGNETOS	

Engine/Magneto	Part No.
VW (M2266) *	12304-32
Lyc 0-235 (M2363)	12304-33
0-290 (M2363)	12304-33
0-320,0-360 (M2363)	12304-33
Cont. 0-200 (1780)	12304-31
C-75 (1780)	12304-31
C-85 (1780)	12304-31
C-90 (1780)	12304-31
EISEMANN MAGNETOS	
Engine/Magneto	Part No.
Cont A65/LA-4	12303-04
A75/LA-4	12303-04
C-85/LA-4	12303-07
E-185/LA-6	12306-12
Franklin 150/LA-6	12306-40
Continental C90/LA4	12303-08
Continental E-185/LA6	12306-12
Franklin 150/LA6	12306-40

*This harness only comes with 4-leads.
ACS Products ignition harnesses can be used on experimental aircraft or on certified aircraft with field approval (FAA Form 337). If FAA/PMA harness is mandatory or if for use with 3/4" spark plugs, use Slick Bendix, Aero-Lite or Champion harnesses.

ELECTRONIC IGNITION SYSTEMS



ELECTRONIC ENGINE MANAGEMENT SYSTEM

The EFII system is a complete electronic engine management system for light aircraft engines. The EFII system can be used in any Experimental category aircraft using one of these engines.

The EFII system is very similar to what you would find on any modern automobile engine. It is a computer controlled electronic fuel injection and electronic ignition system. The system is controlled by an ECU (the computer) and incorporates a fully mapped fuel curve and ignition timing curve. The electronic fuel injection portion of the system utilizes an electronic fuel injector valve that is installed into each intake tube, just under the engine cylinder and a throttle body that replaces the typical carburetor or mechanical injector butterfly assembly. The electronic ignition portion of the system utilizes high energy inductive ignition coils instead of magnetos to produce a very strong and efficient spark to each plug.

The EPA has recently started the rules making process to decide the timeframe to mandate Unleaded Avgas. If you have an EFII system on your engine, you will already be compatible with the new fuel.

In The Box:

- Spark plug wire set, 8 plug
- Iridium spark plugs, 8 ea.
- High energy inductive ignition coil pack w/integral magneto block off plate, 2 ea.
- Spark plug adapters, 18mm to 14mm, 8 ea.
- EFII ultra compact electronic fuel injector assemblies with weld-in bases, 4ea. (note - customer provides intake tubes for weld-in base installation)
- EFII modified flywheel w/trigger magnets added. (note - customer provides flywheel for modification)
- Billet Hall effect crank trigger (no case drilling required)
- Dual fuel pump module
- Fuel pressure regulator
- High pressure EFII fuel filter
- EFII wire harness - All Tefzel harness with sealed waterproof connectors
- Engine computer - ECU
- Mechanical fuel pump block off plate w/integral engine temp sensor
- MAP sensor
- EFII throttle body w/throttle position sensor, intake air temp sensor, and Lycoming sump adapter
- Aviation programmer for ECU
- Mixture adjust knob - for easy system tuning.

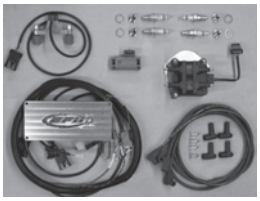
Features:

- The advantages of an electronically controlled engine are numerous and include:
- Fully compatible with 100LL, auto gas and future Unleaded Avgas
- Approx. 10% increase in available horsepower
- Automatic mixture control (no mixture knob to fool with)
- A proper ignition timing curve to bring out the true power potential of your engine
- Fuel savings from always having the correct fuel mixture
- Decreased lead fouling
- Improved engine starting - No "hot start" or "cold start" problems
- Decreased weight - no magnetos or mechanical fuel pump
- Tunability - your fuel map can be fine tuned for your particular installation
- Lower maintenance costs - less lead build up means less wear and less oil contamination, uses automotive Iridium spark plugs.

P/N 07-01849 ..... $4,985.00

EP

SINGLE MAGNETO REPLACEMENT IGNITION



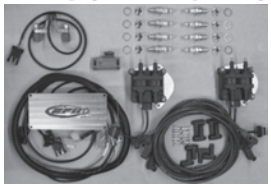
Electronic ignition systems for Lycoming engines have been around for awhile but this may be a better idea - you be the judge.

The manufacturer has taken the core control system of the EFII fuel injection system and pared it down to the ignition components. This allows them to offer a sinlge mag replacement high energy ignition system for your aircraft. And what is unique about that you ask? Well, the EFII system uses a very high energy inductive coil pack to deliver several times the spark energy of the most popular competitor system for more complete combustion. Secondly, once you have installed one of their ignition systems, you have opened the door for an easy upgrade in the future to the full electronic fuel injection and ignition EFII system. You can start now with a single or dual mag replacement ignition that utilizes their billet Hall effect crank trigger and proven engine computer and simply add the rest of the EFII fuel injection kit in the future if you choose to do so. This easy migration path between systems can not be matched by any other ignition or fuel injection company.

In The Box: Ignition computer, high energy coil pack with integral magneto block off plate, Billet Hall effect crank trigger (no case drilling required), high quality silicon spark plug wires, 4 ea., automotive Iridium spark plugs, 4 ea., spark plug adapters, 4 ea., MAP sensor, Tefzel plug and play wiring harness with environmentally sealed connectors.

P/N 07-01850 ..... $1,295.00

DUAL MAGNETO REPLACEMENT IGNITION



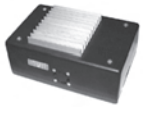
Electronic ignition systems for Lycoming engines have been around for awhile but this may be a better idea - you be the judge.

The manufacturer has taken the core control system of the EFII fuel injection system and pared it down to the ignition components. This allows them to offer a dual mag replacement high energy ignition system for your aircraft. And what is unique about that you ask? Well, the EFII system uses a very high energy inductive coil pack to deliver several times the spark energy of the most popular competitor system for more complete combustion. Secondly, once you have installed one of these ignition systems, you have opened the door for an easy upgrade in the future to the full electronic fuel injection and ignition EFII system. You can start now with a single or dual mag replacement ignition that utilizes their billet Hall effect crank trigger and proven engine computer and simply add the rest of the EFII fuel injection kit in the future if you choose to do so. This easy migration path between systems can not be matched by any other ignition or fuel injection company.

In The Box: Ignition computer, high energy coil packs with integral magneto block off plate, Billet Hall effect crank trigger (no case drilling required), high quality silicon spark plug wires, 8 ea., automotive Iridium spark plugs, 8 ea., spark plug adapters, 8 ea., MAP sensor, Tefzel plug and play wiring harness with environmentally sealed connectors.

P/N 07-01851 ..... $1,945.00

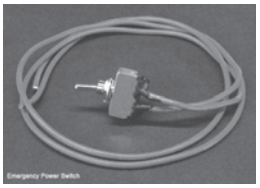
BUS MANAGER



This Bus Manager is an important safety device for aircraft that have critical electronics that require a protected essential bus. This would include aircraft that are running electronic fuel injection, electronic ignition, electric fuel pumps, or critical instrumentation. Provides a triple redundant essential bus for all critical electronic equipment. This redundency is crucial for engines that rely on uninterupted +12V power to critical items. The end user no longer has to attempt to come up with a home brew bus system for their plane. The Bus Manager has been professionally designed and over-built to faithfully provide extreme reliability.

P/N 07-01852 ..... $595.00

BUS MANAGER ACCESSORY KIT



The Accessory Kit for the Bus Manager consists of all the parts necessary to setup a Bus Manager based electrical distribution system for experimental aircraft.

P/N 07-01853 ..... $145.00

ELECTRIC BOOST PUMP MODULE

The EFII Boost Pump Module (BPM) brings a new level of installation simplicity and functionality to the fuel system of your aircraft equipped with Bendix, AFP or Precision Airmotive type mechanical fuel injection. The BPM reduces a time consuming and frustrating plumbing job to a simple and clean, easy to set up installation. It is used to supply a steady source of 30PSI fuel to your engine during take-off, landing, priming, or emergency situations. The BPM has integral back flow prevention and pressure regulation valving.

Standard ..... P/N 07-01854 ..... $687.00
w/ 90° fitting..... P/N 07-02461 ..... $645.00

LIGHT SPEED ENGINEERING PLASMA IGNITION SYSTEM

Light Speed Engineering, LLC (LSE) is a pioneer in the design and production of ignition systems for experimental aircraft. 22 years of research and development have been invested in producing the PLASMA CDI (Capacitive Discharge Ignition) system product line. LSE's PLASMA CD systems are the ideal replacement for yesterday's magneto technology. You can replace one mag with a PLASMA CDI or, for maximum performance, replace both magnetos with these state of the art systems. The Plasma CDI is a solid-state, high performance ignition system intended for today's home built aircraft. Light Speed Engineering currently offers two Capacitive Discharge Ignition Systems: the PLASMA II PLUS and the PLASMA III. Standard Plasma CDI kits include: direct crank sensor assembly, high tension leads, harness, spark plugs, spark plug adapters, and ignition coils with mounting bracket. One or two systems can be used.

PLASMA II PLUS CDI

The Plasma II is Light Speed Engineering's basic electronic ignition system for aircraft. It is a lightweight, high-energy capacitor discharge system containing all of the essential Plasma CDI features. Its smaller size and lighter weight sets it apart from any other ignition source.

Like all LSE ignition systems it features automatic ignition advance based on engine load and RPM, auto retard for starting and a standard pulse tachometer output. The Plasma II was designed to provide a high tech ignition source at the cost of magnetos.

PLASMA III CDI

Light Speed Engineering has introduced a new ignition system to its line of products. The new Plasma III Capacitor Discharge System is the latest high performance ignition for all 4-cyl and 6-cyl aircraft engines. Its long duration spark and optimized timing curve makes more horsepower and improves fuel efficiency- at all altitudes. Other benefits include quick starts, reduced maintenance, light weight, lower EGT's and up to 20% more range. As with all LSE ignitions, RPM and manifold pressure inputs are used for our proprietary timing curves. The Plasma III is also capable of displaying the current timing advance, manifold pressure and rpm on an optional lightweight LCD display. The Plasma III can easily replace one or both magnetos, making your engine run better under all conditions.

PLASMA CAPACITIVE DISCHARGE IGNITION SYSTEMS

All Plasma CDI systems include: high tension leads, harness, spark plugs, spark plug adapters, ignition coils with mounting bracket, and Hall Effect Sensor module OR Direct Crank Sensor assembly.

Description	Part No.	Price
Plasma II Plus: 4 Cylinder Direct Crank Sensor	08-06294	$1,075.00
Plasma II Plus: 4 Cylinder Hall Effect Module	08-06295	$1,276.00
Plasma II Plus: 4 Cylinder with Mini DC Sensor	08-12135	$1,075.00
Plasma III: 4 Cylinder Direct Crank Sensor	08-00675	$1,363.00
Plasma III: 4 Cylinder Hall Effect Module	08-00676	$1,556.00
Plasma III: 6 Cylinder Direct Crank Sensor	08-00677	$1,450.00
Plasma III: 4 Cylinder with Mini DC Sensor	08-12136	$1,363.00
Plasma III: 6 Cylinder with Mini DC Sensor	08-12137	$1,450.00
Dual Plasma CDI Systems		
Dual Plasma II Plus: 4 Cylinder Direct Crank Sensor	08-06296	$2,115.00
Dual Plasma II Plus: 4 Cylinder Hall Effect Module	08-06297	$2,495.00
Dual Plasma II Plus: 4 Cylinder with Mini DC Sensor	08-12138	$2,115.00
Dual Plasma III: 4 Cylinder Direct Crank Sensor	08-06298	$2,649.00
Dual Plasma III: 4 Cylinder Hall Effect Module	08-06299	$2,995.00
Dual Plasma III: 6 Cylinder Direct Crank Sensor	08-06300	$2,895.00
Dual Plasma III: 4 Cylinder with Mini DC Sensor	08-12139	$2,649.00
Dual Plasma III: 6 Cylinder with Mini DC Sensor	08-12140	$2,895.00
Options		
On all Turbo and Super-Charged ignition systems add $124.95	08-06301	$124.95
On all Franklin and Continental engine ignition systems add $194.99	08-06302	$194.99

S.5 SPARK PLUG ADAPTER FOR 14MM SPARK PLUGS

RECOMMENDED BY KLAUS SAVIER OF LSE

The high performance, electronic ignition, has demonstrated it's reliability, easy starts, greater power at altitude, and leaner, more efficient combustion. Yet your expensive aircraft Spark Plugs, can prevent the pilot from taking full advantage or this electronic powerhouse. The S.5 is a precision CNC adapter, that installs easily in aircraft engines, that use 18mm "short reach" spark plugs, transforming the 18mm threaded hole down to 14mm.

The Spark Plug Adapter allows you to use:

- High performance 14mm automotive/ motorcycle spark plugs, that offer an almost unlimited variety of heat ranges, & electrode styles, designed specifically to take advantage of electronic ignitions.
- Shorter plugs with 90° silicon boots, give greater clearance for sleeker cowls and less drag, meaning higher speed, using less power.
- Precious and semi precious metal racing spark plugs (the ultimate in reliability and long life) for less than you'd pay for ordinary aircraf plugs. More speed, power, efficiency, as well as a cost savings each time you change spark plugs.
- New & improved corrosion resistant design substantially extends the operational life of the S.5 Spark Plug Adapter.

Set of 4 adapters without gaskets ..... P/N 08-06753 ..... $85.00
Set of 4 adapters with gaskets ..... P/N 08-06753-1 ..... $72.75

WIRE TERMINAL CLIP

For 7 MM unshielded harnesses.
P/N 07-03500 ..... $0.45

HIGH TENSION CABLE

Unshielded 7MM ignition cable consists of tinned conductor, rubber insulation, reinforced glass braid and Hypalon jacket that resists sun, weather, heat, chemicals and oxidation by ozone. Temperature range -65° to 250°F.
P/N 07-03700 ..... $1.22 Ft.

P/N 526

M2376

P/N M2755

ENGINE BAFFLE IGNITION WIRE SEALS

Seal Type	Part No.	Each
5mm Wire Seal One-Wire	526	$6.50
5mm Wire Seal Three-Wire	376	$6.50
5mm Wire Seal Slick 3-Wire	M2376	$22.75
5mm Wire Seal Slick 2-Wire	M2375	$21.85
5mm Wire clamp Slick 2-Wire	M2755	$4.55

BUZZ AERO ROCKER COVERS

The Buzz Aero Model AC2003 cover is made to fit Lycoming straight valve cylinders. Available in red, white, blue or black anodizing. Specs: Wt: 9oz; Machined from billet aluminum; Nickel chrome plated stainless steel socket head cap screws supplied with kit;

Set of gaskets supplied with each kit. AC2003 Applications: Lyc. 0-235, 0-290, 0, I0, LI0-320, 0-340, 0- 360-A, B, C, D; I0-360-B; H0-360-A, B; HI0-360-B, V0, IV0-360; 0- 540-A, B, E, F, G, I0-540-C, D, J, N, R.

Also Available by Special Order: AC2004 for Engines: I0-360-A, C, D; AI0-360-A, B; H0-360-A, C, D, TI0-360-A; LI0-360-C1E6; V0, G0-435; G0-480; I0, V0, TVI0-540; I0- 720, TV0-435.

Description	Part No.	Price
Rocker Cover 4 Cyl. Kit Red	08-00806-1	Call for price
Rocker Cover 4 Cyl. Kit White	08-00806-2	Call for price
Rocker Cover 4 Cyl. Kit Blue	08-00806-3	Call for price
Rocker Cover 4 Cyl. Kit Black	08-00806-4	Call for price
Rocker Cover 6 Cyl. Kit Red	08-00807-1	Call for price
Rocker Cover 6 Cyl. Kit White	08-00807-2	Call for price
Rocker Cover 6 Cyl. Kit Blue	08-00807-3	Call for price
Rocker Cover 6 Cyl. Kit Black	08-00807-4	Call for price

Call for Pricing!

TEMPEST AVIATION SPARK PLUG APPLICATION CHART

FAA-PMA Approved Engine Applications	Massive Electrode								Fine-Wire Electrode								
	5/8"-24 thread				3/4"- 20 thread				5/8"-24 thread				3/4"- 20 thread				
Textron Lycoming	UREB37E	UREM37BY	UREM38E	UREM40E	URHB32E	URHB37E	URHM38E	URHM40E	UREB36S	UREM38S	URHB32S	URHB36S	URHM38S				
AEIO-320: D1B, D2B, E1A, E1B, E2A, E2B		x	x	x			x	x		x			x				
AEIO-360: A2A, A2C	x	x	x	x			x	x	x	x			x				
AEIO-360: A2B	x	x	x	x		x	x	x	x	x			x				
AEIO-360: A1D, A1E	x	x	x			x	x		x	x			x				
AEIO-360: B1D, B1F6, B2F6, H1A		x	x	x			x	x	x	x			x				
AEIO-360: B1H									x	x			x				
AEIO-360: A1C	x	x	x	x			x	x		x			x				
AEIO-360: A1A, A1B, A1B6	x	x	x			x	x			x			x				
AEIO-360: A1E6		x	x	x			x	x		x			x				
AEIO-360: B1B, B1F, B1G6, B2F, B4A, H1B		x	x	x			x	x		x			x				
AEIO-540: D4B5			x	x			x	x	x	x			x				
AEIO-540: D4A5, D4C5, D4D5, L1B5, L1B5D			x	x			x	x		x			x				
AEIO-540: L1D5										x			x				
AIO-320: A1B, A2A, A2B, B1B, C1B		x	x	x			x	x		x			x				
AIO-320: A1A							x	x									
AIO-360: A1A, A1B, A2A, A2B		x	x	x			x	x		x			x				
AIO-360: B1B		x	x	x			x	x					x				
GO-435: C2, C2A, C2A2, C2B, C2B1, C2B2, C2C, C2D, C2E, D1		x	x	x			x	x		x			x				
GO-480: G1A6	x				x	x					x	x					
GO-480: B, B1A6, B1B, B1C, B1D, C1B6, C1D6, C2C6, C2D6, C2E6, C3A6, D1A, F1A6, F2A6, F2D6, F3A6, F3B6, F4A6, F4B6, F6			x	x			x	x		x			x				
GO-480: G1B6, G1D6, G1H6, G1J6, G2D6, G2F6			x				x				x	x					
GO-480: E1A6										x			x				
GSO-480: A1C6, A2A6			x				x			x			x				
GSO-480: B1A6, B1B3, B1B6, B1C6, B1E6, B1G6, B1J6, B2C6, B2D6, B2G6, B2H6			x				x										
GSO-480: A1A6										x			x				
HIO-360: E1BD					x	x			x		x						
HIO-360: A1A, A1B, B1A, B1B		x	x	x			x	x		x			x				
HIO-360: C1A, C1B, D1A			x				x			x			x				
HIO-360: E1AD, F1AD					x	x					x						
HO-360: A1A, C1A		x	x				x			x			x				
HO-360: B1A, B1B			x				x			x			x				
IGO-480: A1A6, A1B6											x	x					
IGO-540: A1A, A1B, A1C, B1A, B1B, B1C	x				x	x				x	x	x	x				
IGSO-480: 13/16" reach cyl.	x				x	x					x	x					
IGSO-480: 1/2" reach cyl.			x				x			x			x				
IGSO-540: B1A, B1C	x				x	x				x	x		x				
IGSO-540: A1A, A1C, A1D, A1E, A1F, A1H	x				x	x					x						
IO-320: F1A	x					x			x	x			x				
IO-320: C1B		x	x	x			x	x	x	x			x				
IO-320: A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1B, D1C		x	x	x			x	x		x			x				
IO-320: E1A, E1B, E2A, E2B		x		x			x	x		x			x				
IO-320: 1/2" reach cyl.				x				x		x			x				
IO-320: 13/16" reach cyl.						x											
IO-360: C1A	x					x			x	x			x				
IO-360: F1A	x			x		x			x	x			x				
IO-360: A1B6		x	x				x		x	x			x				
IO-360: A1B6D	x					x				x			x				
IO-360: A1A, A1B, A1C, A1D, A1D6, A1D6D, A2A, A2B, A2C, A3B6, A3D6D, C1B, C1C, C1C6, C1D6, C1E6, C1E6D, C1F, D1A, J1A6D, J1AD		x	x				x			x			x				
IO-360: B1A, B1B, B1C, B1D, B1E, B1F, B1F6, B1G6, B2E-nd, B2E-wd, B2F, B2F6, B4A, E1A		x	x	x			x	x		x			x				
IO-360: A3B6D		x	x				x			x			x				
IO-360: K2A, L2A			x	x			x	x		x			x				
IO-360: M1A				x						x			x				
IO-360: C1G6													x				
IO-540: P1A5, R1A5	x				x	x			x	x	x	x	x				
IO-540: K1A5, K1A5D, K1B5D, K1G5D, K1H5, K1J5, K2A5			x	x			x	x	x	x	x	x	x				
IO-540: K1C5, K1D5, K1E5D, K1F5, K1F5D, K1G5, K1J5D, K1K5			x	x			x	x	x	x			x				
IO-540: E1A5, E1B5, E1C5, K1B5					x	x			x	x	x	x	x				
IO-540: J4A5					x	x			x	x		x	x				
IO-540: K1E5					x	x			x	x			x				
IO-540: S1A5, U1A5D, U1B5D	x				x	x				x	x	x	x				
IO-540: N1A5	x				x	x				x	x		x				
IO-540: M1A5, M1A5D, M1B5D, M1C5, M2A5D	x				x	x				x			x				
IO-540: AA1A5, AA1B5	x				x	x					x	x					
IO-540: G1A5, G1B5, G1C5, G1D5, G1E5, G1F5			x	x			x	x		x	x	x	x				
IO-540: A1A5, AC1A5, B1A5, B1B5, B1C5, C1B5, C1C5, C2C, C4B5, C4C5, C4D5, C4D5D, D4A5, D4B5, D4C5, L1A5, L1A5D, L1B5D, L1C5, T4A5D, T4B5, T4B5D, T4C5D, V4A5D			x	x			x	x		x			x				
IO-540: AB1A5, W1A5, W1A5D, W3A5D			x	x			x	x									
IO-540: C4B5D										x			x				
IO-720: 13/16" reach cyl.	x				x	x					x	x					
IO-720: 1/2" reach cyl.			x				x			x			x				
IVO-360: A1A	x				x	x					x	x					
IVO-540: A1A	x					x											
LHIO-360: C1A, C1B			x				x										
LHIO-360: F1AD					x	x											
LIO-320: C1A	x					x				x			x				
LIO-320: B1A		x	x	x			x	x		x			x				
LIO-360: C1E6		x	x				x			x			x				
LO-360: A1G6D, A1H6		x	x	x			x	x		x			x				
LO-360: E1A6D, E1AD, E2AD, E2BD			x	x			x	x		x			x				
LTIO-540: F2BD, J2B, J2BD, N2BD, R2AD					x	x					x	x					
LTIO-540: K1AD, U2A, V2AD, W2A					x	x											
LTO-360: E1A6D	x				x	x					x	x					
LTO-360: A1A6D	x				x	x					x						
O-235: C1, C1A, C1B, C1C, C2A, C2B, C2C, E1, E1B, E2A, E2B, F1, F1B, F2A, F2B, G1, G1B, G2A, G2B, H2C, J2A, J2B, K2A, K2B, K2C, L2A, L2C, M1, M2C, M3C, N2A, N2C, P1, P2A, P2C, P3C		x	x	x			x	x		x			x				
O-290: A, AP, B, C, CP, D2A, D2B, D2C		x	x	x			x	x		x			x				
O-290: D, D2				x				x		x			x				
O-320: D1A, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E2A, E2C		x	x	x			x	x		x			x				
O-320: A1A, A1B, A2A, A2B, A2C, A2D, A3A, A3B, A3C, B1A, B1B, B2A, B2C, B2D, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C2C, C3A, C3B, C3C, E1A, E1B, E1C, E1F, E1J, E2B, E2D, E2F, E2G, E2H, E3D, E3H		x	x	x			x	x		x			x				

FAA-PMA Approved Engine Applications	Massive Electrode								Fine-Wire Electrode								
	5/8"-24 thread				3/4"- 20 thread				5/8"-24 thread				3/4"- 20 thread				
Textron Lycoming	UREB37E	UREM37BY	UREM38E	UREM40E	URHB32E	URHB37E	URHM38E	URHM40E	UREB36S	UREM38S	URHB32S	URHB36S	URHM38S				
O-320: H1AD, H1BD, H2AD, H2BD, H3AD, H3BD			x	x			x	x		x			x				
O-320: B2B										x			x				
O-340: A1A, A2A, B1A			x	x			x	x		x			x				
O-360: A1A-nd, A1A-wd, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1LD, A1P, A2A, A2D, A2E, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4K, A4M, A4N, A4P, A5AD, B1A, B1B, B2A, B2B, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D1A, D2A, D2B, F1A6		x	x	x			x	x		x			x				
O-360: E1A6D, E1AD, E1BD, E2AD, E2BD, G1A6, J2A			x	x			x	x		x			x				
O-435: A, A2, C2			x	x			x	x		x			x				
O-435: C, C1, K, K1			x				x			x			x				
O-435: B										x			x				
O-435: 1/2" reach cyl., 25												x					
O-540: L3C5D	x					x				x			x				
O-540: A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2BS-wd, B2C5, B2C5-wd, B4A5, B4B5, B4B5-wd, E4A5, E4B5, E4B5-wd, E4C5, F1A5, F1B5, G1A5, G1A5-wd, G2A5, G2A5-wd, H1A5, H1A5D, H1B5D, H2A5, H2A5D, H2B5D, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D			x	x			x	x		x			x				
O-540: D1A5										x			x				
R-680: 2, 5, 6, B2, B4, B4B, B4C, B4D, B4E, B5, B6, D5, D6, E1, E2, E3, E3A, E3B				x				x		x			x				
R-680: 4				x				x									
TIGO-541: B1A, C1A, D1A, D1B, E1A, G1AD					x												
TIO-360: A1A, A1B, A3B6, C1A6D	x					x											
TIO-540: A1A, A1B, A1C, A2A, A2B, A2C, C1A, E1A, F2BD, G1A, H1A, J2B, J2BD, K1AD, N2BD, R2AD, S1AD, T2AD, V2AD					x	x					x	x					
TIO-540: AA1AD, AB1AD, AB1BD, AE2A, AF1A, AF1B, AG1A, AH1A, AJ1A, W2A					x	x											
TIO-541: A1A, E1A4, E1B4, E1C4, E1D4	x				x	x											
TIVO-540: A2A					x	x					x						
TO-360: C1A6D, E1A6D, F1A6D	x				x	x					x	x					
TO-360: A1A6D	x				x	x					x						
TVO-435: A1A, C1A, D1A, E1A, F1A, G1A, G1B	x				x	x				x	x	x	x				
TVO-435: B1B, D1B	x				x	x				x	x		x				
TVO-435: 13/16" reach cyl.	x				x	x						x	x				
TVO-435: 1/2" reach cyl.			x				x			x			x				
VO-360: A1A, A1B, B1A		x	x	x			x	x		x			x				
VO-435: 13/16" reach cyl.	x				x	x						x	x				
VO-435: 1/2" reach cyl.			x				x			x			x				
VO-540: A1A, A2A, B1A, B1B, B1B3, B1C, B1D, B1E, B1F, B1H3, B2A, B2C, B2D, B2E, B2G, C1A, C1B, C1C3, C2A, C2B, C2C							x			x			x				
VO-540-A, B, C Series (Long Reach)	x					x			x				x				
IIO-540-A, AA, AB, AE, AF,AG, AH, AJ,AK, C, E, F, G, H, J, K, N, R, S, T, U, V, W Series					x	x					x	x					
Teledyne Continental Motors (TCM)																	
A-65: 12, 12F, 12FJ, 12J, 14, 14F, 14FJ, 14J, 8FJ, 9, 9F, 9FJ, 9J		x		x				x		x			x				
A-65: 1, 3, 6, 6J, 7, 8, 8F, 8J				x						x			x				
A-75: 3, 6, 6J, 8, 8F, 8FJ, 8J, 9, 9J				x						x			x				
C-115: 1, 2		x		x				x		x			x				
C-125: 1, 2		x		x				x		x			x				
C-145: 2, 2H, 2HP		x	x	x			x	x		x			x				
C-75: 12, 12F, 12FH, 12FHJ, 12FJ, 12J, 15, 15F		x	x	x			x	x		x			x				
C-75: 8, 8F, 8FH, 8FHJ, 8FJ, 8J				x													
C-85: 14		x	x	x			x	x		x			x				
C-85: 12, 12F, 12FH, 12FHJ, 12FJ, 12J, 14F, 15, 15F, 8, 8F, 8FHJ, 8FJ, 8J				x						x			x				
C-90: 12F, 12FH, 12FJ, 12FP, 14F, 14FH, 14FJ, 16F, 8F, 8FJ				x						x			x				
E-165: 2, 3, 4		x	x	x			x	x		x			x				
E-185: 1, 10, 11, 2, 3, 5, 8, 9		x	x	x			x	x		x			x				
E-225: 2, 4, 8, 9		x	x	x			x	x		x			x				
FSO-470: A			x				x										
GIO-470: A					x												
GO-300: A, B, C, D, E, F		x	x	x			x	x		x			x				
GTSIO-520: E					x						x						
GTSIO-520: C, D, F, H, K, L, M, N					x						x	x					
IO-240: A, B			x				x			x			x				
IO-346: A, B			x	x	x		x	x		x			x				
IO-360: B			x	x			x	x		x			x				
IO-360: DB			x				x			x							
IO-360: A, AB, C, CB, D, E, ES, G, GB, H, HB, J, JB, K, KB			x				x			x			x				
IO-470: A, C, G, J, K, P, R, T			x	x			x	x		x			x				
IO-470: LO, VO					x						x						
IO-470: D, E, F, H, L, M, N, S, U, V					x						x	x					
IO-520: A, B, BA, BB, C, CB, D, E, F, J, K, L, M, MB, N, NB					x						x	x					
IO-550: D, E, F, G, L, N					x												
IO-550: A, B, C					x						x	x					
IOF-240: B			x				x										
IOF-550: B, C, D, E, F, L, N, P, R					x												
LIO-470: A			x	x			x	x		x			x				
LIO-520: P					x												
LTSIO-360: E, EB, KB, RB			x				x			x			x				
LTSIO-520: AE					x						x	x					
O-200: A, B, C				x						x			x				
O-300: A, B, C, D, E		x	x	x			x	x		x			x				
O-470: 11, 13, 13A, 15, 4		x	x	x			x	x		x			x				
O-470: B, G, H, M, N, P, R, S			x	x			x	x		x			x				
O-470: 2			x				x			x			x				
O-470: B-C1, G-C1, K-C1, L-C1, M-C1			x	x			x	x									
O-470: 11-C1, 11B, 11B-C1, A, E, J, K, L				x				x		x			x				
O-470: T, U					x						x	x					
R-670: 11, 11A, 3, 4, 5, 8, A, B, C, D, E, F, G, H		x		x				x									
R-9: A	x					x											
TSIO-360: A, AB, B, C, D, DB, E, EB, F, FB, G, GB, H, HB, JB, KB, LB, MB			x				x			x			x				
TSIO-360: BB, CB, NB, PB, RB, SB			x				x										
TSIO-470: B, C, D					x						x	x					
TSIO-520: LB					x												
TSIO-520: A, AF, BB, BE					x						x						
TSIO-520: AE, B, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, M, N, NB, P, R, T, U, UB, VB, WB					x						x	x					
TSIO-550: A, B, C, E					x												
W-670: 16, 23, 24, 6A, 6N, K, M		x		x				x		x			x				

Not a complete list. To find the right Tempest Aviation Spark Plugs for your engine, see our complete application guide & engine cross reference at http://tempestplus.com

AVIATION SPARK PLUGS

TEMPEST AVIATION SPARK PLUGS

Made in USA. Copper, co-extruded inside a nickel alloy sleeve ensures outstanding heat and electrical conductivity while the nickel sleeve offers high resistance to corrosive combustion gases. High Alumina Ceramic Insulator. "V" tip focuses heat to reduce fouling and enhance heat range control. Proprietary Glass Center Seal, and resistor design, eliminating resistor degradation causing misfire. Environmentally preferable electrolytic nickel provides outstanding durable finish, superior corrosion protection, and extreme wear resistance. Aviation grade nickel electrode design focuses on minimizing sparking voltage requirements. Harness Wire Contact is a smooth, uninterrupted, oxide treated spring contact surface.

Massive Electrode

Model	Part No.	Price	Model	Part No.	Price
UREM38E	08-00046	**$23.95**	URHB32E	08-00245	**$23.95**
URHM38E	08-00047	**$23.95**	UREB37E	08-00246	**$23.45**
UREM40E	08-00048	**$23.50**	URHB37E	08-00247	**$23.45**
URHM40E	08-00049	**$23.95**	UREM37BY	08-00248	**$23.45**

Fine Wire

Model	Part No.	Price	Model	Part No.	Price
URHB32S	08-07213	**$69.90**	UREB36S	08-01233	**$71.75**
URHB36S	08-01230	**$69.90**	UREM38S	08-01234	**$69.90**
URHM38S	08-01232	**$69.90**			

Boxes of 12 Spark Plugs are available for each Model. Call or visit our website for pricing.

NGK SPARK PLUGS

Note: The spark plugs listed are not for aircraft application

DCPR7E

BR8EIX

Size	Description	Part No.	Price
10mm	CR5HSB	08-06263	**$2.25**
12 mm	DCPR7E	08-00504	**$3.65**
12 mm	DCPR8E (Removable Terminal Nut)	08-01228	**$3.75**
12 mm	DCPR8E (Solid Terminal Nut)	08-07044	**$3.75**
12 mm	DR8EA	08-00693	**$2.47**
14 mm	BR8EIX	08-00650	**$9.50**
14 mm	B8ES (Solid Terminal Nut)	08-00730	**$2.55**
14 mm	B8ES (Removable Terminal Nut)	08-07075	**$2.45**
14 mm	BR8ES	08-00736	**$2.50**
14 mm	B7ES	08-07039	**$2.35**
14 mm	B9ES	08-07040	**$2.35**
14 mm	BR7ES	08-07041	**$2.32**
14 mm	BR9ES	08-07042	**$2.45**
14 mm	BR7EIX	08-07045	**$7.50**
14 mm	BR9EIX	08-07046	**$8.50**
12mm	DP9EA-9	15-05219	**$2.55**
14mm	IK24	15-05204	**$12.95**

CHAMPION SPARK PLUG ANTI-SEIZE

Apply sparingly to second and third threads. Do not contact electrodes as it could short out the plug. Do not apply to shielding barrel threads. Unbreakable 4oz. bottle with applicator brush top.

P/N 2612 ..... **$9.95**

TEMPEST SPARK PLUG ANTI-SEIZE COMPOUND

T-556 Spark Plug Thread Lubricant and Anti-Seize Compound helps to prevent galling and lubricates threads during installation.

P/N 12-00709..... **$8.50**

ATS2612 SPARK PLUG THREAD LUBRICANT

A high-temperature, graphite lubricant that is applied to spark plug threads prior to installation to prevent galling and seizure. Non-hazardous compound. ..... P/N 12-02946..... **$7.36**

TEMPEST CPR SPARKPLUG GASKET

AN4027-1, 18MM P/N M673. These are the AN4027-1 18mm copper spark plug gaskets. Model U674. Made of solid copper to current aircraft standards. ..... P/N 07-01798..... **$0.37**

COPPER SPARK PLUG GASKETS

Made of solid copper to current aircraft standards. Available in 14 MM and 18 MM sizes.

AN4027-2, 14MM ..... P/N 07-01261..... **$0.63 ea**
AN4027-1, 18MM ..... P/N 07-00877..... **$0.37 ea**

CHAMPION M674 SPARK PLUG GASKET

M674 - Gasket: Spark Plug, 18mm. Made of solid copper to current aircraft standards. Box of 100. 1 in. X 1 in. X 0.063 in.

P/N 07-03425..... **$65.80**

FOLDED STEEL SPARK PLUG GASKETS

The new type folded steel sparkplug gaskets provide better sparkplug retention with no adverse effect on heat transfer. Endorsed by FAA. These gaskets are not to be reused. 18mm Gaskets

P/N M677..... **$4.35 ea**

SPARK PLUG TYPE DESIGNATION SYSTEM

All Champion Aviation Spark Plugs are identified by type designations selected by virtue of the plug design as applied to the following Spark Plug Number and Symbol Chart. The symbol is composed of a rating position number together with prefix & suffix numbers to indicate major plug design characteristics.

A TYPICAL SPARK PLUG NUMBER WITH SYMBOL EXPLANATION

R H B 37 E
① ② ③ ④ ⑤

R — Push-wire—90° to Center

1. RESISTOR
None — No Resistor R — Mil-Spec. Resistor - Erosion protection

2. BARREL STYLE
None — Unshielded E — Shielded 5/8"-24 Thread
H — Shielded 3/4"-20 Thread (All Weather Plug)

3. MOUNTING THREAD—REACH—HEX SIZE
B - 18mm 13/16"/2.06cm 7/8"/2.22cm M— 18mm 1/2"/1.27cm 7/8"/2.22cm
J - 14mm 3/8"/0.95cm 13/16/2.06cm L — 14mm 1/2"/1.27cm 13/16/2.06cm
U - 18mm 1-1/8"/2.85cm 13/16/2.06cm

4. HEAT RATING POSITION
Low number—cold High number—hot

5. ELECTRODE DESIGN
None—Conventional single E — Two prong massive N — Four prong massive
P—Fine wire (Platinum) W — Fine wire (Iridium) B —2 prong massive, Tangent to Center

CHAMPION SPARK PLUGS

SHIELDED – MASSIVE ELECTRODES			
5/8-24*	**Price**	**3/4-20***	**Price**
REJ38 (14MM)	**$46.85**	RHM38E	**$27.70**
REL37B (14MM)	**$47.50**	RHM40E	**$27.70**
REB37E	**$28.50**	RHU27E	**$63.50**
REM37BY	**$29.50**	RHB32E	**$27.70**
REM38E	**$27.70**		
REM40E	**$27.70**		
REB32E	**$28.55**		
SHIELDED – IRIDIUM ELECTRODES*			
5/8-24*	**Price**	**3/4-20***	**Price**
REM38S	**$94.75**	RHB32S	**$98.75**
REB-36S	**$96.50**	RHB36S	**$94.75**
		RHM38S	**$95.75**
UNSHIELDED			
5/8-24*	**Price**	**3/4-20***	**Price**
M41E (18MM)	**$29.75**		

* Shielded barrel thread size. Check barrel size - 5/8x24 or 3/4x20 threads before ordering and select proper plug number.

SEE PAGE 335 FOR SPARKPLUG APPLICATION TABLE.

**The "Iridium S" sparkplugs replace the Platinum and "W" Iridium types. Increased bore diameter improves scavenging action. Greater clearance volume can accept more combustion deposits. Single Iridium electrode offers greater resistance to lead attack. Easy to clean Easy to gap

CHAMPION RVL38S SPARK PLUGS

Used on M14 YAK P/N 08-06280 ..... **$98.75**

NOTE: Spark plugs are shipped in factory sealed plastic cases. Opened spark plug cases make the spark plugs non-returnable. Please do not open any spark plug until you are sure you have received the correct spark plugs for your application.

SURPLUS SPARK PLUG BARGAINS

New surplus 18MM longreach, shielded, 3/4-20 barrel. FAA approved for Continental IO-470, GIO-470, TSIO-470, IO-520 & GTSIO-520. Not for 0-470, which uses short reach plugs.

P/N 08-03699 ..... **$9.35 ea**

SEE TOOL SECTION FOR FULL LINE OF CHAMPION SPARK PLUG TOOLS

AN4062-1 DEHYDRATOR PLUGS 18MM

These plugs are used to prevent rust and corrosion in engines while in storage. Contain silica gel which turns from blue to pink when moisture is absorbed. Reusable & refillable. The pink silica gel may be reactivated (after removing from reservoir) by heating for 16 hours at 250°F.

AN4062-1 (18MM) ..... **$6.75 ea**

SILICA GEL. Indicating type, for refilling plugs.

1/4 Lb. Bag..... P/N 07-00731..... **$4.73**
1 Lb. Can ..... P/N 07-03400..... **$18.90**

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

REGULATORS - ALTERNATORS

LAMAR (ELECTRODELTA) VOLTAGE REGULATORS

Mfg P/N	Description	Replacement for	Part Number	Price
VR500-0101	27.7V Voltage Regulator	Cessna C11004-0101, C611002-0102, -0105	07-00912	$136.75
VR500-0102	28.8V Voltage Regulator	Cessna C611004-0102	07-00913	$136.75
VR515F	28V Voltage Regulator	Cessna C611501-0102, C611005-0101	07-00914	$209.95
VR515GA	28V Voltage Regulator	Cessna C611005-0103,-0102	07-00915	$223.95
VR580	28V Voltage Regulator	Cessna C611008-0101	07-00916	$367.00
VR801	28V Alternator Control	Cessna C611007-0101	07-00919	$323.00
VR415F	14V Voltage Regulator	Zeftronic R15300	07-00910	$369.00
VSF7203A	12V Voltage Regulator	Zeftronic R1510N	07-00921	$282.95
VR382	28V Voltage Regulator	Lamar B-00382-2	07-00908	$259.00
VR392	14V Voltage Regulator	Lamar B-00392-1	07-00909	$288.00
VR2000-28-2	28V Voltage Regulator	N/A	07-00895	$399.00
VSF7403A	24V Voltage Regulator	Voltage Regulator VSF7403A	07-00922	$287.50
VR200A	14V Voltage Regulator	Piper 484121	07-00896	$182.75
VR300-14-20	14V Voltage Regulator	Delco-Remy 1118736, E,1118904, 1119226	07-00899	$261.95
VR300-14-35	14V Voltage Regulator	Delco-Remy 1118704	07-00901	$268.95
VR300-14-50	14V Voltage Regulator	Delco-Remy 1118713, 1118884, 1119224C	07-00902	$261.95
VR300-28-25	28V Voltage Regulator	Delco-Remy 1118951, 1118975, 1119218C	07-00905	$265.95
VR300-28-40	28V Voltage Regulator	Delco-Remy 1119237,1119656	07-00906	$265.95
Hartzell (Electrodelta) Voltage Regulators (Factory Overhauled)				
Mfg. P/N	Description	Replacement for	Part Number	Price
VR300-14P-50	14V Voltage Regulator	Cessna 0413205-11	07-00904	$255.95
-	14V Voltage Regulator	Zeftronic R1510L	07-00623	$143.95
VR300-14-25	14V Voltage Regulator	Delco 1118384	07-00900	$149.95
VR300-28-50	28V Voltage Regulator	N/A	07-00907	$254.95
VR515G-2	28V Voltage Regulator	Schweitzer Aircraft Corp 269A4985	07-01108	$239.95
Hartzell (Electrodelta) Voltage Sensors & Monitors (Factory New)				
Mfg. P/N	Description	Replacement for	Part Number	Price
GPM-001	28V Ground Power Motor	Cessna C593005-0101	07-01275	$542.00
OS60	14V Overvoltage Sensor	Cessna C5930001-0101	07-00890	$135.75
OS100-0101	28V Overvoltage Sensor	Cessna C593003-0101	07-00887	$93.80
OS100-0102	28V Overvoltage Sensor	Cessna C593003-0102	07-00888	$96.25
OS200-0101	28V Overvoltage Sensor	Cessna C593004-0101	07-00889	$149.00
OS75-14	14V Overvoltage Sensor	Zeftronic V1510A	07-00891	$179.75
OS75-28	28V Overvoltage Sensor	Zeftronic V2510A	07-00892	$245.95
Accessories				
Mfg. P/N	Description	Application	Part Number	Price
PT001	Adapter Cable	For use w/ VR415-F ONLY	07-00893	$96.75

* For complete application chart please visit our website at www.aircraftspruce.com

EP

OVERHAULED COMPONENTS

Alternators, generators, and starters which are remanufactured for installation in general aviation aircraft. Fully FAA approved.

EXPERIMENTAL ALTERNATORS

Part No.	Volt/Amp	Price
ES-6012	14V60A	CALL
ES-6024	28V60A	CALL
ES-6212	13.8V60A	CALL
ES-6224	28V60A	CALL
ES-7024	28V70A	CALL
ES-10024	28V100A	CALL
1100715R	12V70A	CALL
1100716R	12V52A	CALL
1100717R	12V70A	CALL
1100718R	24V50A	CALL
1100723R	24V50A	CALL
1100747R	24V50A	CALL
1100753R	24V65A	CALL
1100792R	24V65A	CALL

AEROTECH GENERATORS

Part No.	Volt/Amp	Price
DEL1101876	12V12A	$329.00
DEL1101877	12V26A	$329.00
DEL1101878	12V13A	$312.50
DEL1101879	12V25A	$249.95
DEL1101880	12V26A	$249.95
DEL1101881	12V13A	$249.95
DEL1101882	12V26A	$249.95
DEL1101887	12V35A	$249.95
DEL1101888	12V50A	$226.95
DEL1101890	12V20A	$239.00
DEL1101892	12V35A	$249.95
DEL1101897	12V35A	$249.95
DEL1101898	12V35A	$237.95
DEL1101899	12V20A	$237.95
DEL1101900	12V35A	$268.95
DEL1101901	24V26A	$248.95
DEL1101904	24V25A	$250.95
DEL1101905	24V25A	$250.95
DEL1101906	24V25A	$250.95
DEL1101908	12V50A	CALL
DEL1101909	12V50A	$256.95
DEL1101910	12V20A	$249.95
DEL1101911	24V25A	$250.95
DEL1101912	12V50A	$256.95
DEL1101913	12V35A	$250.95
DEL1101914	12V35A	$237.95
DEL1101915	12V50A	$237.95
DEL1101917	12V35A	$248.95

Part No.	Volt/Amp	Price
DEL1101918	12V35A	$248.95
DEL1101923	12V50A	$250.95
DEL1105052	24V40A	CALL
DEL1105053	24V40A	CALL
DEL1105054	24V50A	$289.95
DEL1105055	24V50A	$397.95
DEL1105056	24V40A	$273.95
DEL1105057	24V50A	$282.95
DEL1101876	12V13A	$329.00
DEL1101877	12V26A	$329.00
DEL1101878	12V13A	$312.50
DEL1101909	12V50A	$256.95
DEL1105055	24V50A	$397.95

DELCO STARTERS

Part No.	Volt/Amp	Price
DEL1108234	24V	$314.95
1108249R	12V	CALL
DEL1109471	12V	$314.95
1109511R	12V	CALL
1109517R	24V	CALL
1109511R	12V	CALL
1109518R	24V	CALL
1109511R	12V	CALL
1109511R	12V	CALL
1109514R	12V	CALL
1109651R	12V	CALL
DEL1109652	12V	$312.00
1109656R	12V	CALL

Part No.	Volt/Amp	Price
1109657R	12V	CALL
1109660R	12V	CALL
1109662R	24V	CALL
1109678R	12V	CALL
1109689R	12V	CALL
1109687R	24V	CALL
1109677R	12V	CALL
1109678R	12V	CALL
1109519R	12V	CALL
1109518R	24V	CALL
1109678R	12V	CALL

Minimum Core Charge on Delco Alt. and Starters $200.00

*Drive not included (DEL 1971890). For price see listing for drives.

**Drive not included (DEL 1940969). For price see listing for drives.

LAMAR 14V VOLTAGE REGULATOR

Lamar Voltage Regulator DGR6-1 fits Cessna 150 thru Cessna 210 series aircraft. DGR6-1 is the PMA replacement for DGR6, C611001-0101, C611001-0102, C611001-0201, and VR600. Manufactured in the USA.

P/N 07-01897 ..... $171.75

LAMAR 28V ALTERNATOR CONTROL

Lamar Alternator Control DGR3-1 fits Cessna 150 thru Cessna 210 series aircraft. DGR3-1 is the PMA replacement for DGR3, C611005-0103, C611501-0102, and VR15F. Manufactured in the USA.

P/N 07-01896 ..... $210.95

HARTZELL ENGINE TECH. ALTERNATORS

HARTZELL ENGINE TECHNOLOGIES ALTERNATORS

The most popular alternators in use on Cessna and Beech aircraft are of Ford manufacture. Chrysler alternators are usually found on Piper aircraft. These units are manufactured to aircraft specifications and are not available through automotive parts stores. Note: Core charge is billed on all exchange units & credited upon receipt of acceptable core.

ALTERNATOR PRODUCT INFORMATION

If Unit Begins With:	Then Unit Is:
ALE-	12V / 40A
ALH-	12V / 55A
ALM-	12V / 30A
ALT-	24V / 50A
ALU-	24V / 70A
ALV-	24V / 100A
ALX-	12V / 70A
ALY-	12V / 60A
ALZ-	12V / 50A
ANG-	24V / 60A

If First Digit After (-) Is:	Then Unit Is:
6	Belt Driven / No Blast Tube
8	Belt Driven / Blast Tube
9	Gear Driven

If Unit Ends With:	Then Unit Is:
LS	New Unit - No Pulley
RS	Factory Rebuilt/Over-hauled- No Pulley
G	Ground Strap Attached
R	Factory Rebuilt/Over-hauled
None	Factory New- Various Applications

CHRYSLER ALTERNATORS - FACTORY OVERHAULED

Model No.	Description	Part No.	Price
4111810R	12V/60A BD	07-06402	$307.00

FORD ALTERNATORS - FACTORY OVERHAULED

Model No.	Description	Part No.	Price
DOFF10300BR	28V/60A BD	07-06413	$358.00
DOFF10300DR	28V/60A GD	07-06418	$503.00
DOFF10300ER	28V/38A GD	07-06414	$484.00
DOFF10300FR	15V/60A GD	07-06415	$434.00
DOFF10300JR	15V/60A BD	07-06416	$356.00
E3FF10300AAR	28V/95A BD	07-06417	$503.00
E3FF10300BAR	28V/60A BD	07-06419	$395.00
EOFF10300AAR	12V/95A BD	08-07036	$493.00
EOFF10300BAR	28V/60A BD	07-06419	$395.00

EP

HARTZELL ENGINE TECH. OVERHAULED COMPONENTS

Aircraft Spruce carries the full line of alternators, and starters which are remanufactured by Hartzell for installation in general aviation aircraft. Fully FAA approved. All prices shown are exchange prices. Core charges are billed when unit is shipped. Core credit is issued upon return of acceptable like model core to Aircraft Spruce West in Corona, CA. NOTE: If core is not in stock at factory, customer must send core to Aircraft Spruce at time of order to have the core overhauled.

PRESTOLITE AL SERIES ALTERNATORS - OVERHAULED

Part No.	Volt/Amp	Price
ALE-6520R	12V40A	$342.00
ALE-8520R	12V40A	$332.00
ALE-8521R	12V40A	$341.00
ALT-8520R	24V50A	$428.00
ALT-8521R	24V50A	$456.00
ALT-9522R	24V50A	$448.00
ALU-6521RS	24V70A	$439.00
ALU-8521R	24V70A	$446.00
ALU-8521RS	24V70A	$448.00
ALU-9522R	24V70A	$467.00
ALV-8511R	24V100A	$832.00
ALV-8512R	12V100A	$811.00
ALV-9510R	24V100A	$944.00
ALX-6523R	12V70A	$469.00
ALX-8521R	12V70A	$473.00
ALX-8521RS	12V70A	$449.00
ALX9522R	12V70A	$441.00
ALX-9524R	12V70A	$459.00
ALX-9525BR	12V70A	$469.00
ALY-6520R	12V60A	$446.00
ALY-6521R	12V60A	$446.00
ALY-6522R	12V60A	$457.00
ALY-6527R	12V60A	$391.00
ALY-8520R	12V60A	$398.00
ALY-8520RS	12V60A	$398.00
ALY-8524R	12V60A	$391.00
ALY-8526R	12V60A	$422.00

TCM ALTERNATORS - OVERHAULED

Part No.	Volt/Amp	Price
642056R	-	$980.00
646490R	-	$565.00
646843R	24V60A	$798.00
Part No.	Volt/Amp	Price
649280R	28V70A	$411.95
649281R	15V80A	$469.00

ES4000 SERIES ALTERNATORS - OVERHAULED

Part No.	Volt/Amp	Price
ES4019RS	28V130A	$752.00
ES-4020R	14V60A	$419.00

ALTERNATOR DRIVE COUPLINGS

Hartzell (Electrosystems) overhauls these alternator drive couplings for the gear driven TCM alternators. Add $500 core charge (refundable) to prices shown below. Part No. 646655R
Applicable to engine models:
IO-520,TSIO-520,IO-550, GTSIO-520
P/N 07-00641.....$675.00
Part No. 635796R
Applicable to engine models:
C-75, C-85, C-90, C-115, C-125, C-145, E-165, E-185, E-225, O-200, O-300, GO-300, GIO-300, IO-240, IO-360, TSIO-360, & LTSIO-360
P/N 07-00642.....$671.00

PLEASE VISIT OUR WEBSITE OR CALL FOR DETAILS ON THE Hartzell CORE RETURN POLICY.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

HARTZELL ENGINE TECH. ALTERNATORS

HARTZELL ENGINE TECH. NEW ALTERNATORS

AL Series

ES4000 Series

ES4020 Series

As the OEM, Hartzell offers factory new alternators engineered specifically to meet the challenges and increased demands of today's aircraft electrical systems. Each unit is aviation designed & developed, no automotive parts used. For decades our alternators have been powering Lycoming/Continental engines with unmatched performance and reliability. No Core charges.

AL SERIES ALTERNATOR - Prestolite Style - FAA/PMA Approved.

Model No.	Volts/Amps	Discription	Part No.	Price
ALT8520	24V/50A	Belt Driven	08-07122	$573.00
ALT8521	24V/50A	Belt Driven	08-07123	$672.00
ALT8521LS	24V/50A	Belt Driven	08-07124	$672.00
ALT9522	24V/50A	Gear Driven	08-07125	$672.00
ALU6521 LS	24V/70A	Belt Driven	08-07126	$652.00
ALU8521	24V/70A	Belt Driven	08-07127	$588.00
ALU8521 LS	24V/70A	Belt Driven	08-07128	$578.00
ALU8532 LS	24V/70A	Belt Driven	08-07129	$655.00
ALX8521	12V/70A	Belt Driven	08-07130	$588.00
ALX8521LS	12V/70A	Belt Driven	08-07131	$578.00
ALX8523	12V/70A	Belt Driven	08-07132	$616.00
ALX9524	12V/70A	Gear Driven	08-07133	$598.00
ALX9525B	12V/70A	Gear Driven	08-07134	$606.00
ALY9524	12V/60A	Belt Driven	08-07135	$661.00
ALY6527	12V/60A	Belt Driven	08-07136	$607.00
ALY8520	12V/60A	Belt Driven	08-07137	$577.00
ALY8520LS	12V/60A	Belt Driven	08-07138	$561.00

ES4000 SERIES ALTERNATOR - Ford Style - FAA/PMA Approved

Model No.	Volts/Amps	Discription	Part No.	Price
ES4000	15V/60A	Belt Driven	08-07139	$517.00
ES400LS	15V/60A	Belt Driven	08-07140	$541.00
ES4001	15V/60A	Gear Driven	08-07141	$637.00
ES4002	15V/80A	Gear Driven	08-07142	$634.00
ES4003	15V/95A	Belt Driven	08-07143	$703.00
ES4004	28V/38A	Gear Driven	08-07144	$506.00
ES4006	28V/60A	Gear Driven	08-07145	$549.00
ES4008	28V/70A	Gear Driven	08-07146	$656.00
ES4009	28V/70A	Belt Driven	08-07147	$545.00
ES4011	28V/95A	Belt Driven	08-07148	$656.00
ES4019LS	28V/130A	Belt Driven	08-07149	$916.00

ES4020 SERIES ALTERNATOR - Chrysler Style - FAA/PMA Approved

Model No.	Volts/Amps	Discription	Part No.	Price
ES4020	14V/90A	Belt Driven	08-07150	$458.00
ES4029	28V/70A	Gear Driven	08-07151	$656.00

EP

HARTZELL ALV-9610 ALTERNATOR

Lighter, Tougher, and Proven! Introducing the brand new ALV-9610. The ALV-9610 alternator is a direct replacement for gear driven heavyweight alternators on the Continental 520 & 550 engines.

Weighing under 13 lbs., the ALV-9610 is up to 9 lbs. lighter than current heavyweight options. The ALV-9610 is a field proven design that has been in use for over 5 years with thousands of alternators operating on the world's top selling aircraft. FAA/PMA Approved.

Features:
- Up to 9.6 lbs. weight savings (per engine)
- OEM Direct Replacement
- More power at engine cruise
- Built in noise cancellation
- Rugged design for extreme conditions
- More economical than overhauled units
- Two year warranty

Specifications:
- 28 Volt / 100 Amp Prestolite Style
- Max Continuous Oper. Speed: 10000 rpm
- Type Drive: Gear
- Min. Speed for Regulation: 2400 rpm
- Max. Operating Altitude: 35000 rpm
- Weight: 12 lbs.
- Rotation: Bi-Directional
- Replaces TCM part numbers: 642056, ... 646491, 646842, 649304, as well as ALV-..... 9510.

P/N 08-07442.....$765.00

HARTZELL ES7024-14 ALTERNATOR

Hartzell Lightweight Alternator ES7024-14, for experimental use. 28 Volt, 70 Amps. Weight: 7 lbs.

Replaces TCM part number 657199.

Features:
- All aircraft quality parts, no automotive parts
- High altitude brushes
- High speed bearings
- High temperature varnish on rotor and stator
- No modifications necessary for Retro-fit into any existing Ford style applications
- Two year warranty

P/N 08-07444.....$588.00

HARTZELL ES10024 ALTERNATOR

Introducing the brand new ES-10024 28volt / 100amp aircraft alternator. The ES-10024 alternator is a direct replacement for TCM part number 656802.

The ES-10024 is a field proven design that has been in use for over 5 years with thousands of alternators operating on the world's top selling aircraft.

Prestolite Style - FAA/PMA Approved.

Lightweight, cost effective, 2 yr. warranty.

Features:
- Up to 9.6 lbs. weight savings (per engine)
- OEM Direct Replacement
- More power at engine cruise
- Built in noise cancellation
- Rugged design for extreme conditions
- More economical than overhauled units
- Two year warranty

Specifications
- 28 Volt / 100 Amp Prestolite Style
- Replaces TCM part number 656802

P/N 08-07443.....$944.00

HARTZELL STARTER OVERHAUL KITS

HARTZELL STARTER OVERHAUL KITS

After consulting with industry operators, owners and flight schools, it was recognized that downtime is critical in this economy and there is a need to minimize downtime and costs when repairing or replacing Lycoming and Continental starters.

These overhaul kits include all parts necessary for a normal major overhaul, as well as any special tools, lubricants, and thread compounds. In addition, a complete digital Overhaul and Parts manual is included.

The model specific kits cover all starters manufactured by Lamar Technologies/Hartzell in eight different kits. The overhaul manual has been rewritten to highlight tear down and assembly with detailed drawings and instructions. The manual covers all aspects of the rebuild in easily understood steps with tech support just a call or email away. Average time to do a complete overhaul can be accomplished in less than an hour reducing downtime and increase revenue, as well as maintain the quality standards of the maintenace organization.

Description	Part No.	Price
PM1201-OHK - Fits all PM1201/1202 starters	07-01269-1	$227.95
PM1203-OHK - Fits all PM1203 starters	07-01270-1	$217.95
PM1204-OHK - Fits all PM1204 starters	08-06007-1	$218.95
PM2401-OHK - Fits all PM2401/2402 starters	07-01272-1	$192.75
PM2403-OHK - Fits all PM2403 starters	07-01273-1	$227.95
PM2404-OHK - Fits all PM2404 starters	08-06009-1	$227.95
LT-EBB-131A Starter Drive Kit, Lycoming 149T fits all 01 starters	07-01180	$89.75
LT-EBB-124A Starter Drive Kit, Lycoming 122T fits all 03 starters	07-01858	$114.00
LT-EBB-142A Starter Drive Kit, Lycoming 149T, left hand Rotation fits all 04 starters	07-01899	$95.00
OHK-0001 Kit , Tools, OHK, Lycoming fits all OH kits	07-01901	$27.65
OHK-0002 Kit, Planetary Gears, 3 ea. Fits all Lycoming starters	07-01902	$32.95
OHK-003 Kit, Thru Bolt and Anchor Ring #10 fits all Lycoming starters	07-01903	$26.95
OHK-0004 Kit, Brush Assembly, 12V pos. fits all 12 volt starters	07-01904	$39.60
OHK-0005 Kit, Brush Assembly, 12V neg fits all 12 volt starters	07-01905	$39.60
OHK-0006 Kit, Brush Assembly, 24V pos. fits all 24 volt starters	07-01906	$39.50
OHK-0007 Kit, Brush Assembly, 24V neg fis all 24 volt starters	07-01907	$39.60
OHK-0008 Kit, Brush Bracket & Spring fits all starters	07-01908	$18.50
OHK-0009 Kit, Hardware, Starter, Lycoming	07-01909	$16.95
OHK-0010 Kit, Fasteners, Starter, Lycoming	07-01910	$16.50
Accessories		
Description	Part No.	Price
2305002 Armature, 12V, Lycoming	07-01911	$123.75
2305003 Armature, 24V, Lycoming	07-01912	$141.95
5005001 Assy, Starter Nose	07-01914	$163.85
9301004-F 12/24V Starter Bearing OH Kit	07-01183	$106.95
5101002 Support, Intermediate, Shaft	07-01915	$33.85
5201003 Case, Motor, Lycoming	07-01916	$82.00
5301001 End Bell	07-01917	$38.85
5401001 Shield Grease	07-01918	$8.50
6301003 Label, Starter Drive Maintenance	07-01919	$2.36
7801008 Washer, Wave	07-01920	$3.85
9005001 Assy, Flux Ring, Lycoming, Complete	07-01921	$124.75

ZEFTRONICS VOLTAGE REGULATORS

Photo	Description	Part No.	Approval	Price	Replacement For
	R15100 Rev A VR:14.2V. * Ground-Fault-Protection (GFP) * Trouble-Shooting Light (TSL) * Use R15V00 Rev A for built-in OV Protection.	07-00622	FAA-STC	$157.75	Cessna: C611001-0101, -0102, -0201. Beech: 33-380010 Electrodelta: VR600 Lamar: DGR6 FORD: D4FF-10316-BA, D4FF-10316-CA
	R15V00 Rev A VR:14.2V; OV 16V Same as R15100 Rev A plus OV Protection	07-00628	FAA-STC	$183.75	Zeftronics: R15100 Rev A (ACU), Plus V11100 (OVS)
	R1510N Voltage Regulation: 14.2V * Use R15V0N for built-in OV Protection * Single or Dual Alternator Application * Externally Adjustable	07-00624	FAA-STC FAA-PMA	$206.95	Prestolite: VSF7201, 2, 2S, 3, 3A, 3S, 4 Electrodelta: VSF7203A TCM: 649684-1 Piper: 550-383
	R15V0N VR: 14.2V ; OV 16.0V * Low/OV Light, OV Protection	07-00630	FAA-STC FAA-PMA	$249.95	Zeftronics: R1510N (ACU), Plus V1510A (OVR)
	R1510L Voltage Regulation: 14.2V. * Ground-Fault-Protection (GFP) * Trouble-Shooting Light * Reduced panel lights fli * Use R15V0L for built-in OV Protection	07-00623	FAA-PMA	$143.95	Piper: 450-392, 484-121, 66804-03, 756-055, 484-088 Beech: 169-380063 Wico: X16300B, X17990. Lamar: B00267-1, 2, B00331-1, 2. Delco Remy: 9000590, 1116393, 1116398 Electrodelta: VR200, A Commander: 1816110 Prestolite: FVR4004, 4224, 4011 RBM: 87-87102-21 Lycoming: LA-11357, 12747
	R15V0L VR: 14.2V ; OV: 16V * Ground-Fault-Protection (GFP) * Trouble-Shooting Light (TSL) * OV Protection built-in	07-00629	FAA-PMA	$187.75	Piper: 557-337 Lamar: B00371-1,-8,-14 Electrodelta: VR371 Zeftronics: R1510L (ACU), Plus V1510A (OVR)
	R15300 VR: 14.2V. OV: 16V * Ground-Fault-Protection (GFP) * OV Protection built-in, T/s Light	07-00625	FAA-PMA	$232.95	Mooney: 800270-505, 880016-503 Electrodelta: VR415F Lamar: DGR1-1
	R1530B VR: 14.2V. OV: 16V * Ground-Fault-Protection (GFP) * OV Protection built-in * Trouble-Shooting Light	07-00626	FAA-PMA	$257.95	Mooney: 880016-501 Beech: 35-380093-1,2,3 Electrodelta: VR414, B00403-1 ; EM2073-1, 2 Oeco: 20053, 20065, 20137, 20437, 20082
	R25101 Rev A VR: 27.7 * GFP & Trouble-Shooting Light * Use R25400 (require mod to ALT wiring & connector) for built-in OV Protection.	07-00631	FAA-PMA	$134.75	Cessna: C611004-0101, C611002-0102, -0105 Ford: C8FF/ C6FF-10316-A TCM: 636147 Electrodelta: VR500-0101
	R25102 Rev A Voltage Regulation: 28.7V Same features as R25101 Rev A	07-00632	FAA-PMA	$138.80	Cessna: C611004-0102 Electrodelta: VR500-0102
	R251DR VR: 27.7V **BEST VALUE** *Trouble-Shooting Light & GFP *Externally Adjustable	07-00634	FAA-PMA	$233.95	Delco Remy: 9000591 Lycoming: 74292 TMC: 631656
	R25400 VR: 28.7V *OV Protection built-in & GFP *Trouble-Shooting Light	07-00635	FAA-STC	$179.90	Cessna: C611005-0103, -0101, -0102 Electrodelta: VR515F,G, GA Lamar: DGR3
	R2510N VR: 28.4V *Use R25V0N for built-in OV Protection. *Single or Dual Alternator Application *Externally Adjustable	07-00633	FAA-STC	$234.95	Prestolite: VSF7403A, 3S, 4Piper: 550-381 Lycoming: LW10179, 77347
	R25V0N VR: 28.4V ; OV 32V R2510N plus OV Relay, Low/Over-Voltage Indicator	07-00636	FAA-STC	$272.95	Prestolite: VSF7403A,3S,4. Piper: 550-381. Lyc: LW10179, 77347 Zeftronics: R2510N + V2510A
	V11100 Over-Voltage Trip: 16.0V *Use w/ R15100 Rev A, VR600 or DGR6 *More Precise OV Protection	07-00637	FAA-STC	$118.75	Cessna: C593001-0101 Lamar: DG01 Electrodelta: OS60. Electromech: EM235
	V1510A Over-Voltage Trip: 16.0V *Use with R1510N or VSF72XX Series for OV Protection. *Use with R1510L for OV Protection *More Precise OV Protection	07-00638	FAA-STC FAA-PMA	$141.75	Piper: 450-397, 484-183, 550-380, 450-393 Beech: 138-1 Wico: X-17621 Lamar: B00289-2, B00339-1 Electrodelta: OS75-14 Delco-Remy: 1115831 Prestolite: FOC-4002B
	V25101 Over-Voltage Trip: 32V *Use with R25101(2) Rev A or VR500-0101,0102 for OV Protection	07-00639	FAA-STC FAA-PMA	$164.75	Cessna: C593003-0101, -0102 Electrodelta: OS100-0101 Electromech: EM233 Lamar: DG02-28 Other P/n: 138-3
	V2510A Over-Voltage Trip: 32.0V * More Precise OV Protection * Use with R2510N or VSF74XX	07-00640	FAA-STC	$171.95	Piper: 484-182, 550-382, 584-043 Prestolite: FOC4003A, B. Lycoming: 74804, 78060 Wico: X17634, X17620 Delco Remy: 1115832
	G1200N VR:14.2V. Current Limit (CL): 20A Trouble-shooting Lights, Electronic GCU	07-00617	FAA-PMA	$165.75	Delco: 1118736, 1118904, 1119226. VR300-14-20. Cessna: 0413025-4, 5, 12
	G1350N * VR 14.2V: Current Limit (CL): 35A trouble shooting Lights, Electronic GCU	07-00618	FAA-PMA	$165.75	Delco: 1118704, 1119220, 1118-704, 1118892. VR300-14-35, 450-390. Cessna: 0413025-6, 8, 10
	G1500N VR:14.2V: Current Limit (CL): 50A Trouble-shooting Lights, Electronic GCU	07-00619	FAA-PMA	$165.75	Delco: 1118884, 1118713, 1119224, Electrodelta: VR300-14-50. Cessna: 0413025-7, 9, 11
	G250KN VR: 28.4V.CL: 50A, EQR Built-in	07-01367	FAA-STC	$266.95	1119656 ,VR300-28-50. Cessna: 0850460-9

EP

PLANE POWER LIGHTWEIGHT ALTERNATORS

PMA APPROVED ALTERNATOR REPLACEMENTS

Plane-Power Certified Alternators are PMA certified to replace any existing alternator in the aircraft and engine applications listed below. No STC paperwork required. All Plane-Power PMA alternators produce up to 70 amps. Your airframe/application may use only a portion of the available output as limited by the aircraft electrical system components and design. Every Plane-Power alternator is tested to exceed all quality and performance specifications. Plane-Power PowerFlex Voltage Regulators are also available separately.

Model	Brackets included	Part No.	Price
AL12-F60	No	07-00998	$479.00
AL24-F60	Yes	07-00999	$488.00
AL12-F60C	No	07-01256	$483.00
AL24-F60C	No	07-01257	$488.00
AL24-FS60	No	07-01491	$659.00
AL12-P70	No	07-01001	$486.00
AL24-P70	No	07-01002	$513.00
AL12-70	Yes	07-01258	$554.00
AL24-70	Yes	07-01259	$540.00
C28-150	N/A	07-01838	$1,247.00

American Champion	OEM Part #	Model #
7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, 8KCAB	ALY-8420	AL12-P70
Beechcraft	**OEM Part #**	**Model #**
19A, B19, M19A, 23, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R	33-380009-1	AL12-F60
19A, B19, M19A, 23, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R	ALE-8105A / ALE-8406	AL12-P70
76 Duchess, 77Skipper	ALY-8420	AL12-P70
76 Duchess	ALU-8421	AL24-P70
B19, C19, C24R	ALU-8421R	AL24-P70
Cessna	**OEM Part #**	**Model #**
177, 177A, 177B	C611501-0101	AL12-F60
172I, K, L, M, N, P, 177, 177A, 177B, 177RG	C611501-0102	AL12-F60
P206A, P206B, P206C, P206D, P206E, U206, U206A, U206B, U206C, U206D, U206E, TP206A, TP206B, TP206C, TP206D, TP206E, TU206B, TU206C, TU206E, 207, T207, 210B, 210C, 210D, 210E, 210F, T210F, T210G, T210H, T210J	C611501-0101	AL12-F60C
180H, 180J, 180K, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 185E, A185E, A185F, 188, P206C, U206C, U206D, U206E, U206F, U206G, TP206C, TU206B, TU206C, TU206E, TU206F, TU206G, 207, T207	C611501-0102	AL12-F60C
180H, 182G, 182H, 185D, 210E	0750217-1	AL12-F60C
188, A188, A188A, A188B, 210K, T210K, 210G, 210H	1570213-6	AL12-F60C
152, A152, 172M, 172N, 172P, 172Q, 172RG, 177B, 177RG, R182, TR182	C611503-0102	AL24-F60
180J, 180K, 182P, 182Q, 182R, T182, U206E, U206F, U206G, TU206E, TU206F, TU206G, 207, T207, 210K, 210L, 210M, 210N, 210R, P210N, P210R, T210K, T210L, T210M, T210N, T210R, A185F, 207A, T207A	C611503-0102	AL24-F60C
188, 188A, 188B, A188, A188A, A188B, T188C, 207, T207	1570213-7	AL24-F60C
172R, 172S, 182S*, 182T*, T182T*	9910591-5	AL24-FS60
*S/N182001(1997) through 18281197(2004)	9910591-11	
Commander	**OEM Part #**	**Model #**
112, 112B, 112TC, 112TCA, 114, 114A, 114B, 114TC	LW14316	AL12-P70

Twin Commander Aircraft Corporation	OEM Part #	Model #
500-S	78314	AL24-P70
Diamond Aircraft Industries GmbH	**OEM Part #**	**Model #**
DA-40	ALU-8421LS	AL24-70*
Grumman (Gulfstream, Tiger)	**OEM Part #**	**Model #**
AA-1, AA-1A, AA-1B, AA-1C	ALE-6420 / ALY-6420 LW-14310	AL12-P70
AA-5, AA-5A, AA-5B, AG-5B, GA-7	DOFF-10300J	AL12-F60
AG-5B	ALU8421LS	AL24-P70
Mooney	**OEM Part #**	**Model #**
M20C, M20E, M20F, M20G, M20J	ALY-8420 / ALX-8403	AL12-P70
Mooney (cont.)	**OEM Part #**	**Model #**
M20J	ALU6421LS	AL24-P70
M20M (Single alternator installations only)	ES-4009LS	AL24-P70
Piper (Without Airconditioning)	**OEM Part #**	**Model #**
PA-44-180, PA-44-180T	751 346	AL12-P70
PA-28-151, PA-32R-301 (SP), PA-32-301T, PA-32R, 301(HP), PA-32R-301T (SP), PA-32-301, PA-34-200, PA-38-112	551-984	AL12-P70
PA-24-260	ALX8403	AL12-70
PA-23-235, PA-23-250	ALX8403	AL12-P70
PA-23-235, PA-23-250	ALU-8403	AL24-P70
PA-44-180, PA-44-180T	ALX8421LS	AL12-P70
PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-180, PA-28-235, PA-28R-180, PA-28R-200, PA-32-260, PA-32-300, PA-32R-300	69670-00 (60 amp)	AL12-C60
PA-28-140, PA-28-151, PA-28-161, PA-28-180, PA-28-235, PA-28R-200, PA-32-300, PA-32R-300	69670-03 (60 amp)	AL12-C60
PA-28-151, PA-28-161, PA-28-181, PA-28-236, PA-28R-201, PA-28RT-201,PA-32-300,PA-32R-300,PA-32RT-300,PA-32RT-300T	69670-04 (60 amp)	AL12-C60
Vulcanair, S.P.A	**OEM Part #**	**Model #**
P68, P68B, P68C, P68C-TC, P68 "OBSERVER", P68TC "OBSERVER", P68 "OBSERVER 2"	ALU-8421LS	AL24-P70

For Lycoming engines 235, 320, 360, 540, 720 and Superior engines O-360, IO-360, Plane-Power alternators AL12-P70, AL12-70*, and AL24-70* replace Lycoming and Superior certified 70amp alternators: LW14300, LW14302, LW14308, LW14310, LW14316, LW14319, LW14322, LW14324. *Comes with all new Plane-Power mounting brackets and hardware.

PLANE POWER LIGHTWEIGHT C14-100 ALTERNATOR

The Plane Power alternator can produce all 100 amps if proper size wiring, ammeter and circuit breaker are installed and approved. PMA replacement, requires only a log book entry. Aircraft electrical system will be limited by existing wiring and output circuit breaker. Weight: 13 Pounds. Warranty: 2-Year Limited. 14 volt, 100 amp alternator. Replaces Hartzell/Kelly, Crittenden, TCM 50 – 100amp alternators on TCM 520 and 550 Series engines. See www.aircraftspruce.com for complete application chart. P/N 07-01948 ..... $1,247.00

ALT FLX UNIVERSAL LIGHTWEIGHT STC ALTERNATOR

The ALT FLX 100 Amps (14V)/150 Amps (28 V) at 12.5 pounds is precision balanced with dual internal cooling fans, built in noise filter and provides 70 Amps at engine idle speeds. This externally regulated alternator is a direct DOFF series alternator replacement and the STC allows for generator to alternator conversion. It is available for STC installation on most aircraft and helicopters. Optional Lycoming and Continental mounting kits are available along with multi-groove and v-belt pulleys.

Description	Part No.	Price
Plane Power Flx Alternator Doff Series	07-02460	$1,095.00
Plane-power Flx Alternator With Lycoming Case Mount	07-02460-1	$1,211.95
Plane-power Flx Alternator With Lycoming Boss Mount	07-02460-2	$1,321.00

Accessories/Options	Part No.	Price
Plane-power Flx Lyc Case Mount Install Kit	07-02462	$116.95
Plane-power Flx Lyc Boss Mount Install Kit	07-02463	$127.75
Plane-power Flx Cont Install Kit	07-02464	$206.95
Plane-power Flx Install Kit Multi-groove	07-02688	$127.75

PMA CONTINENTAL ALTERNATOR REPLACEMENT

The C28-150 is PMA FAA eligible on most Continental 520 and 550 Series engines with front mounted gear driven alternators. This Spectacular alternator in addition to providing a continuous 150A at X RPM will deliver 60A at 1000 RPM and weighing only 12.6 lbs! Also available without debris shield sold as model C28-150S. ..... P/N 07-01838 ..... $1,247.00

LIGHTWEIGHT EXPERMENTAL ALTERNATORS

Unlike automotive alternators, all Plane-Power Experimental Alternators are specifically engineered for Airplane Engines and have Dual Internal Fans designed for Airplane Engine Rotation the same as our Certified Alternators. 2 year warranty,

The AL12-EI60 kit comes with an internally regulated ultra compact lightweight AIRCRAFT alternator (6.9 lbs.) with an exclusive internal crowbar over-voltage protection circuit. The alternator is fully pilot controllable through unique internal wiring. The dual internal fans are designed for aircraft engine rotation for maximum cooling. The AL12-EI60 kit includes the tension arm, mounting brackets, required AN hardware, and V-Belt for Superior and most Lycoming* engines. 10 lb. 70amp also available. Also available 70 amp version only 2 additional lbs.

The AL12-EI60-L , Plane Power's 60A LSA alternator which must be installed in combination with Sky-Tec LSA starter, provides the industry's lightest charging/starting package at 13.2 lbs. for Lycoming's O-233, O-235, O-290, O-320 engines. Sky-tec starter to be purchased separately. Fits engines with 122 tooth ring gear and case mount engines.

The EX14-50 12/14 volt, 50 amp, internally regulated alternator with built-in Over-Voltage protection for use in EXPERIMENTAL Aircraft with small block Continental Engines. Includes Pre-Wired Enable Plug and Gaskets. Note: Overall Diamter: 4.4", Overall Length: 6". Use your existing drive gear and coupling. New gear and coupling also available separately. Warranty: 2-Year Limited Weight: 6.8 Pounds.

The FS1-14 Fly Safe back up alternator, internally regulated (13.6 volt +-0.3) with built-in overvoltage protection. Designed for use in experimental aircraft. FS1-14. Features a 30A continuous output, precision internal voltage regulator, fail-safe Over Voltage Protection, Shear Coupling Assembly, 6lbs installed weight, higher level of safety. 2-Year Limited Warranty. Weight: 6 Pounds. 12 volt/30 amp. Also availbale as a primary unit sold as model FS1-14B.

Model	Output	Voltage	Part No.	Price
AL12-EI60/B (Boss Mount)	60	12	07-01313	$439.00
AL12-EI60/C (Case Mount)	60	12	07-01313-1	$439.00
AL12-EI70/B (Boss Mount)	70	12	07-01414	$455.00
AL12-EI70/C (Case Mount)	70	12	07-01414-1	$448.00
AL12-EE70/B (Boss Mount)	70	12	07-01005	$514.00
AL24-EE70/B (Boss Mount)	70	24	07-01006	$520.00

Model	Output	Voltage	Part No.	Price
AL12-EE70/C (Case Mount)	70	12	07-01005-1	$518.00
AL24-EE70/C (Case Mount)	70	24	07-01006-1	$520.00
EX14-50	50	12	07-01268	$578.00
AL12-EI60-L	60	12	07-01839	$438.00
FS1-14 Fly Safe	30	12	07-01857	$698.00
FS1-14B	30	14.2	07-01883	$698.00

PLANE POWER CONVERSION KITS

BELT DRIVEN GENERATOR CONVERSIONS

Aircraft Parts & Development	Plane-Power
Intermountain (Callair) A, A-2, A-4, A-5, A-5T, A-9, A-9B	SAL12-70
Alexandria Aircraft, L.L.C.	
Bellanca 14-19-2, 14-19-3, 14-19-3A	SAL12-70C
Cessna Aircraft Co.	
180, 180A, 180B, 180C, 180D, 180E, 180F, 180G,	SAL12-70C
182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H,	SAL12-70C
185, 185A, 185B, 185C, 185D	SAL12-70C
210, 210A, 210-5 (205), 210-5A (205A)	SAL12-70C
206, P206	SAL12-70C
Cessna 310, 310A, 310B, 310C*, 310D*, 310E*, 310F*, 310G, 310H, 310I, 310J, 310K *10-9006 kit may be required for installation. View installation instructions online for further information	TAL24-70C
Fred Garcia	
Camair 480	TAL24-70C
FS 2003 Corporation (Piper)	
Piper PA-12, PA-12S	SAL12-70
Hawker Beechcraft Co.	
Beech H35, J35, K35, M35, N35, P35, 35-33, 35-A33, 35-B33, 35-C33	SAL12-70C
23	SAL12-70
Beech Baron 95-55, 95-A55, 95-B55, 95-B55A	TAL24-70C
Beech Travelair 95, B95, B95A, D95A, E95	TAL24-70
Helio Aircraft, LLC	
Helio H-250	SAL12-70
Helio 500	TAL12-70
KWAD Co.	
Super-V	TAL12-70
Latinoamerican De Aviacion	
Piper PA-25, PA-25-235, PA-35-260	SAL12-70
Lockheed Aircraft Corp.	
402-2	SAL12-70C
Mooney Airplane Company	
M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G	SAL12-70
Piper Aircraft, Inc.	
Piper PA-16, PA-16S	SAL12-70
Piper PA-18, PA-18S, PA-18 "105" (SPECIAL), PA-19S	SAL12-70
PIPER PA-18A, PA-18 "125" (Army L-21A), PA18S "125", PA-18AS "125", PA-18 "135" (Army L-21B), PA18A "135", PA-18S "135", PA-18AS "135", PA-18 "150", PA-18A "150", PA18S "150", PA-18AS "150", PA-19 (Army L-18C), PA-20, PA-20S, PA-20-"135", PA-22, PA-22-135, PA-22S-135, PA-22-150, PA-22S-150, PA-22-160, PA-22S-160 (When modified with FAA Approved rear mounted oil cooler)	SAL12-70
Piper PA-20-"115", PA-205-"115"	SAL12-70
Piper PA-22-108	SAL12-70
Piper PA-24, PA-24-250, PA-24-260, PA-24-400	SAL12-70
Piper PA-28-140, PA-28-150, PA-28-160, PA-28-180, PA-28-235, PA-28S-160, PA-28S-180	SAL12-70
Piper PA-23, PA-23-160, PA-23-235, PA-23-250, PA-E23-250	TAL12-70
Piper PA -30	TAL12-70
Prop-Jets Inc.	
Meyers 200, 200A, 200B, 200C, 200D	SAL12-70C
Raytheon Aircraft Co.	
35, A35, B35, C35, D35, E35, F35, G35, 35R, modified by STC conversion to O-470 or IO-470 engine.	SAL12-70C
Revo, Inc.	
Colonial C1, Colonial C2, Lake LA-4, LA-4A, LA-4P	SAL12-70
Sierra Hotel Aero, Inc.	
Navion D, E, F,G, H, and Navion (L-17A), Navion A (L-17-B & L-17C), B modified by STC conversion to O-470 or IO-470	SAL12-70C
Twin Commander Aircraft Corporation	
500A	TAL24-70C
500, 500-B, 500-U	TAL24-70

GEAR DRIVEN GENERATOR CONVERSIONS

Ad Aerospace	Plane-Power
T-211	ER14-50
Aerodifusion	
D-1190S	ER14-50
Aeromca (Burl A. Rogers)	
15AC, S15AC	ER14-50
Aircraft Parts & Development	
A-3	ER14-50
All American	
10A	ER14-50
American Champion	
402, 7EC, 7ECA, 7FC, 7JC, S7EC	ER14-50
Hawker Beechcraft	
35, 35R, 45 (YT-34), A35, B35, C35*, D35*, E35*,F35*, G35*, (*When equipped with E225-8 Engine)	ER14-50
Cessna	
120, 140, 140A, 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, A150M, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H	ER14-50
Commonwealth Aircraft	
185	ER14-50
Edward Scott Kerns	
Trojan A-2	ER14-50
FA 2001	
J5A (Army L-4F) (when equipped with C75-12 Engine)	ER14-50
Swift Museum Foundation	
GC-1A, GC-1B	ER14-50
Goodyear	
GA-22A	ER14-50
Helio Aircraft	
15A (when equipped with C145-2 Engine)	ER14-50
Avion Jodel	
150, D-1190, DR-1050 ER14-50	ER14-50
The Don Luscombe Aviation History Foundation	
8E, 8F, T-8F	ER14-50
Maule Aircraft Company	
BEE DEE M-4, M-4, M-4C, M-14S, M4T, M-4-210, C, S, T, M-5-210C	ER14-50
Thomas H. McClish	
B85C	ER14-50
Micco Aircraft Company	
MAC-125C. MC-145	ER14-50
S.O.C.A.T.A	
(Ralley) Series 100S, Rallye Series MS 880B, Rallye Series	ER14-50
Navion	
(Army L-4),(Army L-17B and L-17C)	ER14-50
Piper	
J3C-35* (Army L-4), L-4A*, L-4B (Navy NE-1*), L-4H*, L-4J*(Navy NE-2*)), J3C-65S*, -4A**, J4E* (Army L-4E), PA-18, PA-19, PA-18S***, PA-19S*** (When equipped with (*C75-12)(**C85-12)(***C90-12F)Engine) PA-28-201T, PA-28R-201T, PA-28RT-201T, PA-34-200T, PA-34-220T	ER14-50
Quartz Mountain Aerospace	
11A	ER14-50
Superior	
(Culver) V, (Culver) V-2	ER14-50
Taylorcraft Aviation	
BC-12D-4-85, BCS12D-4-85	ER14-50
Univair Aircraft	
(Alon) A-2, (Alon) A-2A, (Forney) F-1, (Forney) F-1A, (Mooney) M10, ERCO 415-C*, ERCO 415-CD*, ERCo 415-D, ERCO E, ERCO G, (*When equipped with C75-12, C75-12F, C85-12 or C85-12F Engine)	ER14-50

PLANE-POWER LIGHTWEIGHT STC GENERATOR TO ALTERNATOR CONVERSIONS

BELT DRIVEN - Plane-Power Belt Driven Generator to Alterantor Conversion Kits include hardware and brackets to replace your existing generator and regulator. Plane-Power STC Belt Driven Generator Conversions allow for increasing the size of the output wire and circuit breaker to allow for a maximum of 70 amps of output. All Plane-Power alternators feature dual internal fans specially designed for aircraft engine rotation to maximize cooling. Models available for both 12 and 24 volt as well as for both Lycoming and Continental installations.

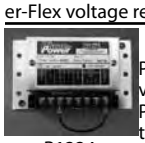
Model	Output	Voltage	Part No.	Price
SAL12-70	70 (max)	12	07-01301	$719.00
SAL12-70C	70 (max)	12	07-01299	$779.00
TAL12-70	70 (max)	12	07-01302	$1,478.00

Model	Output	Voltage	Part No.	Price
TAL24-70	70 (max)	24	07-01304	$1,556.00
TAL24-70C	70 (max)	24	07-01303	$1,939.00

GEAR DRIVEN - Plane-Power Gear Driven Generator to Alterantor Conversion Kits replace your existing generator with an alternator which will provide higher output at lower rpm and allow for increasing the size of the output wire and circuit breaker to allow for a maximum of 50 amps of output. The ER14-50 uses your existing gear assembly. The entire gear assembly (ER14-GR) may be purchased separately. Some older generators have larger diameter (5/8") shafts and require the gear support kit (G-Pack). Please call for details. The ER14-50 weighs 6.9 lbs and comes with a pre-wired enable plug, 50 amp gear driven alternator, alternator inoperative lamp, Seals and R1224B Power-Flex voltage regulator.

Model	Output	Voltage	Part No.	Price
ER14-50	50 (max)	12	07-01321	$712.00
Accessories				
Gear Drive designed for use with the ER14-50			07-01348	$90.00

PLANE-POWER ALTERNATOR VOLTAGE REGULATORS



R1224

Plane-Power Power-Flex Voltage Regulators are FAA-PMA Approved. Available for most certified aircraft. Solid-state voltage regulators with over-voltage protection, field short (over current) protection, and reverse battery protection. Plane-Power Power-Flex voltage regulators also support precision load sharing for twin applications and an alternator inoperative lamp. Power-Flex voltage regulators are designed to be setup in the field for 12 or 24 volt operation by a simple placement of the two internal jumpers. For smaller mounting placement on the R1224, installation aid 12-1021 may be used.

R1224B

Model	Description	Voltage	Part No.	Price
R1224	Replaces many Ford, Electrodelta, Prestolite, Interav, Wico, and FVR voltage regulators.	12 or 24	07-01305	$185.95
R1224B	Replaces voltage regulators on twin Cessnas, Beechcraft, and Vulcanair .	12 or 24	07-01306	$185.95

GEAR ADAPTER KIT G-PACK

Required for use with the existing drive gear when the generator shaft is over 0.5" in diameter. Uses existing gear from replaced generator.

Description	Part No.	Price
Gear Adapter Kit # G-Pack	07-01348	$90.00

EP

B & C LIGHTWEIGHT ALTERNATORS

L-40 ALTERNATOR

The L-40 is a high-performance belt-driven 40 amp alternator for Lycoming engines. Designed to meet the rigorous demands of weight-sensitive homebuilt designs, without sacrificing reliability, the L-40 alternator features a precision-balanced rotor, sealed heavy-duty ball-bearings and 2 internal cooling fans. Weighs 6.1 lbs. and measures 3.9" (diameter) x 5.6" (length). Also includes mounting hardware, belt tension arm, and belt. Applicable to Lycoming O-235 through IO-720 engines.

L-40 Boss Mount (Wide Deck engine) P/N 07-06815 ..... $399.00
L-40 Case Mount (Narrow Deck engine), w/ B&C Starter P/N 07-06810 ..... $518.00
L-40 Case Mount (Narrow Deck engine), w/ Other Starter P/N 07-03485 ..... $463.00

L-40 requires an external voltage regulator – see BELOW

L-60 ALTERNATOR

The L-60 is a precision, high-output belt-driven 60 amp alternator for Lycoming engines. Like the L-40 alternator, the L-60 is designed for reliable service over the long term, with a dynamically-balanced rotor, sealed heavy-duty ball-bearings and 2 internal cooling fans. Weighs 8.5 lbs. and measures 4.6" (diameter) x 6.6" (length). Also includes mounting hardware, belt tension arm, and belt. Applicable to Lycoming O-235 through IO-720 engines.

L-60 Boss Mount (Wide Deck engine) .....P/N 07-06785 ..... $644.00
L-60 Case Mount (Narrow Deck engine), w/ B&C Starter P/N 07-06820 ..... $649.00
L-60 Case Mount (Narrow Deck engine), w/ Other Starter P/N 07-03486 ..... $792.00

L-60 requires an external voltage regulator – see BELOW

L-40 and L-60 alternators require external regulators – use:
P/N 07-06742 (LR3C) for 14V, P/N 07-06786 (LS1A) for 28V

BC433-H GEAR DRIVEN ALTERNATOR WITH PMR3A

The BC433-H is a 30 amp 14V gear-drive alternator for Continental engines (C-75 through O-300). Featuring a unique brushless design, with a billet aluminum mounting flange and heavy-duty ball bearings, the BC433-H is an ideal choice for a variety of homebuilt designs. Weighs 4.4 lbs. and measures 4.1" (diameter) x 3.75" (length). Also includes a matching PMR3A Regulator and 505-1 Over-Voltage Protection kit. Sold without the Continental drive gear assembly (customer supplied), and requires the latest revision of the Hub (P/N 07-01327) and Retainer (P/N 07-01328). B&C has a limited supply of used drive gear assemblies, available at additional cost.

BC433-H Alternator ..... P/N 07-00771 ..... $674.00

ACCESSORIES

Generator Coupling (Cont. P/N: 653983) ..... P/N 07-01327 ..... $263.95
Generator Retainer (Cont. P/N: 653982) ..... P/N 07-01328 ..... $20.50

LR3C AND LS-1A LINEAR CONTROLLERS (REGULATORS)

P/N 07-06742

The LR3C and LS-1A are more than your typical regulators; more accurately, they are alternator controllers. Each device combines 3 essential functions in one physical container—linear ("quiet") regulation, solid-state over-voltage protection, and low-voltage monitoring and warning. This makes possible sophisticated, space-saving, and cost-effective alternator control for homebuilt aircraft, while also improving safety of flight. The LR3C-14 may be used with 14 volt externally regulated alternators, while the LR3C-28 may be used with OEM-type, 28 volt externally regulated alternators. The LS-1A permits the use of B&C alternators in a 28 volt electrical system. The LR3C and the LS-1A weigh approximately 9 ounces each, and are intended for circuit type "B" (one field lead grounded directly) alternator systems.

LR3C-14 Regulator/Controller (14V).....P/N 07-06742 ..... $248.00
LR3C-28 Regulator/Controller (28V, OEM alternator) P/N 07-06748 ..... $193.00
LS-1A Regulator Controller (28V, B&C alternator) P/N 07-06786 ..... $277.95
Battery Temperature Sensor .....P/N 07-06744 ..... $105.95

SD-8 ALTERNATOR & REGULATOR

The SD-8 is a lightweight, spline-driven 14V alternator system for aircraft with an available vacuum pump drive pad. Features an ultra-reliable, brushless design, with a billet aluminum mounting flange and sealed heavy-duty ball bearings. With a nominal output of 8 amps, the SD-8 alternator is adequate for many day-VFR applications, and may be used as a backup power source on a variety of homebuilt aircraft. The SD-8 is a long-time favorite of top aerobatic pilots around the world. Weighs 2.9 lbs. and measures 3.5" (diameter) x 4.6" (length). Also includes a matching PMR1C Regulator and 504-1 Over-Voltage Protection kit. P /N 07-06770 ..... $540.00

BC410-H ALTERNATOR

The BC410-H is the original high-performance spline-driven alternator that mounts on a standard vacuum pump accessory pad. It may be used either as a primary or a stand-by alternator for a nominal output of 20 to 30 amps, depending on engine RPM. Designed for many hours durable service, the BC410-H features a dynamically balanced rotor, heavy-duty sealed ball-bearings, 2 internal cooling fans, and a special "shear section" designed into the drive coupling. The BC410-H is externally-regulated, and may be used in either 14 and 28 volt homebuilt aircraft using our LR3C-14 (14V), LS-1A (28V), or SB1B (14V or 28V) Controllers. Measures 4.6" (diameter) and 6.0" (length), and weighs 5.75lbs. The BC410-H will clear a stock tachometer cable on Lycoming engines, as well as B&C Oil Filter Adapters.

P/N 07-06771 ..... $494.00

200G ALTERNATOR & REGULATOR

The 200G is a 12 amp 14V gear-drive alternator for Continental engines (C-75 through O-300). Features a ultra-reliable, brushless design, with a billet aluminum mounting flange and heavy-duty ball-bearings. Used in the prototype Vari-Eze, as well as many Cassuts, Q-200s, and other homebuilt aircraft, the 200G has been in production for over 30 years, with many systems still in service. With a nominal output of 12 amps, the 200G will support a modest night-VFR-night system. Measures 4.4" (diameter) and 3.8" (length), and weighs 3.4 lbs. Also includes a matching PMR1C Regulator and 504-1 Over-Voltage Protection kit. Sold without the Continental drive gear assembly (customer supplied; or purchased at additional cost). Gear assembly must be installed by B&C – send to Aircraft Spruce for installation.

200G Alternator ..... P/N 07-06575 ..... $540.00
New Drive Gear ..... P/N 07-06500 ..... $785.00

TURBO STAND-BY ALTERNATOR

The Basic BAE-14/28 Auxiliary Power Supply is a manually deployed, air driven, emergency electric supply for small aircraft. The unit is capable of supplying electric power to drive a basic complement of flight critical instruments. If a primary electrical system failure should occur, the pilot deploys the miniature turboalternator. The flight can then be continued to the intended destination, or terminated at a convenient airport under more casual conditions. The unit is self-exciting, thus it will work in the absence of the battery. The appropriate installation kit is included to reduce installation time and cost. The BAE-14/28 is currently STC'd for seven aircraft models: Cessna 210, 206, 182, Piper PA-32, PA-28, Bonanaza, and Mooney. One Cardinal installation is flying on a 337.

BPE-14 Turbo Alternator ..... P/N 10-00747 ..... $799.00
BAE-14/28 Auxillary Power Supply ..... P/N 10-00748 ..... $2,199.00

B&C PERMANENT MAGNET ALTERNATOR OVER-VOLTAGE (PM/OV) KITS

The PM/OV Kit is designed to provide over-voltage protection to homebuilt aircraft electrical systems using a permanent magnet alternator. Features a solid-state "crowbar" over-voltage protection module, relay, filter capacitor, panel-mount warning lamp, and wire terminals. Included with all new B&C Permanent Magnet Alternator systems.

504-1 20A PM/OV Kit (14 Volt).....P/N 08-00658 ..... $65.00
504-2 20A PM/OV Kit (28 Volt).....P/N 07-00708 ..... $65.00
505-1 40A PM/OV Kit (14 Volt).....P/N 07-03488 ..... $76.75

EP

B & C LIGHTWEIGHT STARTERS FOR LYCOMINGS

The original lightweight Starter for Lycoming engines. Weighing only 10.2 lbs., the B&C Starter was designed to meet rigorous demands of weight sensitive aircraft designs, without sacrificing reliability or performance. Introduced over 25 years ago, this same design has provided dependable service for thousands of satisfied customers. Every B&C Starter features heavy-duty sealed ball-bearings, all metal gears, electro-mechanical pinion engagement (no Bendix drive), and an efficient series-wound motor. Cantilevered pinion gear mounting requires no forward shaft support bearing, thus eliminating cowl interference or on-going maintenance. If battery failure precedes engine starting, a positive spring retraction system insures pinion gear disengagement. Both STC/ PMA and Homebuilt versions are available in 14 volt and 28 volt configurations. FAA-approved for any of the following series of Lycoming engines: • O-235 • O-290-D • O-320 • IO-320 • AIO-320 • AEIO-320 • LIO-320 • O-360 • HO-360 • LO-360 • IO-360 • HIO-360 • AIO-360 • AEIO-360 • TIO-360 • LTIO-360 • O-540 • IO-540 • HIO-540 • AEIO-540 • TIO-540 • LTIO-540 • IO-720

FOR CERTIFICATED AIRCRAFT APPLICATIONS					
Part No.	Model No.	Pinion Gear Pitch	Teeth on Ring Gear	Battery Voltage	Price
07-06700	BC315-100-1	10/12	122	12	$575.00
07-06705	BC315-100-2	12/14	149	12	$575.00
07-06710	BC315-100-3	10/12	122	24	$605.00
07-06715	BC315-100-4	12/14	149	24	$605.00
FOR EXPERIMENTAL AIRCRAFT APPLICATIONS					
Part No.	Model No.	Pinion Gear Pitch	Teeth on Ring Gear	Battery Voltage	Price
07-06720	BCS206-122-12	10/12	122	12	$545.00
07-06725	BCS206-149-12	12/14	149	12	$545.00
07-06730	BCS206-122-24	10/12	122	24	$575.00
07-06735	BCS206-149-24	12/14	149	24	$575.00

B & C LIGHTWEIGHT STARTERS FOR CONTINENTALS

With an innovative, patented design, the BC320 Starter for Continental engines solves all the problems that other starter designs have had—from worn-out clutches and broken pinions, to nagging oil leaks and catastrophic failure modes. Weighing only 10.3 lbs., it is also 4.3 to 5.2 lbs. lighter depending on your current starter configuration. Built for reliable service, the BC320 features a billet aluminum end bell, heavy-duty sealed ball-bearings, all metal gears, electro-mechanical pinion engagement, and an efficient series-wound motor. Cantilevered pinion gear mounting requires no forward shaft support bearing. The BC320 is a complete starter, ready to install, and includes an installation kit to convert from an existing pull-type starter, or an existing key-type starter. Both STC/ PMA and Homebuilt versions are available. FAA-approved for the following Continental engines: • C-75 • C-85 • C-90 • O-200 • C145-2 • IO-240 • O-300 • GO-300-A/B/C

FOR CERTIFICATED AIRCRAFT APPLICATIONS				
Part No.	Model No.	Installation Kit	Battery Voltage	Price
07-06716	BC320-1	Existing Pull-Type (501-1)	12	$605.00
07-06716	BC320-1	Existing Key-Type (501-3)	12	$605.00
FOR HOMEBUILT AIRCRAFT APPLICATIONS				
Part No.	Model No.	Installation Kit	Battery Voltage	Price
07-06737	BC320-H	Existing Pull-Type (501-1)	12	$749.00
07-06737	BC320-H	Existing Key-Type (501-3)	12	$749.00

ACCESSORIES

501-1 ..... Installation Kit (key type) ..... P/N 07-06752 ..... $24.95

If you are replacing an existing key-type starter, a needle bearing will need to be removed from your engine before installing the BC320. A special tool kit is available to aid in removing this needle bearing. If you do not care to keep this kit, you may return it and be refunded $80.00.

501-2 Needle Bearing Removal Tool Kit ..... P/N 07-06753 ..... $105.90

501-3 ..... Installation Kit (pull cable) ..... P/N 07-06754 ..... $67.75

LS-1A VOLTAGE REGULATOR

The LS-1A Controller offers linear voltage regulation, integral over-voltage protection, and low-voltage monitoring and warning. It has been specially designed, however, to permit the use L-40 & L-60 alternators in a 28v electrical system. The LS-1A weighs approximately 9 ounces, may be mounted on the cockpit side of the firewall, and is available with an optional battery temperature sensor for colder climates. Select a location for mounting that will protect unit from heat, vibration, and water. The pilot side of the firewall, or inside the cabin near the instrument panel, is recommended. For Experimental Aircraft ONLY P/N 07-06786 ..... $277.95

JASCO GEAR DRIVEN ALTERNATOR KITS

This Jasco alternator kit is STC'd for many aircraft including the early Cessna 150, 172, and 175 series as well as Beech Model 35's with early E series Continental engines. Applicable to Continental C-90, 0-200 and 0-300 engines. This kit includes 50 amp alternator, voltage regulator, over-voltage control, and STC documents. Available for 14V systems only. Well-proven over many years of use in a variety of aircraft. In stock for immediate shipment. STC'd for Cessna 150-170, 172, 175, Beech 35 Series, Navion A. Kit #6560-1. P/N 07-06900 ..... $1,025.00

Volts	Amps	Drive	Alt. P/N	Kit P/N	Price
		New Alternators ONLY			
12	50	4 stud, 6 spline sqr pad	6555T	6555-1	$1,200.00
12	50	Round pad like Delco config.	6560T	07-06900	$1,025.00
12	50	6 stud, 16 spline rnd. pad	6565T	6565-1	$1,312.00
24	50	4 stud, 6 spline sqr. pad	7555T	7555-1	$1,150.00
24	50	6 stud, 16 spline rnd pad	7565T	07-75651	$1,195.00
24	70	Hiller UH12E round pad	7555H-72B	07-01869	$950.00
27	70	4stud, 6spline sqr. pad	7655T	07-00703	$1,095.00
		7555H-72B Kit		07-00702	$1,650.00
24	70	Alternator	7555H-72B	07-01869	$950.00
		J12M24SPH Reg. Controller	J12M24SPH	07-00314	$215.00
		17-10 Resist. 150 omega	17-10	07-01710	$25.95
24	70	17-10 Resist. 150 omega	17-10	07-01710	$25.95
12		Voltage Controler	J12M20SP	07-00697	$189.20
24		Voltage Controler	J12M24SP	07-00696	$215.00
24		Voltage Controler	J12M24SPH	07-00314	$215.00
24		Voltage Controler	J24-100SP	07-00698	$210.95
24		150 (omega) Resistor	17-10	07-01710	$25.95
24		75 (omega) Resistor	17-1	07-00699	$18.50
		Terminal Conversion kit	ESC-2	07-00701	$131.75
24	50	4 stud, 6 spline sqr. pad	7555T	07-00735	$869.00

TEMPEST POWERFLITE ALTERNATOR

Note: Core charge will be added at time of order. Amount is refunded once original core is returned.

FAA/PMA Approved PowerFlite Alternator. 28 Volts/60 Amps. Model No. 9910591-11AC. For Cessna: 172R, 172S, 182S, 182T AND T182T

New ..... P/N 08-07541 ..... $595.00

Overhauled ..... P/N 08-07662 ..... $395.00

TEMPEST STARTERS

The Tempest PowerFlite series of aviation engine starters represents a new state-of-the-art energy efficient design providing reduced current draw and long life. The PowerFlite starter mounts directly to existing TCM engines and is available in both 12 and 24 volt configurations. Tempest starter part numbers PL13459 (12v) and PL13484 (24v) are eligible on TCM engine models O-300-D, GO-300-D, IO-346, IO-360, L/TSIO-360, O-470, IO-470, TSIO-470, IO-520, TSIO-520, GTSIO-520, IO-550, TSIO-550 and TSIOL-550.

Powerflite Starter 12V ..... P/N 08-07284 ..... $699.00

Powerflite Starter 27V ..... P/N 08-07283 ..... $699.00

See www.aircraftspruce.com for parts and accessories.

KELLY AEROSPACE DUAL ALTERNATOR KIT

The kit includes a duplicate 95 amp alternator to the original equipment, along with all the pulleys, belts, brackets and hardware for installation on the Lycoming IO-540 series engines. All system controls are panel mounted and the backup system is activated with a flip of a switch. STC Approved for Cessna 182, 182T, 182S.

Alternator Kit Cessna 182/182T ..... P/N 07-01490 ..... $4,675.00

Dual Alternator Kit Cessna 182S ..... P/N 07-01804 ..... $4,585.00

CHRYSLER ALTERNATORS - FACTORY OVERHAULED

2098615R	12V/37A BD	08-07032	$433.00
2642996R	12V/37A BD	08-07033	$244.95
2642997R	12V/60A BD	08-07034	$311.00
3656623R	12V/41A BD	08-07035	$245.95
3656624R	12V/60A BD	07-01344	$253.95
3659924R	12V/60A BD	07-06401	$389.00

ALTERNATOR & GENERATOR BELTS

LYCOMING ALTERNATOR

37A19773-376 ..... $69.75

LYCOMING GENERATOR BELTS

37B19774-374 ..... $93.75

37B19774-325 ..... $69.75

CONTINENTAL

539547-31.19 ..... $27.50

EP

HARTZELL TURBOCHARGERS/ALTERNATOR KITS

Hartzell (HET) is constantly expanding their product lines to meet the ever changing needs of the aviation industry. Their purchase of the RAJAY and Garrett turbochargers, pressure relief valves, wastegates, and controllers makes the your best choice for both new and rebuilt turbocharging systems for all the general aviation aircraft flying today. Factory New, OEM Approved. Rebuilt to Factory New Tolerances. Performance alloys that resist cracking 18 month unlimited hours warranty

HARTZELL TURBOCHARGER

Description	Part Number	Price
406610-0005 Hartzell Turbocharger	07-02644	$3,822.00
406610-0021 Hartzell Turbocharger	07-02646	$4,894.00
406610-0031 Hartzell Turbocharger	07-02654	$4,039.00
407810-0001 Hartzell Turbocharger	07-02655	$5,132.00
465292-0002 Hartzell Turbocharger	07-02656	$3,474.00
465930-0002 Hartzell Turbocharger	07-02658	$3,960.00
465930-0003 Hartzell Turbocharger	07-02659	$3,960.00
466011-0002 Hartzell Turbocharger	07-02661	$2,547.00
466304-0003 Hartzell Turbocharger	07-02662	$2,760.00
466642-0005 Hartzell Turbocharger	07-02664	$2,440.00
CF600803-0001 Hartzell Turbocharger	07-02669	$4,960.00
CF600803-0002 Hartzell Turbocharger	07-02670	$5,580.00
406610-9018 Hartzell Turbocharger	07-02671	$2,634.00
406610-9019 Hartzell Turbocharger	07-02672	$3,575.00
407540-9003 Hartzell Turbocharger	07-02673	$4,178.00
465292-9002 Hartzell Turbocharger	07-02674	$2,265.00
600700-9000 Hartzell Turbocharger	07-02378	$4,116.25

HARTZELL WASTEGATES AND VALVE ASSEMBLIES

Description	Part Number	Price
470842-9003 Hartzell Wastegate	07-02676	$1,745.00
470944-9022 Hartzell Valve Assembly	07-02678	$1,050.00
470944-9029 Hartzell Valve Assembly	07-02679	$1,325.00
470944-9034 Hartzell Valve Assembly	07-02680	$1,325.00

HARTZELL TURBO REPLACEMENT PARTS

Description	Part Number	Price
400705-0000 Hartz Pin Spring	07-02683	$2.20
400805-0205 Hartz Bolt Hex Head	07-02684	$0.94
400806-0203 Hartz Bolt	07-02685	$7.50
407169-0006 Hartz Turbine Housing	07-02689	$1,452.00
408049-0002 Piston Ring	07-02690	$6.80
408994-0005 Hartz Comp Wheel - Gar	07-02691	$146.75
409752-0064 Hartz Turbine Housing	07-02692	$1,543.00
441083-0001 Hartz Lockplate	07-02694	$10.00
441977-0025 Hartz Center Housing	07-02695	$3,858.00
442273-0022 Hartz Turbo Housing	07-02696	$1,010.00
443136-0001 Hartz Clamp	07-02697	$1.93
444205-0001 Hartz Nut	07-02698	$3.35
712494-0001 Hartz Thrust Bearing	07-02699	$41.50
CF600385-0000 Hartz Pipe Plug	07-02702	$9.90
CF600511-0006 Hartz Turbine Housing	07-02706	$1,045.00
92203 18mm Grommet	08-92203	$26.90

EP

HARTZELL OVERHAULED ALTERNATOR KITS

Model No.	Description	Part No.	Price
90-3032	For ALE-6406,G; ALE-6420,G; ALE-6520; ALE-8105A; ALE-8406,G; ALE-8408; ALE-8420,G; ALE-8421; ALE-8520; ALE-8521	07-01684	$220.95
90-3035	For ALT-8403; ALT-8404; ALT-8404LS; ALT-8407; ALT-8420; ALT-8421; ALT-8421LS; ALT-8520; ALT-8521; ALT-8521LS	07-01687	$161.75
90-3036	For ALT-9405; ALT-9422; ALT-9522	07-01688	$146.75
90-3037	For ALU-6421LS; ALU-6521LS; ALU-8403; ALU-8403LS; ALU-8421LS; ALU-8521; ALU-8521LS	07-01689	$157.75
90-3038	For ALU-9404L; ALU-9422L; ALU-9522	07-01690	$146.75
90-3039	For ALV-6403LS; ALV-8402,L; ALV-8511; ALV-8512	07-01691	$161.75
90-3040	For ALV-9401; ALV-9401L; ALV-9405L; ALV-9407, S	07-01692	$156.75
90-3042	For ALV-9510	07-01694	$166.90
90-3044	For ALX-8403,G,R,RG; ALX-8403LS,RS,LSG,RSG; ALX-8421,G,R,RG; ALX-8421LS,RS,LSG,RSG; ALX-8521; ALX-8521LS	07-01696	$161.75
90-3045	For ALX-9402	07-01697	$125.95
90-3046	For ALX-9404L,LG,R,RG; ALX-9422L,LG,R,RG; ALX-9424; ALX-9522; ALX-9524	07-01493	$146.75
90-3048	For ALY-6403,G; ALY-6406,G; ALY-6420,G; ALY-6427,G; ALY-6520,G; ALY-6520LS; ALY-6527,G; ALY-8403,G; ALY-8403LS,G; ALY-8410; ALY-8420,G; ALY-8420LS, G; ALY-8423; ALY-8520; ALY-8520LS	07-01495	$156.75
90-3049	For ALY-6408; ALY-6409; ALY-6412; ALY-6421; ALY-6422; ALY-6425; ALY-6521; ALY-6522; ALY-6525; ALY-8402; ALY-8405,G; ALY-8411; ALY-8424; ALY-8426,G; ALY-8523; ALY-8524; ALY-8526	07-01496	$136.75
90-3052	For ES4020	07-01498	$167.95
90-3053	For ES4000; ES4000LS; ES4005; ES4005-2; ES4007; ES4009; ES4009LS; ES4013; ES4013LS; ES4017; ES4018; ES4018LS; ES4023; ES4024; ES4030; ES4031; ES4040	07-01499	$111.75
90-3054	For ES4021; ES4024L; ES4024LP	07-01501	$111.75
90-3055	ES4003; ES4003LS; ES4011; ES4011LS; ES4011-1; ES4011-1LS; ES4014; ES4016; ES4019; ES4019LS; ES4019-2LS; ES4022	07-01502	$322.00
90-3056	For ES4001; ES4002; ES4004; ES4006; ES4008; ES4028; ES4029	07-01503	$97.75
90-3057	For 4111810R	07-01504	$174.75
90-3058	For DOFF10300B; DOFF10300J; EOFF10300BA; E3FF10300BA	07-01505	$97.75
90-3059	For DOFF1030D; DOFF10300E; DOFF10300F	07-01506	$119.75
90-3060	For EOFF10300AA; E3FF10300AA	07-01507	$55.75

HARTZELL ENGINE TECH. STARTERS

X-DRIVE STARTERS FROM HARTZELL ENGINE TECHNOLOGIES

- Lightest Starter Available » Weight 7.6 lbs.
- Perfect spin » Sweet spot engine starts, doesn't drain your power like other starters
- Start efficiency » Lowest inrush & operating current draw in the industry
- No mechanical Bendix
- Electromechanical solid-state solenoid
- Powerful permanent magnet » Performance
- Easy installation » Left or right mount
- FAA/PMA approved
- 2 Year Unlimited Hours Warranty *

The X-Drive aircraft starter is one of our most popular models because of its awesome power and compact size. Targeted toward Lycoming users that want one of the industries lightest but most powerful starter on the market, the X-Drive delivers the same high torque, low current draw, and superior duty cycle that had previously been available only to E-Drive customers. The introduction of the X-Drive starter allows Hartzell Engine Technologies to service virtually all OEM and aftermarket Lycoming applications.* Kick-backs not covered

Only 7.6 lbs.
Lightest Starter Available

APPLICATION DATA GUIDE

FIGURE 1

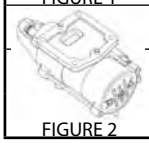


FIGURE 2

Solenoid to the Left: (X-Drive series: see figure 1)	
SRZ-9021 (12 Volt - 149 tooth)	SRZ-9022 (12 Volt - 122 tooth)
SRB-9021 (24 Volt - 149 tooth)	SRB-9022 (24 Volt - 122 tooth)
Solenoid to the Right: (X-Drive series: see figure 2)	
SRZ-9031 (12 Volt - 149 tooth)	SRZ-9032 (12 Volt - 122 tooth)
SRB-9031 (24 Volt - 149 tooth)	SRB-9032 (24 Volt - 122 tooth)
(12/14 pitch works on a 149 tooth ring gear & 10/12 pitch works on a 122 tooth ring gear.)	

Description	Part No	Price
Hartzell X-Drive Starter SRB-9021	08-06271	$431.00
Hartzell X-Drive Starter SRB-9022	08-06272	$432.00
Hartzell X-Drive Starter SRB-9031	08-06273	$432.00
Hartzell X-Drive Starter SRB-9032	08-06274	$432.00
Hartzell X-Drive Starter SRZ-9021	08-06275	$399.00
Hartzell X-Drive Starter SRZ-9022	08-06276	$398.00
Hartzell X-Drive Starter SRZ-9031	08-06277	$404.00
Hartzell X-Drive Starter SRZ-9032	08-06278	$406.00

CROSS-REFERENCE CHART

Sky-Tec P/N	X-Drive P/N
122-12LS	SRZ-9022
122-12PM	SRZ-9032
122-24LS	SRB-9022
122-24PM	SRB-9032
149-12LS	SRZ-9021

Sky-Tec P/N	X-Drive P/N
149-12PM	SRZ-9031
149-24HT	SRB-9021
149-24LS	SRB-9021
149-24PM	SRB-9031

EP

HARTZELL ENGINE TECHNOLOGIES E-DRIVE STARTERS

- Ilmmune to Kick-back damage!
- Perfect spin » Sweet spot engine starts, doesn't drain your power like other starters
- Lightweight » Only 9.5 lbs.
- No mechanical Bendix
- Electromechanical solid-state solenoid
- Powerful permanent magnet » Performance
- Easy installation » Lycoming engines
- Tough » Tested under the most extreme cond.
- FAA/PMA approved
- 2 Year Unlimited Hours Warranty

Hartzell Engine Technologies E-Drive starters, for Lycoming engines, have the Toughest Duty Cycle in the industry exceeding other aircraft starters by 40%. Ready to Fly, for weekend flyers or hard starting flight schools. There is no longer a need to replace overloaded devices (shear pins) after a Kick-back event. The E-Drive starter is unaffected by Kick-backs saving hours of service time & replacement cost$. Using absolutely no automotive aftermarket parts, the engine & starter are both protected by a proprietary torque limiting clutch drive design. - NO CORE CHARGE

- High Performance Armature
- Increased commutator bar length
- Thin laminations
- High quality magnetic alloy
- 12 & 24 volt winding configuration
- Redesigned Brush Holder
- Metal construction for heat sinking
- Offset brush position for increased brush contact area
- Robust spring design
- High performance field housing
- Rare earth neodymium magnets
- Small package
- Stronger flux field
- Improved temperature stability
- 9.5 lbs.

APPLICATION CHART

E-Drive Number - Approved Alternative for the following:

ERB-8011	ERB-8012	ERZ-8011	ERZ-8012
MHB-4001	MHB-4015	MZ-4205	MZ-4204
MHB-4002	MHB-4002	MZ-4206	MZ-6204
MHB-4003	MHB-6001	MZ-4207	
MHB-4005		MZ-4217	
MHB-4007		MZ-4218	
MHB-4010		MZ-4219	
MHB-4012		MZ-4221	
MHB-4013		MZ-4224	
MHB-4014		MZ-4222	
MHB-4016		MZ-4223	
MHB-4017		MZ-4225	
MHB-4019		MZ-6222	
MHB-4020		MZ-6224	

- Starter system designed for maximum performance.
- Drive assembly integrates proprietary pinion gear, clutch, torque limiter, and actuator in one complete module.
- Available for coarse and fine pitch ring gears, clock-wise and counter-clock-wise rotation.
- No periodic service or recurring maintenance required.
- 9.5 lbs.

Model	Description	Lycoming Engine	Replaces	Part No.	Price
ERZ-8011	Clockwise rotation, 12 Volt, 149 tooth - 12/14 Pitch Gear	235, 290, 320, 340, 360, 540	Lycoming 31A21198, Sky-Tec 149-NL,149-12PM, LS, Lamar PM1201, PM1204, MZ-4205 thru -4207,-4217 thru -4219,-4221 thru -4226,-6222,-6224	07-01102	$437.00
ERZ-8012	Clockwise rotation, 12 Volt, 122 tooth - 12/12 Pitch Gear	235, 290, 320, 360, 540	Lycoming 31A21210, Sky-Tec 122-NL,122-12PM, LS, Lamar PM1203, MZ-4204,-6204	07-01103	$443.00
ERB-8011	Clockwise rotation, 24 Volt, 149 tooth - 12/14 Pitch Gear	235, 320, 340, 360, 540	Lycoming 31B21064, Sky-Tec 149-NL, 149-NL/ec, 149-24, Lamar PM2401, MHB-4010,-4016 thru -4020,-6014,-6016,-6018	07-01099	$479.00
ERB-8012	Clockwise rotation, 24 Volt, 122 tooth - 10/12 Pitch Gear	235, 290, 320, 340, 360, 540	Lycoming 31B21211, Sky-Tec 122-NL/ec,122-24PM, LS, Lamar PM2403, MHB-4015,-6001, MMU-4001,-6001, Delco 1109669	07-01101	$441.00
ELB-8011*	Reverse/Counter rotation, 24 Volt, 12/14 Pitch Gear	LTIO-540, LTIGO-540	Lycoming 14214, Sky-Tec 149-NLR/ec*, Lamar PM2404, MHB-4014, MHB-6014	07-02665	$558.00
ELZ-8021*	Reverse/Counter rotation, 12 Volt, 12/14 Pitch Gear	LIO-320, LO-360, LTO-360, LIO-360	Lycoming 14215, Sky-Tec 149-NLR, Lamar PM1204, MZ-4220, MZ-6220	07-02666	$524.00

HARTZELL ENGINE TECH. STARTERS

M-DRIVE STARTERS FROM HARTZELL ENGINE TECHNOLOGIES

- Upgrade your Continental Engine with a M-Drive Starter.
- Safely Disengages from the starter adapter
- Protects All Continental Adapters
- No Back-Torque » Drive shaft spins free
- Lightweight » Only 7.5 lbs.
- Internal Solenoid
- Performance » Powerful permanent magnet
- Easy installation » Continental engines
- Tough » Tested under the most extreme cond.
- FAA/PMA approved
- Designed for Aviation » Not modified for aviation
- 2 Year Unlimited Hours Warranty

The new M-Drive starter has more cranking power than any current lightweight competitor & the perfect replacement for your old heavyweight or Iskra starter. Designed specifically for Large-bore Continental (formerly TCM) engines the M-Drive starter's electromechanical solenoid completely disengages from your aircraft's starter adapter, immediately releasing the wrap spring, so the starter adapter is protected from wear damage.
Recommended protection for ALL starter adapters (classic, Permold, Sand cast, etc.), the new M-Drive isthe lightest aircraft starter that truly protects your Continental (formerly TCM) starter adapter with a unique internal solenoid. To protect your starter adapter you need a starter that fully disengages after the engine has started. Not fully disengaging will lead to premature failure of the starter adapter from excessive wear of the shaft & wrap spring.
The M-Drive completely disengages the starter from the starter adapter, safely allowing the drive shaft to spin free. No other gear-reduction starter has this in-line engagement advantage resulting in more engine starts for your aircraft! Weighing only 7.5 lbs, FAA/PMA approved, & boasting a powerful 2.8kw high torque motor, the new M-Drive can start even the hardest cranking large bore TCM engines while reliably protecting the starter adapter.
12V MRZ-7000 M Drive..... P/N 08-07220..... $592.00 24V MRB-7000 M Drive..... P/N 08-07221 .....$592.00

TCM ENERGIZER STARTERS

FACTORY NEW				FACTORY OVERHAULED			
Model	Core	Part No.	Price	Model	Core	Part No.	Price
ES646238-2	$150.00	CALL	CALL	646238-2R	$150.00	07-02650	$312.00
ES646238-3	$150.00	CALL	CALL	646238-3R	$150.00	07-06501	$346.00
ES646275-1	$190.00	CALL	CALL	646275-1R	$190.00	07-06502	$346.00

HARTZELL ENGINE TECHNOLOGIES FACTORY OVERHAULED STARTERS

If No Cores are Available at factory, we will require your core for overhaul.

Mfg. Ref.	P/N	Core	Price
MC-6501	07-06503	$150.00	$328.00
MHB-4004R	08-06206	$175.00	$760.00
MHB-4005R	08-06207	$235.00	$760.00
MHB-4008R	08-06203	$134.00	$436.00
MHB-4014R	08-06209	$200.00	$541.00
MHB-4016R	07-06504	$200.00	$539.00
MHB-4017R	08-06211	$200.00	$513.00
MHB-4018R	08-06212	$200.00	$541.00
MHB-4020R	CALL	$200.00	CALL
MHJ-4003SR	07-06505	$190.00	$362.00
MHJ-4004R	08-06204	$185.00	$837.00
MHJ-4005R	08-06205	$300.00	$798.00
MMU-4001R	07-06506	$200.00	$513.00
MZ-4204R	CALL	$165.00	CALL
MZ-4208R	08-06208	$124.00	
MZ-4214R	07-06513	$100.00	
MZ-4219R	CALL	$200.00	
MZ-4220R	08-06198	$200.00	
MZ4222R	07-06509	$200.00	
MZ-4224R	CALL	$200.00	
MZ-4225R	08-06201	$200.00	
MZ-4226R	08-06202	$200.00	
646238-2R	07-02650	$150.00	

HARTZELL STARTERS FOR LYCOMING/ CONTINENTAL ENGINES

HARTZELL ENGINE TECH. NEW STARTERS

Description	Part No.	Price
MHJ-4003S New Hartzell Starter	08-06180	$893.00
MHB-4014 New Hartzell Starter	08-06182	$776.00
MHB-4016 New Hartzell Starter	07-01110	$431.00
MZ-4214 New Hartzell Starter	08-06179	$489.00
MZ-4222 New Hartzell Starter	08-06188	$840.00

HARTZELL ENGINE TECH. STARTER DRIVES

Designed to fit prestolite starters. Shipping Weight: all units, 2 Lbs.

Description	Part No.	Price
EBB75A MZ series 42054207, 42174219. MHB series 40014007 & 40104013	07-06515	$121.75
EBB124AMHJ series-All, MMU series-All, M24204, MHB4015	07-06510	$115.75
31AMZ series 4221 to 4223, MHB 4016 to 4019	07-06511	$109.75
42A STARTER DRIVE ES EBB142A	07-06512	$127.75
r 9301001-F 01 OVERHAUL KIT PM1201 & Series Starters includes shear pin	07-01180	$89.75

HART

The Magnaflite lightweight starter listed in the table he E-Drive and/or X-Drive starter listed therein. All Magnaflite P/N's listed below that are currently installed, being installed or in inventory are in no way affected. Standard Limited Warranty, is in effect and returns for reason of supercedure will not be accepted.

KAPS Part Number	X-Drive Left Hand Solenoid	X-Drive Right Hand Solenoid	E-Drive
MHB-6016	SRB-9021	SRB-9031	ERB-8011
MHB-6018	SRB-9021	SRB-9031	ERB-8011
MMU-6001	SRB-9022	SRB-9032	ERB-8012
MZ-6204	SRZ-9022	SRZ-9032	ERZ-8012
MZ-6222	SRZ-9021	SRZ-9031	ERZ-8011
MZ-6224	SRZ-9021	SRZ-9031	ERZ-8011
MZ-6226	SRZ-9021	N/A	ERZ-8011

HARTZELL ENGINE TECHNOLOGIES STARTERS

HARTZELL STARTERS FOR LYCOMING/CONTINENTAL ENGINES

Hartzell Permanent Magneto Starters represent the next generation in starter technology, setting new standards in performance and reliability. These new lightweight starters deliver exceptional torque to start virtually any general aviation piston engine in nearly any environment, yet weigh about 40% less than conventional starters. The key is Presicions patented permanent magnet motor design. It replaces the bulky windings of a conventional starter motor with lightweight permanent magnetos. This revolutionary design not only eliminates considerable weight, but results in more efficient starter operation and improved performance under all conditions. During extensive performance testing, Hartzell starters consistently provided quicker engine starts than conventional starters under a variety of operating conditions.
These TBO starters are built to go the distance between engine overhauls. Conventional starters generally dont last. They usually have to be pulled off for repair or replacement at least once during the life of the engine.

12 VOLT STARTERS

MODEL	PRESTOLITE	LYCOMING	PART NO.	PRICE
PM1203	MZ-4204	76210	07-01270	$488.00
PM1201	MZ-4205	76213	07-01269	$477.00
PM1201	MZ-4206	76211	07-01269	$477.00
PM1201	MZ-4207	75699	07-01269	$477.00
N/A	MZ-4208	75787	---	---
PM1204	MZ-4216	LW-10556	08-06007	---
PM1201	MZ-4217	LW-14209	07-01269	$477.00
PM1201	MZ-4218	LW-14207	07-01269	$477.00
N/A	MZ-4219	LW-14211	---	---
PM1204	MZ-4220	LW-14215	08-06007	$507.00
PM1201	MZ-4221	LW-15573	07-01269	$477.00
PM1201	MZ-4222	LW-17771	07-01269	$477.00
N/A	MZ-4223	LW-15576	---	---
PM1202	MZ-4224	LW-16460	---	---
PM1201	MZ-4225	LW-18047	07-01269	$477.00
PM1201	MZ-4226	LW-18989	07-01269	$477.00
CONTINENTAL				
PM1207	---	646238	07-01271	$586.00
PM	---	646238-3	07-02651	$487.00

24 VOLT STARTERS

MODEL	PRESTOLITE	LYCOMING	PART NO.	PRICE
PM2401	MHB-4001	76212	07-01272	$499.00
PM2401	MHB-4002	75700	07-01272	$499.00
PM2401	MHB-4003	76214	07-01272	$499.00
N/A	MHB-4004	77879	---	---
PM2401	MHB-4005	78791	07-01272	$499.00
PM2401	MHB-4007	LW-11936	07-01272	$499.00
PM2401	MHB-4008	LW-12023	07-01272	$499.00
PM2401	MHB-4009	LW-12159	07-01272	$499.00
PM2401	MHB-4010	LW-14208	07-01272	$499.00
N/A	MHB-4011	LW-14212	---	---
PM2401	MHB-4012	LW-14210	07-01272	$499.00
PM2402	MHB-4013	LW-14213	08-06008	$479.95
PM2401	MHB-4014	LW-14214	07-01272	$499.00
PM2403	MHB-4015	LW-15483	07-01273	$495.00
PM2401	MHB-4016	LW-15572	07-01272	$499.00
N/A	MHB-4017	LW-15571	---	---
PM2402	MHB-4018	LW-15577	08-06008	$479.95
PM2401	MHB-4019	LW-15574	07-01272	$499.00
PM2401	MHB-4020	LW-18990	07-01272	$499.00
N/A	MHB-4004	77879	---	---
N/A	MHB-4005	LW-12787	---	---
PM2403	MHB-4001	LW-16207	07-01273	$495.00
CONTINENTAL				
PM2407	---	642275	07-01274	$586.00

LAMAR STARTER OVERHAUL KITS

Lamar Technologies overhaul kits include all parts necessary for a normal major overhaul, as well as any special tools, lubricants, and thread compounds.

The model specific kits cover all starters manufactured by Lamar Technologies in eight different kits. The overhaul manual has been re-written to highlight tear down and assembly with detailed drawings and instructions. The manual covers all aspects of the rebuild in easily understood steps with tech support just a call or email away. (See Documents Tab)

Average time to do a complete overhaul can be accomplished in less than an hour reducing downtime and increase revenue, as well as maintain the quality standards of the maintenace organization.

Description	Part No.	Price
PM1201-OHK - Fits all PM1201/1202 starters	07-01269-1	$227.95
PM1203-OHK - Fits all PM1203 starters	07-01270-1	$217.95
PM1204-OHK - Fits all PM1204 starters	08-06007-1	$218.95
PM2401-OHK - Fits all PM2401/2402 starters	07-01272-1	$192.75
PM2403-OHK - Fits all PM2403 starters	07-01273-1	$227.95
PM2404-OHK - Fits all PM2404 starters	08-06009-1	$227.95

FOR A COMPLETE LISTING OF LAMAR STARTER OVERHAUL KITS & REPLACEMENT PARTS, SEE WWW.AIRCRAFTSPRUCE.COM

HARTZELL OVERHAULED STARTERS

In addition to the factory new Lamar starters listed above, Aircraft Spruce also stocks overhauled Lamar starters. The PM1201 starter is ideal for the Lycoming O-320 & O-360 series engines and the PM2401 is applicable to the Lycoming O- 540 series engines.
Like the new Lamar starters, these overhauled starters are FAA/PMA approved, fully bench tested, provide superior cold weather performance, utilize a patented permanent magnet design, use a planetary gear reduction for optimum speed and torque (110 RPM), and draw less amperage than lightweights to help lengthen battery life.

Overhauled PM1201 starter ..... P/N 08-01201 ..... $319.00
Overhauled PM2401 starter ..... P/N 08-02401 ..... $362.00
Overhauled PM1204H starter ..... P/N 08-06011 ..... $294.95
Overhauled PM2404H starter ..... P/N 08-06015 ..... $319.95

EP

SKY-TEC STARTERS

EP

SKY-TEC ST2 & KCST2 MODEL STARTERS FOR SMALL CONTINENTAL ENGINES

SKY-TEC PULL START CONVERSION C12ST2 - FOR FACTORY KEYSTART STARTER FOR A65-12 THROUGH O-300C ENGINES - 9.2 lbs., Bolt-off / Bolt-on, High Torque, Low-Current, Gasket Included, Replaces TCM starter & continuous running sprag clutch in TCM factory keystart engines. Now featuring internal, self-resetting Kickback Protection System - zero maintenance - no pin to shear.

SKY-TEC KCST2 - STC-CERTIFIED CONVERSION KIT FOR FACTORY PULL-START ENGINES - STC Modification of Engine Required (removal of OEM starter pinion shaft in rear of engine). STC Modification of Airframe Required (replacement of pull-start T-handle with Sky-Tec-supplied push button & wiring) High Torque, Low-Current, 9.2 lbs. Now featuring internal, self-resetting Kickback Protection System - zero maintenance - no pin to shear.

Complete Conversion Kit includes: C12ST2/S Starter, Push Button Switch, Wiring Harness, Gasket, Instructions, STC for Airframe Modification, STC for Engine Modification

SKY-TEC KEY-START C12ST2/SR - REVERSE TURNING for Continental GO-300 Engines ONLY - Internal, self-resetting Kickback Protection System - zero maintenance - no pin to shear. 6-8 lbs. lighter and significantly more reliable than the original, heavyweight factory starter.

Also sold in a Kit (KCST2/SR)STC Certified conversion kit includes C12ST2/SR REVERSE TURNING starter for GO-300 engines (only), push-button switch, push-to-start placard, wiring harness, two STC's (one for airframe modification, one for engine modification) and instructions. 2-year factory warranty.

Model C12ST2 (Starter only) ..... P/N 07-00614 ..... $564.00
Model C12ST2/S (Starter only) ..... P/N 07-00719 ..... $564.00
Model KCST2 conversion kit ..... P/N 07-00721 ..... $586.00
KCSW Switch and harness only ..... P/N 07-00722 ..... $47.50
Model C12ST2/SR (Starter only) ..... P/N 07-01855 ..... $564.00
Model KCST2/SR (Kit) ..... P/N 07-01856 ..... $527.00

SKY-TEC ST3 MODEL STARTERS FOR LARGE CONTINENTAL ENGINES

Safe for all types of TCM starter adapters! Feature Sky-Tec's exclusive proprietary clutch design virtually eliminating starter induced TCM starter adapter wear. FAA/PMA certified replacement part approved for all TCM starter adapters including "classic Style", "improved style", "permold", and "sand cast" engines. Simple bolt-off / bolt-on installation. Designed to crank no slower than TCM heavyweight OEM starters. Weight: 6.9 lbs. Generous 2-Year factory warranty.

Model C12ST3 12 Volt ..... P/N 07-00766 ..... $498.00
Model C24ST3 24 Volt ..... P/N 07-00767 ..... $527.00

SKY-TEC ST5 SERIES STARTERS

The ST5 starter couples a high power 2.2 kW motor with an innovative solenoid-engaged (and disengaged) drive system completely disengages the powerful permanent magnet motor while the starter is unpowered eliminating possible TCM starter adapter wear while providing authoritative, high-torque starting. Positive solenoid enabled engagement and disengagement allows the TCM starter adapter to fully unwrap under all normal operating conditions thus greatly prolonging starter adapter life.Weight: 9.1 lbs.

C12ST5 ..... P/N 07-01341 ..... $512.00
C24ST5 ..... P/N 07-01342 ..... $556.00

SKY-TEC BCE-6 EXTENSION CABLE KIT

6" Battery Cable Extension kit aids the installatin of starters in aircraft that have limited slack available in the aircraft's starter power cable. Generally not required for TCM starter installations. May be needed in some PM, and NL model Lycoming installations. P/N 07-00923 ..... $12.50

SKY-TEC STARTER 122-LSA

The lightest Lycoming starter ever at just 6.3 lbs. The 122-LSA is Lycoming's factory OEM starter on the new O-233 LSA engine. An excellent 12V starter for O-235, O-290 and O-320 engines with 122-tooth ring gears. Plenty of torque, high cranking speed, low current draw. Features a precision machined housing specifically designed to mount the lightweight Plane-Power AL12-EI60 alternator - enabling the industry's lightest weight starter/alternator pairing at just 13.2 lbs. for both! Perfect for lightweight, Lycoming-powered LSA aircraft. Experimental.

Starter 122-LSA ..... P/N 07-01806 ..... $454.00
122-LSA Starter & AL12-E160-L Alternator Kit
P/N 07-01806-1 ..... $892.00

SKY-TEC STARTERS HIGH-TORQUE INLINE STARTERS FOR LYCOMING ENGINES

Featuring Sky-Tec's Exclusive KPS® Kickback Protection System, Sky-Tec's NL-series of starters fit all Lycoming powered aircraft. All NL-series starters are FAA-PMA certified as replacement parts for all non-geared, flat Lycoming engines. Sky-Tec NL-series starters fit without modification or 337 paperwork. At only 9.3 lbs., the NL-series is the lightest Bendix-free inline available. Two-year warranty.

Model No.	Voltage/ Description	Pitch	FAA-PMA Eligible	Part No.	Price
122-NL	12 Volt (Also 24 Volt Switchable)	10/12 (for 122- Tooth Rng Gears)	Lyc 235, 290, 320, 360, 540 & 720	07-00761	$431.00
149-NL	12 Volt (Also 24 Volt Switchable)	12/14 (for 149- Tooth Rng Gears)	Lyc. 235, 290, 320, 340, 360, 540	07-00762	$431.00
149-NLR	12 Volt (Also 24 Volt Switchable)	12/14 (for 149- Tooth Rng Gears)	Lyc. LIO-320, LO-360, LTO-360, LIO-360, LHIO-360, & LTIO-540	07-00763	$431.00
122-NL/ec	24 Volt Super Duty	10/12 (for 122- Tooth Rng Gears)	Lyc. 235, 290, 320, 360, 540 & 720	08-07061	$488.00
149-NL/ec	24 Volt Super Duty	12/14 (for 149- Tooth Rng Gears)	Lyc. 235, 290, 320, 340, 360, 540 &	08-07059	$488.00
149-NLR/ec	24 Volt Super Duty	12/14 (for 149- Tooth Rng Gears)	Lyc. LTIO-540	08-07060	$488.00

SKY-TEC HIGH-TORQUE STARTER

One of the lightest Lycoming starters available at only 8.9 lbs. Spins twices as fast as most heavyweight OEM starters. Zero maintenance - no pins to replace in the event of a kickback. FAA-PMA approved for most Lycoming engines. Some airframe applications may require minor modification for best fit. Confirm aircraft fit, ring gear tooth count and voltage before ordereing. 2-Year factory warranty.

Model	Voltage	Description	Part No.	Price
122-12HT	12 Volt	10/12 Pitch (122 Tooth)	07-06250	$488.00
122-24HT	24 Volt	10/12 Pitch (122 Tooth)	07-06251	$531.00
149-12HT	12 Volt	12/14 Pitch (149 Tooth)	07-01840	$488.00
149-24HT	24 Volt	12/14 Pitch (149 Tooth)	07-01841	$531.00
149-12HT-H	12	12/14 (149 Tooth) Sky-Tec Starter	07-01336	$488.00
149-24HT-H	24 Volt	Replaces B&C Starters on 24 Volt Robinson Helicopters	07-01844	$531.00
149-24HT/EC	24	Sky-Tec Starter (149 Tooth)-SuperDuty/ec	07-06255	$531.00

SKY-TEC FLYWEIGHT™ STARTERS FOR LYCOMING ENGINES

FAA-PMA approved for most Lycoming engines. Some airframe applications may require modification for best fit. LS model has the solenoid offset to the left side and PM model is offset to the right. Confirm aircraft fit, ring gear tooth count and voltage before ordering. Generous 2-Year factory warranty. Note: The LS Solenoid is at the 2:30 position and the PM Solenoid is at the 7:30 position when viewed from the front. 8.1 lbs.

Model	Part No.	Price
122-12LS	07-06245	$380.00
149-12LS	07-06246	$380.00
122-12PM	07-06252	$380.00
149-12PM	07-06253	$380.00
122-24PM	07-06249	$452.00
149-24PM	07-06257	$452.00

SKY-TEC XLT STARTERS

The world's lightest starter ever certified for Lycoming engines. Only 6.5lbs! Only 8 inches total length and 3.5 inches tall! Left-side mounted solenoid. High torque and fast spin. FAA PMA certified for most Lycoming 4-cylinder engines from O-235 to IO-390. Low current draw. Highly durable, fortified aluminum mount/housing. No Bendix to lubricate. Nothing to maintain. 2-Year factory warranty.

Voltage	Model	Recommended for	Part No.	Price
12V	122-12XLT	Lycoming O-235 - IO-390 engine powered aircraft with 10/12 pitch, 122-tooth ring gears	07-02419	$395.00
12V	149-12XLT	Lycoming O-235 - IO-390 engine powered aircraft with 12/14 pitch, 149-tooth ring gears	07-02420	$395.00
24V	122-24XLT	Lycoming O-235 - IO-390 engine powered aircraft with 10/12 pitch, 122-tooth ring gears	07-02421	$467.00
24V	149-24XLT	Lycoming O-235 - IO-390 engine powered aircraft with 12/14 pitch, 149-tooth ring gears	07-02422	$467.00

RECOMMENDED STARTER BY AIRCRAFT

For complete listing of recommended Sky-Tec™ Starters by Aircraft make & model, please see the Aircraft Spruce website for a link to the Sky-Tec™ website at www.aircraftspruce.com

GPL ELECTRIC STARTERS

GPL ELECTRIC STARTERS

GPL Electric offers an electric starter kit for several rotax engines. This unique system not only allows you to retain pull start, but also allows you to keep oil injection (if present) otherwise, a cover plate can be used (if space constrained). This system safely engages the ring gear at a 90 degree angle, then fully disengages from the crankshaft. The gpl electric starter kit will not disable the engine due to malfunction, so it is the safest designed after market starter kit available for rotax engines and is made in the u.S.. GPL Electric also provides excellent warranty, comprehensive technical support and maintains a full replacement of parts inventory.

GPL STARTER KITS FOR ROTAX ENGINES

GPL Electric Starter Kit Includes:
(M8) Hi Collar Split Washer, (M6 X 90) Socket Head Cap Screw, (M6) Hi Collar Split Lock Washer, (M6 X 18) Socket Head Cap Screw, (M6) Split Lock Washer, (M8 X 25) Socket Head Cap Screw, (M8 X 22) Low Profile Socket Head Cap Screw, Main Casting (D3) Sits In The 10:00 Pos or Main Casting (D4) Sits In The 11:00 Pos, Ring Gear, Inner Spacer, Starter Motor (Heavy Duty), Loctite 242 Threadlocker, Installations Instructions, and Coverplate (If Not Retaining Pull Start)
If Retaining Pull Start The Following Is Also Required
Outer Spacer (1), (M8 X 12) Hex Head Cap Screw (3), (M8) Split Lock Washer (3), and (M6 X 22) Socket Head Cap Screw (4)

Application	Model No.	Part No	Price
Rotax Engines (377,447,503)	03-001	15-06473	$557.00
Rotax Engines (462,582,618,670)	03-004	15-06472	$557.00
Rotax Engines (532 CDI)	03-005	15-08364	$557.00
Rotax Engines (532 POINT)	03-006	15-08365	$557.00

GPL RETAIN PULL START KITS

Retain Pull Start Kit: Engine Specific Outer Spacer And Required Hardware (nuts/bolts).

Application	Model No.	Part No	Price
Rotax Engines (462,582,618,670)	02-29 RO	15-05373	$123.46
Rotax Engines (377,447,503,532)	02-29 SO	15-05374	$123.46

GPL DELUXE STARTER KITS

The Deluxe Starter Kit Includes: Rubber Insulating Boots, Push Button Switch, Solenoid, Regulator/rectifier, 20 Amps Fuse / Fuse Holder, Cables & Wiring (aircraft Specific), Hardware (nuts/bolts). Deluxe Add On Kits Weighs 3 Lb

Application	Model No.	Part No	Price
Challenger Air Crafts (11 ft Cable)	03-009-11	15-08341	$557.00
Other Air Crafts (5 ft Cable)	03-009-05	15-08340	$557.00

GPL ELECTRIC REPLACEMENT STARTER MOTORS

This motor fits all GPL Starter Kits and the Hirth F23 Engine as well. Heavy Duty Starter Motor Model 02-70HD
P/N 15-05371 ..... $262.64

REPLACEMENT STARTER MOTOR FOR ROTAX

(Replaces Rotax P/N 995-430) Voltage: 12 kW: 0.6 Condition: New Rotation: CW Starter Type: PMDD Number of Teeth: 9 Gear OD: 1.154" / 29.3mm Mtg Ear 1 Hole: M8-1.25 Threaded Mtg Ear 2 Hole: M8-1.25 Threaded Weight: 5.2 lbs / 2.36 kg.
Model No. 02-80 ..... P/N 07-02388..... $199.00

GPL PULL START RETENTION KIT

GPL pull start retention kit for Rotax 337, 447, 503, 532 - points and 532 - CDI.
P/N 15-05374..... $123.46

GPL PULL START RETENTION KIT

GPL pull start retention kit for Rotax 462, 582, 618, 670.
P/N 15-07970..... $123.46

GPL CLOCKWISE STARTER F33 AND CUYUNA

GPL clockwise starter f33 and cuyuna.
P/N 15-08398..... $262.64

GPL OIL INJECTION DRIVE KIT

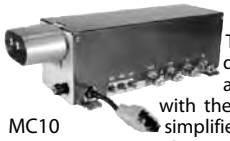
GPL oil injection drive kit long nut pull start.
P/N 15-08397 ..... $52.53

GPL PUSH BUTTON SWITCH

GPL push button switch - 02-22
P/N 15-08396 ..... $20.41

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LIST OF REPLACEMENT PARTS.

LAMAR MC10 MASTER ELECTRICAL CONTROL UNIT


MC10

The Lamar MC10 is a master electrical control unit developed for 14V and 24V single engine experimental aircraft. It is designed to mount on the firewall or fuselage. It houses all the major electrical components except for the battery, starter, and alternator. the MC10 provides a greater degree of protection against moisture, dust and accidental electrical shorts along with the convenience of all the primary electrical components in one location. Features low installation cost, ease of installation and simplified troubleshooting and repair with several new performance & safety features.

XT60

The MC10 embodies the following functions: • Master (battery) (solenoid) control closing the master switch on pilot's panel connects the battery to the primary bus. • 3 aircraft bus outputs, protected via resetable circuit breakers. • Alternator Control; voltage regulation, overvoltage protection, field output overload protection, alternator feeder fault protection • Starter control (solenoid) • Low voltage warning.(L model also includes overvoltage, over-current and reverse-current annunciation) • Battery charge/ discharge ammeter drive (current shunt) • Clock output (always-on) protected with easily accesible external mounted fuse. • Ground power receptacle & control (solenoid) with reverse polarity protection.

Description	Part No.	Price
Lamar Master Control 14V Exp.	11-03295	$1,162.00
Lamar Master Control 28V Exp	11-03298	$1,197.00
Lamar AC14-EXP 28V	11-05041	$159.95
Lamar GC07-EXP Generator Control	11-05042	$1,414.00
Lamar GC11-EXP Generator Control	11-05043	$1,189.00
Lamar MC09-T1 Master Control Turbo	11-05055	$3,750.00

LAMAR ELECTRICAL COMPONENTS

LAMAR #	DESCRIPTION	APPLICATIONS	OUR P/N	PRICE
A-00258-1	Switch, Alternator INOP	Piper: PA23 Series, PA30, PA39, PA38, PA28 Series, PA32 Series, PA34-200T, PA34-220T, Maule*, Raytheon:A36, V358, F338, F33, F33A, F33C, E33a, V35A, 36	07-01146	$99.75
A-00258-2	Switch, Alternator INOP	Piper: PA23 Series, PA31Series, PA34, PA31P, Twin Commander 700 Maule*, Raytheon: 57, E55., 5895B55, D55	07-01147	$124.75
B-00266-2	Overvoltage Relay, 28V, Piper	Piper: PA23-235, PA23-250, PA31 Series, PA36 Series, Islander*: BN2A, BN2B, BN2T. BN2T-4, Trislander*: BN2A MK 11 Series	07-01148	$305.00
B-00286-1	Regulator, 28V, Parallel OP (twin)	Piper:PA23-235, PA23-250, PA31, PA300, PA44-180/180T, PA31P, PA34-220T, Cessna*:421, 414, 402, 340, 310	07-01449	$357.00
B-00288-1	Regulator, 14V, Parallel OP (twin)	Piper: PA23-235, PA23-250, PA30,PA39, PA34-200T, PA34-220T, PA44-180, PA44-180T, Gulfstream Aero*	07-01150	$299.00
B-00289-2	Overvoltage Relay, 14V	Piper: PA18, PA30, PA39, PA23-235, PA23-250, PA28 Series, PA32 Series, PA34-220, PA34-220T, Beech*: 19A, B19, M19A, 23, A23, A23A, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R, Bellanca*: 14-19, 19-2, 19-3, 19-3A, 17-30, 31, 31TC, 17-30A, 31A, 31ATC, Citabria*: 70CAA, 7ECA, 7GCBC, 7KCAB, 1GCBC, 1KCAB, Commander*: 112, B, TC, TCA, Cessna*:175, 185, 188, Grumman*: AA-1, Lake*: LA-4, A, P, Maule*: M-5-180C, 235C, M-6-180, 235, M-7-235, MX-7-180, 235, Varga*: 2150A	07-01151	$195.90
B-00306-3	Regulator, 28V, Parrallel OP (twin)	Piper: PA60, PA60-601, PA60-601P, PA60-602P, PA60-700P	07-01153	$550.80
B-00307-1	Voltage Regulator, 28V	Twin Commander 700, 500s	07-01454	$246.95
B-00325-1	Timer, Pheumatic, 28V	Piper: PA23 Series, PA31 Series, PA31T Series	07-01455	$266.95
B-00331-2	Voltage Regulator, Type 1, 14V	Piper: PA38	11-04130	$205.95
B-00337-0	Overvoltage Relay, 28V	Twin Commander 690C, 695, 695A, 690D, 695B	07-01456	$209.95
B-00337-1	Overvoltage Relay, 28V	Twin Commander 700	07-01157	$209.95
B-00341-1	Time Delay Switch	Piper: PA31 Series, PA42-720	07-01158	$593.00
B-00345-1	Thermostat Control	Piper: PA31T, T1	07-01159	$3,429.00
B-00353-1	Timer Module, Surface De-ice	Piper: Pa31 Series, PA31P, PA42-720, PA42-1000	07-01161	$630.00
B-00363-1	Timer, Courtsey Light, Beech-28V	Raytheon: E55, 58, 58TC, 58P, 38P, 38P-1, 38P-2, 390	07-01162	$196.95
B-00368-2	Alternator Control, 28V Load	PA28/PA-32 Series - See www.aircraftspruce.com for listing.	07-01803	$373.00
B-00368-25	Alternator Control, 28V Load	Experimental	11-03164	$239.95
B-00369-2	Timer (15 sec.)	Piper: PA31T3	07-01166	$238.95
B-00371-1	Alternator Control, 14V	Piper: PA 28 Series, PA32 Series, PA38, Bellanca*: 80CB, 8KCAB, Maule*: M-5-180C, 235C. M-7-235, MT-7-235, M-8-235, MX-7-180, MXT-7-160, 180, 235, Aviat*:Pitts S-2B, S2S, Zenair*: Zenith 2000	07-01167	$298.00
B-00372-1	Alternator Control,Load Balancing	Raytheon: 58, E55, 95B55	07-01168	$699.00
B-00375-1	Monitor Low Voltage	Twin Commander 690C, 690D, 695, 695A	07-01169	$75.50
B-00375-2	Monitor Low Voltage	Piper: PA31P, PA31T Series, PA34 Series, PA46-310, PA46-350, PA31 Series	07-01170	$198.50
B-00378-4	Monitor Low Voltage, 14V	Experimental	11-03166	$162.95
B-00380-2	Sensor-Alt Out, 28V Pulsed	Raytheon: 58	07-01171	$86.75
B-00382-1	Alternator Control, 28V Load	Piper: PA31-350, PA34-220, PA46-310, PA46-350, PA31	07-01172	$401.00
B-00387-1	Voltage Regulator with Overvoltage Protection, 28V	Raytheon: A36, F33A, B36TC, 58, V35B, F33C	07-01173	$398.00
B-00392-1	Alternator Control, 14V, Piper	Piper: PA44-180, PA44-180T	07-01174	$586.00
B-00393-1	Motor Control	Piper: PA46-310P, PA60-700P	07-01175	$558.00
B-00396-2	Dimmer Assembly, 14V/28V	Experimental	11-03165	$436.00
B-00403-1	Voltage Regulator with Overvoltage Protection, 14V	Raytheon: F33A, F33C, V35B, A36	07-01176	$667.00

LAMAR SOLENOIDS

Aviation grade solenoid for applications in continuous duty, fitting current GA production aircraft as well as legacy aircraft. Replaces both single terminal switched units, as well as the current double terminal switched units in production today. All units have multiple quality and functional tests prior to certification and delivery.
Features: Replaces most contactors in general aviation. Available in 12 or 24 Volt. Available in Continuous or Intermittent. All units inspected and tested to performance standards

Description	Part Number	Price
X61-0028 12V Continuous	07-01875	$59.75
X61-0029 24V Continuous	07-01876	$59.75
X61-0030 12V Intermittent	07-01877	$94.50
X61-0031 24V Intermittent	07-01878	$90.75

XP EXPERIMENTAL ENGINES

These engine models include fuel pump, fuel system, magnetos, harness, spark plugs, lightweight starter, oil filter adapter, oil filter and updraft cast sump. Prop governor adapter included on constant speed models. Available in Dynafocal #1, Dynafocal #2 and Conical mounting configurations.
*Extra charge on 320 & 360
**3 day build it at the factory - customer must pay 8.5% Texas sales tax on price of engine.

Vendor Part No.	Description	Part No.	Price
O-320-A1AC2	Carbureted, Fixed Pitch	08-12095	$25,300.00
O-320-B1AC2	Carbureted, Constant Speed	08-12097	$25,600.00
IO-320-A1AC2	Fuel Injected, Fixed Pitch	08-12098	$25,300.00
IO-320-B1AC2	Fuel Injected, Constant Speed	08-12099	$25,600.00
O-360-A1AC2	Carbureted, Fixed Pitch	08-12100	$25,300.00
O-360-B1AC2	Carbureted, Constant Speed	08-12101	$25,600.00
IO-360-A1AC2	Fuel Injected, Fixed Pitch	08-12102	$25,300.00
IO-360-B1AC2	Fuel Injected, Constant Speed	08-12103	$25,600.00
IO-400-J4AD9	Fuel Injected, Constant Speed	08-12104	$34,500.00
08-12105	Horizontal Cold Air Induction Sump Extra Charge on 320 & 360	08-12105	$1,639.00
08-12107	Piston 7:0 - 320 (150HP) Engine*	08-12107	N/A
08-12109	Piston 7.2:1 - 360 (170HP) Engine	08-12109	$100.00
08-12110	Piston 9:1 320 (165HP)/360 (185HP) Engine	08-12110	$400.00
08-12111	Single P Mag	08-12111	$667.00
08-12112	Double P Mag	08-12112	$667.00
08-12113	Lightspeed Single Plasma II Mini	08-12113	$400.00
08-12115	Lightspeed Dual Plasma II Mini	08-12115	$753.00
08-12116	Superior Build School Option**	08-12116	N/A

VANTAGE CERTIFIED OEM ENGINES

These engine models include fuel pump, fuel system, magnetos, harness, spark plugs, lightweight starter, oil filter adapter, oil filter and updraft cast sump. Prop governor adapter included on constant speed models. Available in Dynafocal #1, Dynafocal #2 and Conical mounting configurations.

Vendor Part No.	Description	Part No.	Price
O-320-A1A2	Carbureted, Fixed Pitch	08-12087	$29,200.00
O-320-B1A2	Carbureted, Constant Speed	08-12088	$29,500.00
IO-320-A1A2	Fuel Injected, Fixed Pitch	08-12089	$29,200.00
IO-320-B1A2	Fuel Injected, Constant Speed	08-12090	$29,500.00
O-360-A1A2	Carbureted, Fixed Pitch	08-12091	$29,200.00
O-360-B1A2	Carbureted, Constant Speed	08-12092	$29,500.00
IO-360-A1A2	Fuel Injected, Fixed Pitch	08-12093	$29,200.00
IO-360-B1A2	Fuel Injected, Constant Speed	08-12094	$29,500.00

MILLENNIUM CYLINDERS

Uniform hardness all the way through the steel barrel walls which allows the barrel to provide even wear while withstanding extreme cylinder temperatures and pressures.
Exhaust and intake ports are volumetrically matched to maximum output and performance.
Increased port wall thickness - eliminates problems with warping and cracking.
Computer-generated head fin configuration - deliver more uniform heat transfer and fewer "hot" spots.
Manufactured from the most advanced alloys available - exceed industry standard for strength and porosity.
+ Included with stud assembly.

FOR CONTINENTAL ENGINES

Vendor Part No.	Application	Part No.	Price
SA65000S0	A-65 (Sold in Kit of 4 - STC)	08-11477	$5,417.00
SA1020	0-A20P O-200-A, B; C-125-2, C-145-2, -2H; O-300A, B, C, D	08-10908	$894.00
SA10200-A21P	C-75, 85	08-10909	$995.00
SA10200-A22P	C-90	08-10910	$894.00
SA47006L-A20P	O-470-U; IO-470-D, E, F, H, L, M, N, S, U, V	08-11060	$1,132.00
SA47006S-A20P	O-470-G, M, P; IO-470-C, G, P, R	08-11061	$1,383.00
SA47006S-A21P	O-470-K, L, R, S	08-11062	$1,267.00
SA52006-A20P	IO-520-A, B, BA, BB, C, CB, D, E, F, J, K, L, M, MB	08-11098	$1,203.00
SA52006-A22P	TSIO-520-AF, B, BB, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, R, T, UB, VB, WB	08-11099	$1,203.00
SA52006-A23P	IO-550-A, B, C	08-11100	$1,266.00
SA55006-A20P	IO-550-D, E, F, L (Taper Finned Barrel)	08-11208	$1,405.00

FOR LYCOMING ENGINES

Vendor Part No.	Application	Part No.	Price
SL 10302-A20P	O-235-F, J (High Compression)	08-11510	$1,196.00
SL 10302-A21P	O-235-K, L, M (Medium Compression)	08-11511	$1,118.00
SL 32006N-A20P	O-320-B, D, IO-320-B (Narrow Deck)	08-11732	$965.00
SL 32006W-A20P	O320-B, D; IO-320-B, D; AIO-320-B, C; AEIO-320-D; LIO-320-B (Wide Deck)	08-11735	$1,029.00
SL 32006W-A21P	O-320-A, C, E; IO-320-A, E; AEIO-320-E; (Wide Deck)	08-11733	$965.00
SL 36006N-A20P	O-360-A, C; IO-360-B; HO-360-B; HIO-360-B; O-540-A, D, E, G; IO-540-C, D, N; TIO-540-G (Narrow Deck)	08-11745	$965.00
SL 36006N-A21P	O-360-B, D; O-540-B (Narrow Deck)	08-11746	$965.00
SL 36006TW-A20P	O-540-J; IO-540-A, W (Thin Wide)	08-11747	$1,454.00
SL 36006TW-A21P	O-360-J2A; O-540-F1B5 (Thin Wide)	08-11748	$1,321.00
SL 36006W-A20P	-360-A, C, F, G; IO-360-B, E, M; HO-360-C; HIO-360-B; LO-360-A; AEIO-360-B, H; O-540-A, E, G, H; IO-540-C, D, N, T; AEIO-540-D (Wide Deck)	08-11749	$965.00
SL 36006W-A21P	O-360-B, D; O-540-B	08-11750	$965.00

EP

SUPERIOR GASKETS – CYLINDERS

SUPERIOR LYCOMING ENGINES - MAJOR OVERHAUL GASKET SETS

Lycoming engines are built with the best components in the industry. The only parts we paint are the steel barrels to resist corrosion. All aluminum parts; crankcase, assembly case, sump cylinder heads and assy drives are alodined only for corrosion protection. This leaves an engine that is easy to inspect, provides better cooling, and is lighter weight. FAA-PMA Approved

NOTE: Intake hoses and oil drain-back hoses must be ordered separately.

* Contains Exhaust Gaskets

** Contains Spiratallic "NO BLO" Exhaust Gaskets

*** Exhaust Gaskets, Not Included

Vendor Part No.	Engine Model	Cylinder Head Type	Part No.	Price
SL61499-1**	O-235 Series	Parallel	08-11792	$156.80
SL69371-1**	O-290 Series	Parallel	08-11840	$174.75
SL12636*	AIO, AEIO-320 Wide Deck	Parallel	08-11572	$281.95
SL14815*	O-320-H Series ('76' Series)	Parallel	08-11627	$134.85
SL75439-1**	IO, HIO-360 Conventional IO-360-A, C, D, K; HIO-360-A, C; LIO, LHIO-C Wide Deck	Parallel	08-11966	$174.75
SL75441-1**	IO, HIO-360 Conventional IO-360-A, C, D, K; HIO-360-A, C; LIO, LHIO-C Wide Deck	Angle	08-11967	$180.75
SL12937***	HIO-360-D1A, D1AD Wide Deck	Angle	08-11580	$284.95
SL12945*	O, LO-360 Wide Deck (Dual Magneto)	Parallel	08-11582	$152.75
SL12944**	IO-360 Wide Deck (Dual Magneto)	Angle	08-11581	$152.75
SL14845***	HIO-360-E, F, Wide Deck (Dual Magneto) LHIO-360-F Wide Deck (Dual Magneto)	Angle	08-11628	$179.75
SL71900-1***	VO-435-A Series	Angle	08-11869	$576.00
SL71181-1***	GSO, IGSO-480 Series	Angle	08-11857	$650.00
SL71569-1***	O-540-A, B, E, F, G, H; IO-540-C, D, J, N, R Conventional and Wide Deck (Parallel Valve Head)	Parallel	08-11861	$254.95
SL73185-1***	IO-540-A, B, E, G, H, K, L, M, P, S Conventional and Wide Deck (Angle Valve Head)	Angle	08-11908	$232.95
SL13378*	O-540, B, E, G,H, Wide Deck (Dual Magneto)	Parallel	08-11594	$175.75
SL13367*	IO-540-K, L, M, U Wide Deck (Dual Magneto) AEIO-540-L1B5D Wide Deck (Dual Magneto)	Angle	08-11592	$228.95
SL13377*	IO-540-C, N, T, V, W; O-540-J, L Wide Deck (Dual Magneto)	Parallel	08-11593	$170.75
SL77175-1*	TIO-540-A Series Conventional; TIO-540-A2C Wide Deck	Angle	08-11995	$348.00
SL15903*	TIO-540-S1AD Wide Deck	Angle	08-11642	$646.00
SL12956*	TIO, LTIO-540-F, J, N, R (Dual Magneto)	Angle	08-11583	$256.95
SL75181-1*	IO-720-A, B, C, D Series Conventional	Angle	08-11959	$350.00
SL15423*	IO-720-A1B, B1B, B1BD, D1B, D1C, D1CD Wide Deck	Angle	08-11638	$259.95

SUPERIOR LYCOMING ENGINES - SINGLE CYLINDER GASKET SETS

Lycoming engines are built with the best components in the industry. The only parts we paint are the steel barrels to resist corrosion. All aluminum parts; crankcase, assembly case, sump cylinder heads and assy drives are alodined only for corrosion protection. This leaves an engine that is easy to inspect, provides better cooling, and is lighter weight. FAA-PMA Approved

NOTE: Exhaust Gaskets Must be Purchased Separately

Vendor Part No.	Engine Model	Set No.	Part No.	Price
SL12040-SC	O-235 SERIES	SL12040-SC Parallel Valve Head	08-11559	$14.55
SL12032-SC	O-290; O, IO, LIO-320; AIO, AEIO-320; O-340; O-360-A, B, C, D, F; IO-360-B, E, F; AEIO-360-B, H; HO-360-A, B; HIO-360-B; VO, IVO-360 O-540-A, B, E, F, G, H, J, L; IO-540-C, D, J, N, R, T, V, W; TIO-540-C, E, G, H, K; LTIO-540-K; AEIO-540-D	SL12032-SC Parallel Valve Head	08-11545	$11.55
SL12039-SC	IO-360-A, C, D, J; AIO-360-A, B; AEIO-360-A; HIO-360-A, C, D, E, F; LIO-360-C; LHIO-360-C, F; TO-LTO-360-A; TIO-360-A	SL12039-SC Parallel Valve Head	08-11557	$23.85
SL16916-SC	O-320-H; O, LO, TO, LTO-360-E "76" SERIES	SL16916-SC Parallel Valve Head	08-11679	$16.95
SL12036-SC	O-435-A	SL12036-SC Parallel Valve Head	08-11552	$8.90
SL12034-SC	GO, VO, TVO-435; GO, GSO, IGSO-480; IO-540-A, G, K, L, P, S, AA; AEIO-540-L; TIO, LTIO-540-U; VO, TVO, TIVO-540; IGO, IGSO-540-A	SL12034-SC Angle Valve Head	08-11549	$14.75
SL12033-SC	IO-540-B, E, M, U; TIO-540-A, S, T; TIO-LTIO-540-F, J, N, R; TIO-541-A; IGO-IGSO-540-B	SL12033-SC Angle Valve Head	08-11547	$13.99
SL12037-SC	IO-720-A, D	SL12037-SC Angle Valve Head	08-11554	$14.80

EP

SUPERIOR MILLENNIUM CYLINDERS

Uniform hardness all the way through the steel barrel walls which allows the barrel to provide even wear while withstanding extreme cylinder temperatures and pressures. Exhaust and intake ports are volumetrically matched to maximum output and performance. Increased port wall thickness - eliminates problems with warping and cracking. Computer-generated head fin configuration - deliver more uniform heat transfer and fewer "hot" spots. Manufactured from the most advanced alloys available - exceed industry standard for strength and porosity.

Millennium Cylinders For Continental Engines

Model No.	Application	Part No.	Price
SA65000S0	A-65 (Sold in Kit of 4 - STC)	08-11477	$5,417.00
SA10200-A20P	O-200-A, B; C-125-2, C-145-2, -2H; O-300A, B, C, D	08-10908	$894.00
SA10200-A21P	C-75, 85	08-10909	$995.00
SA10200-A22P	C-90	08-10910	$894.00
SA47006L-A20P	O-470-U; IO-470-D, E, F, H, L, M, N, S, U, V	08-11060	$1,132.00
SA47006S-A20P	O-470-G, M, P; IO-470-C, G, P, R	08-11061	$1,383.00
SA47006S-A21P	O-470-K, L, R, S	08-11062	$1,267.00
SA52006-A20P	IO-520-A, B, BA, BB, C, CB, D, E, F, J, K, L, M, MB	08-11098	$1,203.00
SA52006-A22P	TSIO-520-AF, B, BB, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, R, T, UB, VB, WB	08-11099	$1,203.00
SA52006-A23P	IO-550-A, B, C	08-11100	$1,266.00
SA55006-A20P	IO-550-D, E, F, L (Taper Finned Barrel)	08-11208	$1,405.00

Millennium Cylinders For Lycoming Engines

Model No.	Application	Part No.	Price
SL 10302-A20P	O-235-F, J (High Compression)	08-11510	$1,196.00
SL 10302-A21P	O-235-K, L, M (Medium Compression)	08-11511	$1,118.00
SL 32006N-A20P	O-320-B, D; IO-320-B (Narrow Deck)	08-11732	$965.00
SL 32006W-A20P	O320-B, D; IO-320-B, D; AIO-320-B, C; AEIO-320-D; LIO-320-B (Wide Deck)	08-11735	$1,029.00
SL 32006W-A21P	O-320-A, C, E; IO-320-A, E; AEIO-320-E; (Wide Deck)	08-11733	$965.00
SL 36006N-A20P	O-360-A, C; IO-360-B; HO-360-B; HIO-360-B; O-540-A, D, E, G; IO-540-C, D, N; TIO-540-G (Narrow Deck)	08-11745	$965.00
SL 36006N-A21P	O-360-B, D; O-540-B (Narrow Deck)	08-11746	$965.00
SL 36006TW-A20P	O-540-J; IO-540-A, W (Thin Wide)	08-11747	$1,454.00
SL 36006TW-A21P	O-360-J2A; O-540-F1B5 (Thin Wide)	08-11748	$1,321.00
SL 36006W-A20P	O-360-A, C, F, G; IO-360-B, E, M; HO-360-C; HIO-360-B; LO-360-A; AEIO-360-B, H; O-540-A, E, G, H; IO-540-C, D, N, T; AEIO-540-D (Wide Deck)	08-11749	$965.00
SL 36006W-A21P	O-360-B, D; O-540-B	08-11750	$965.00

Vend PN#	Description	Part No.	Price
AN123956	AN123956 O-ring	08-10755	$0.35
AN124001	AN124001 O-ring	08-10756	$3.99
AN500A-10-8	AN500a-10-8 Bolt	08-10757	$1.27
AN565B1032H5	AN565b1032h5 Screw	08-10759	$3.25
AN791-2	AN791-2 Elbow	08-10761	$44.50
AS3208-18	AS3208-18 O-ring	08-10763	$1.02
AS3578-011	AS3578-011 O-ring	08-10764	$0.36
AS3578-017	AS3578-017 O-ring	08-10765	$0.40
AS3578-028	AS3578-028 O-ring	08-10766	$1.32
AS3578-150	AS3578-150 O-ring	08-10768	$1.59
AS3578-252	AS3578-252 O-ring	08-10770	$6.95
AS3582-009	AS3582-009 O-ring	08-10771	$0.25
AS3582-017	AS3582-017 O-ring	08-10772	$0.24
AS3582-112	AS3582-112 Oring	08-10773	$0.51
AS3582-113	AS3582-113 O-ring	08-10774	$0.50
AS3582-130	AS3582-130 O-ring	08-10775	$1.74
AS3582-223	AS3582-223 O-ring	08-10776	$1.66
	Build School Option	08-12116	$0.00
	Dual P Mag	08-12112	$667.00
	Horizontal Cold Air Induction Sump	08-12105	$1,639.00
IO-320-A1A2	IO-320-a1a2 Superior Cert Vantage Engine	08-12089	$29,200.00
IO-320-A1AC2	IO-320-a1ac2 Superior Exp Roller Lifter Engine	08-12098	$25,300.00
IO-320-B1A2	IO-320-b1a2 Superior Cert Vantage Engine	08-12090	$29,500.00
IO-320-B1AC2	IO-320-b1ac2 Superior Exp Roller Lifter Engine	08-12099	$25,600.00
IO-360-A1A2	IO-360-a1a2 Superior Cert Vantage Engine	08-12093	$29,200.00
IO-360-A1AC2	IO-360-a1ac2 Superior Exp Roller Lifter Engine	08-12102	$25,300.00
IO-360-B1A2	IO-360-b1a2 Superior Cert Vantage Engine	08-12094	$29,500.00
IO-360-B1AC2	IO-360-b1ac2 Superior Exp Roller Lifter Engine	08-12103	$25,600.00
IO-400-J4AD9	IO-400-j4ad9 Superior Exp Roller Lifter Engine	08-12104	$34,500.00
	Lightspeed Dual Plasma II Mini	08-12115	$753.00
	Lightspeed SinglePlasma II Mini	08-12113	$400.00
M25988/1-022	M25988/1-022 O-ring	08-10778	$2.95
M25988/1-902	M25988/1-902 O-ring	08-10780	$1.28
M83248/1-009	M83248/1-009 Oring	08-10783	$0.24
M83248/1-015	M83248/1-015 O-ring	08-10784	$0.63
M83248/1-019	M83248/1-019 O-ring	08-10785	$0.63
M83248/1-115	M83248/1-115 O-ring	08-10786	$0.79
M83248/1-120	M83248/1-120 O-ring	08-10787	$0.64
M83248/1-126	M83248/1-126 O-ring	08-10788	$0.64
M83248/1-143	M83248/1-143 Oring	08-10789	$1.62
M83248/1-224	M83248/1-224 O-ring	08-10790	$2.34
M83248/1-327	M83248/1-327 O-ring	08-10791	$2.40
M83248-1-009	M83248-1-009 O-ring	08-10792	$0.18
M83248-1-110	M83248-1-110 O-ring	08-10793	$0.20
M83248-1-117	M83248-1-117 O-ring	08-10794	$0.37
M83248-1-140	M83248-1-140 O-ring	08-10795	$1.62
SA10200-A20P	Millennium Cylinder SA10200-a20p W/ Valves	08-10908	$894.00
SA10200-A21P	Millennium Cylinder SA10200-a21p Power Assy	08-10909	$995.00
SA55006-A20P	Millennium Cylinder SA55006-a20p Pwr Assy	08-11208	$1,405.00
SA52006-A23P	Millennium SA52006-A23p Cylinder Pwr Assy	08-11100	$1,266.00
SL10302-A21P	Millennium Sl10302-A21p Cylinder	08-11511	$1,118.00
SL32006N-A21P	Millennium Sl32006N-A21p Cylinder Complete Assy	08-11733	$965.00
SL32006W-A20P	Millennium Sl32006W-A20p Cylinder Com	08-11734	$965.00
SL36006N-A20P	Millennium Sl36006n-A20p Cylinder Complete Assy	08-11745	$965.00
SL36006N-A21P	Millennium Sl36006n-a21p Cylinder Complete Assy	08-11746	$965.00
SL36006TW-A20P	Millennium Sl36006tw-a20p Cylinder Complete Assy	08-11747	$1,454.00
SL36006W-A21P	Millennium Superior Sl36006w-a21p Cylinder Complete Assy	08-11750	$965.00
MM4SS	Mm4ss Drain Back Clamp	08-10796	$2.51
MS122081	MS122081 Insert	08-10798	$0.51
MS122162	MS122162 Helicoil	08-10800	$0.50
MS124737	MS124737 Helicoil	08-10801	$2.64
MS16624-1087	MS16624-1087 Ring	08-10804	$1.80
MS16624-2087	MS16624-2087 Snap Ring	08-10805	$0.60
MS16625-2081	MS16625-2081 Retaining Ring	08-10806	$0.78
MS16625-2100	MS16625-2100 Lock Ring Internal	08-10807	$1.31
MS16625-3187	MS16625-3187 Ring	08-10808	$0.75
MS20073-05-25	MS20073-05-25 Bolt	08-10810	$7.99
MS20822-6	MS20822-6 Elbow	08-10812	$27.90
MS20823-6D	MS20823-6d Elbow	08-10813	$10.90
MS20823-8D	MS20823-8d Elbow	08-10815	$21.70
MS20913-1	MS20913-1 Plug	08-10816	$5.35
MS20913-4S	MS20913-4s Plug	08-10817	$16.50
MS21209-C4-15	MS21209-c4-15 Helicoil	08-10818	$0.80
MS21318-14	MS21318-14 Drive Screw	08-10819	$0.39
MS21318-21	MS21318-21 Drive Screw	08-10820	$0.09
MS21333-104	MS21333-104 Clamp	08-10821	$0.75
MS21333-75	MS21333-75 Clamp	08-10823	$0.99
MS21333-83	MS21333-83 Clamp	08-10824	$1.47
MS27183-14	MS27183-14 Washer	08-10826	$0.24
MS27769-01	MS27769-01 Plug	08-10827	$2.06
MS27769-5	MS27769-5 Plug	08-10828	$23.80
MS27769-D5	MS27769-d5 Plug	08-10829	$8.55
MS28778-12	MS28778-12 O-ring	08-10830	$1.08
MS29513-142	MS29513-142 O-ring	08-10838	$0.94
MS29513-148	MS29513-148 O-ring	08-10839	$1.99
MS29513-214	MS29513-214 O-ring	08-10840	$0.63
MS29561-007	MS29561-007 O-ring	08-10841	$0.60
MS29561-012	MS29561-012 O-ring	08-10843	$0.51
MS29561-218	MS29561-218 O-ring	08-10848	$0.78
MS29561-222	MS29561-222 O-ring	08-10849	$1.10
MS29561-223	MS29561-223 O-ring	08-10850	$1.02
MS29561-248	MS29561-248 O-ring	08-10853	$2.34
MS35692-10	MS35692-10 Nut	08-10855	$6.35

Vend PN#	Description	Part No.	Price
MS35692-2	MS35692-2 Nut	08-10856	$4.65
MS35756-5	MS35756-5 (2)woodruff Key	08-10857	$1.16
MS35756-6	MS35756-6 Key	08-10858	$1.16
MS35842-13	MS35842-13 Clamp	08-10861	$3.85
MS39326-20	MS39326-20 Hose Clamp	08-10862	$1.14
MS49005-2Z	MS49005-2z Plug	08-10864	$1.12
MS49005-4Z	MS49005-4z Plug	08-10865	$2.08
MS51095-333	MS51095-333 Bolt, Hex, Drilled Head	08-10866	$5.99
MS51527A6	MS51527a6 Elbow	08-10867	$18.50
MS51528A6	MS51528a6 Elbow	08-10868	$19.65
MS51990-105P	MS51990-105p Ring - Lock	08-10869	$2.98
MS9018-01/2-50	MS9018-01/2-50 Helicoil	08-10870	$2.50
MS90725-10	MS90725-10 Bolt	08-10873	$0.64
MS90725-12	MS90725-12 Bolt	08-10874	$0.47
MS90725-13	MS90725-13 Bolt	08-10875	$0.64
MS90725-3	MS90725-3 Bolt	08-10877	$0.75
MS90725-32	MS90725-32 Bolt	08-10878	$1.23
MS90725-35	MS90725-35 Bolt	08-10879	$0.52
MS90725-40	MS90725-40 Bolt	08-10880	$1.23
MS90725-5	MS90725-5 Bolt	08-10881	$1.47
MS90725-8	MS90725-8 Bolt	08-10883	$0.75
MS90725-9	MS90725-9 Bolt	08-10884	$2.67
MS9135-01	MS9135-01 Gasket	08-10886	$0.64
MS9245-25	MS9245-25 Cotter Pin	08-10889	$0.83
MS9388-009	MS9388-009 O-ring	08-10891	$0.14
MS9388-214	MS9388-214 O-ring	08-10892	$0.94
MS9549-17	MS9549-17 Washer	08-10893	$0.52
NAS1352-6H20P	NAS1352-6h20p Screw	08-10894	$10.99
NAS1612-2	NAS1612-2 Packing	08-10895	$0.56
NAS1922-0050-3	NAS1922-0050-3 Clamp 7/16 Hose	08-10896	$18.50
NAS1922-0075-3	NAS1922-0075-3 Clamp	08-10897	$16.70
NASM21044-N3	NASm21044-n3 Lock Nut	08-10898	$0.40
NASM21333-100	NASm21333-100 Clamp	08-10899	$4.80
NASM21333-75	NASm21333-75 Clamp	08-10900	$4.80
NASM501-10-10	NASm501-10-10 Screw	08-10901	$0.40
NASM501-10-8	NASm501-10-8 Screw	08-10902	$0.62
O-320-A1A2	O-320-a1a2 Superior Cert Vantage Engine	08-12087	$29,200.00
O-320-A1AC2	O-320-a1ac2 Superior Exp Roller Lifter Engine	08-12095	$25,300.00
O-320-B1A2	O-320-b1a2 Superior Cert Vantage Engine	08-12088	$29,500.00
O-320-B1AC2	O-320-b1ac2 Superior Exp Roller Lifter Engine	08-12097	$25,600.00
O-360-A1A2	O-360-a1a2 Superior Cert Vantage Engine	08-12091	$29,200.00
O-360-A1AC2	O-360-a1ac2 Superior Exp Roller Lifter Engine	08-12100	$25,300.00
O-360-B1A2	O-360-b1a2 Superior Cert Vantage Engine	08-12092	$29,500.00
O-360-B1AC2	O-360-b1ac2 Superior Exp Roller Lifter Engine	08-12101	$25,600.00
	Piston 7:0 320 150hp Engine	08-12107	$0.00
	Piston 7:2:1 360 170hp Engine	08-12109	$100.00
	Piston 9:1 320 / 360 Engine	08-12110	$400.00
SA539740	Rocker Shaft SA539740	08-03685	$23.70
SA1000 P05	SA1000 P05 Ring	08-10904	$5.95
SA1000 P15	SA1000 P15 Piston Ring	08-10905	$5.95
SA1000	SA1000 Ring	08-10903	$4.75
SA1007 P15	SA1007 P15 Ring	08-10907	$5.75
SA10200-A22P	SA10200-a22p C-90 Millennium Cylinder	08-10910	$894.00
SA10204	SA10204 Valve, Exh.	08-10911	$98.75
SA10205-1	SA10205-1 Guide Ni-resist	08-10912	$11.90
SA10205-1 P05	SA10205-1 P05 Guide N1-resist	08-10913	$14.95
SA10205-1 P20	SA10205-1 P20 Guide Unreamed O200 X-gd	08-10915	$14.95
SA10205-1 P30	SA10205-1 P30 Guide Ni-resist	08-10916	$14.95
SA10206 P05	SA10206 P05 Ring	08-10918	$14.50
SA10206 P15	SA10206 P15 Ring	08-10919	$13.99
SA10206	SA10206 Ring	08-10917	$12.95
SA10209-1	SA10209-1 Guide Intake (unreamed)	08-10920	$13.55
SA10209-1 P05	SA10209-1 P05 Guide Intake (unreamed)	08-10921	$15.50
SA10209-1 P20	SA10209-1 P20 Guide Intake (unreamed)	08-10923	$15.50
SA10209-1 P30	SA10209-1 P30 Guide Intake (unreamed)	08-10924	$15.50
SA2000 P05	SA2000 P05 Ring	08-10927	$19.55
SA2000 P15	SA2000 P15 Piston Ring	08-10928	$19.55
SA2000	SA2000 Ring	08-10926	$14.80
SA2000-SC P15	SA2000-sc P15 Ring Set Single Cylinder	08-10930	$41.70
SA2024	SA2024 (4)plug	08-10932	$2.60
SA2025	SA2025 Plug	08-10933	$2.48
SA21051	SA21051 Gasket	08-10935	$1.25
SA2106	SA2106 Insert, Exh.	08-10936	$25.70
SA21153	SA21153 Shaft, Rocker Valve	08-10937	$19.95
SA21284	SA21284 Housing, Push Rod	08-10938	$6.70
SA21284 P05	SA21284 P05 Housing Pushrod	08-10939	$6.70
SA21477	SA21477 Packing, Cylinder BASe	08-10941	$0.50
SA22133	SA22133 Gasket, Oil Cooler To Adapter	08-10942	$1.22
SA22354	SA22354 Gear, Oil Pump Driving	08-10945	$235.95
SA22354-1	SA22354-1 Oil Pump Kit	08-10946	$681.00
SA22355	SA22355 Gear, Oil Pump, Driven	08-10947	$336.00
SA225	SA225 Gasket Set Top Overhaul	08-10948	$278.95
SA22534	SA22534 Screw, Camshaft Gear	08-10950	$6.50
SA22535	SA22535 Washer	08-10951	$1.47
SA225-T1	SA225-t1 Gasket Set Single Cylinder	08-10952	$39.95
SA22949	SA22949 Bushing	08-10954	$1.58
SA22949 M05	SA22949 M05 Bushing, Rocker Shaft	08-10955	$2.56
SA22949 P05	SA22949 P05 Bushing, Rocker Shaft Boss	08-10956	$1.84
SA22949 P20	SA22949 P20 Bushing	08-10957	$2.44
SA23410	SA23410 Cover, Oil Pressure	08-10958	$150.75
SA24030	SA24030 Spring Valve	08-10961	$8.85
SA24044	SA24044 Retainer, Valve Spring	08-10963	$2.08
SA24239	SA24239 Washer	08-10965	$0.41
SA24770	SA24770 Plug, Crankshaft	08-10970	$1.47
SA24802	SA24802 Key, Valve Spring Outr Retainr	08-10971	$0.21
SA24856	SA24856 Gasket	08-10973	$1.20
SA24890-A7	SA24890-a7 Gasket Set Major Overhaul	08-10975	$104.75
SA25001	SA25001 Seal	08-10976	$8.99

Vend PN#	Description	Part No.	Price
SA25103-A2	SA25103-a2 Gasket Set Major Overhaul	08-10978	$190.80
SA300	SA300 Gasket Set Top Overhaul	08-10981	$80.75
SA3364	SA3364 Ring	08-10982	$15.95
SA3364-SC	SA3364-sc Ring Set Single Cylinder	08-10983	$49.60
SA3365	SA3365 Ring	08-10984	$5.75
SA35019	SA35019 Gasket	08-10985	$3.70
SA352026-A1	SA352026-a1 Gasket Set Major Overhaul	08-10987	$411.00
SA352058	SA352058 Gasket	08-10988	$0.63
SA352061	SA352061 Gasket	08-10989	$5.90
SA352065	SA352065 Gasket	08-10993	$1.44
SA352066	SA352066 Gasket	08-10994	$1.36
SA352068	SA352068 Seal	08-10996	$4.60
SA352069	SA352069 Gasket	08-10997	$5.35
SA352179	SA352179 Gasket, Starter Pad	08-10998	$3.40
SA3577	SA3577 Gasket	08-10999	$2.70
SA35923	SA35923 Gasket	08-11000	$3.75
SA35967	SA35967 Insert, Valve	08-11002	$17.70
SA35971	SA35971 Retainer	08-11004	$8.95
SA35972	SA35972 Bolt, Connecting Rod	08-11005	$16.85
SA35985	SA35985 Gasket	08-11006	$1.62
SA360	SA360 Gasket Set Top Overhaul	08-11007	$143.95
SA36027	SA36027 Gasket	08-11008	$2.74
SA36066	SA36066 Gear, Magneto Drive	08-11010	$465.00
SA3610-SC P05	SA3610-sc P05 Ring Set Single Cylinder	08-11014	$99.75
SA3610-SC P15	SA3610-sc P15 Ring Set Single Cylinder	08-11015	$99.75
SA3610-SC	SA3610-sc Ring Set Single Cylinder	08-11013	$90.85
SA36170 M10	SA36170 M10 Bearing	08-11016	$116.75
SA36171	SA36171 Bearing, Main	08-11017	$31.50
SA4000-SC2 P05	SA4000-sc2 P05 Ring Set Single Cylinder	08-11019	$101.75
SA4000-SC2 P15	SA4000-sc2 P15 Ring Set Single Cylinder	08-11020	$101.75
SA4000-SC3 P05	SA4000-sc3 P05 Ring Set Single Cylinder	08-11024	$66.75
SA4000-SC3 P15	SA4000-sc3 P15 Ring Set Single Cylinder	08-11025	$66.75
SA4000-SC3	SA4000-sc3 Ring Set Single Cylinder	08-11022	$57.75
SA4000-SC5 P05	SA4000-sc5 P05 Ring Set Single Cylinder	08-11027	$59.75
SA4000-SC5 P15	SA4000-sc5 P15 Ring Set Single Cylinder	08-11028	$59.75
SA4000-SC5	SA4000-sc5 Ring Set Single Cylinder	08-11026	$55.75
SA4000-SC6 P05	SA4000-sc6 P05 Ring Set Single Cylinder	08-11030	$89.75
SA4000-SC6 P15	SA4000-sc6 P15 Ring Set Single Cylinder	08-11033	$89.75
SA4000-SC6	SA4000-sc6 Ring Set Single Cylinder	08-11029	$70.75
SA4000-SC7 P05	SA4000-sc7 P05 Ring Set Single Cylinder	08-11035	$111.75
SA4000-SC7 P15	SA4000-sc7 P15 Ring Set Single Cylinder	08-11036	$111.75
SA4000-SC7	SA4000-sc7 Ring Set Single Cylinder	08-11034	$67.75
SA4000-SC8 P15	SA4000-sc8 P15 Ring Set Single Cylinder	08-11038	$41.60
SA4000-SC8	SA4000-sc8 Ring Set Single Cylinder	08-11037	$41.50
SA4001 P05	SA4001 P05 Ring	08-11040	$21.75
SA4001 P15	SA4001 P15 Ring	08-11041	$32.50
SA4001	SA4001 Ring	08-11039	$22.50
SA4003 P05	SA4003 P05 Ring	08-11043	$47.99
SA4003 P15	SA4003 P15 Ring	08-11044	$47.99
SA4003	SA4003 Ring	08-11042	$24.90
SA401870 P03	SA401870 P03 Stud	08-11048	$12.85
SA401870 P07	SA401870 P07 Stud	08-11049	$8.95
SA401870 P12	SA401870 P12 Stud	08-11050	$8.95
SA401870	SA401870 Stud	08-11047	$4.99
SA401893 P03	SA401893 P03 Stud	08-11051	$2.98
SA402151 P03	SA402151 P03 Stud, 5/16 X 1 1/4 Long	08-11054	$3.75
SA402151 P07	SA402151 P07 Stud, 5/16 X 1 1/4 Long	08-11055	$5.60
SA40762BLU	SA40762blu Valve Cover Blue	08-11057	$21.85
SA4700	SA4700 Ring	08-11059	$20.95
SA47006S-A20P	SA47006s-a20p Millennium Cylinder	08-11061	$1,383.00
SA4700-SC3	SA4700-sc3 Ring Set Single Cylinder	08-11063	$50.60
SA4700-SC5	SA4700-sc5 Ring Set Single Cylinder	08-11064	$63.75
SA4700-SC6	SA4700-sc6 Ring Set Single Cylinder	08-11065	$50.65
SA4701	SA4701 Ring	08-11066	$17.70
SA4701-SC7	SA4701-sc7 Ring Set Single Cylinder	08-11068	$58.75
SA4701-SC8	SA4701-sc8 Ring Set Single Cylinder	08-11069	$49.55
SA4705	SA4705 Assy, Ring	08-11070	$29.50
SA4705 P05	SA4705 P05 Ring	08-11071	$31.80
SA4705 P15	SA4705 P15 Ring	08-11072	$30.50
SA4707 P05	SA4707 P05 Ring	08-11075	$17.85
SA4707 P15	SA4707 P15 Ring	08-11076	$29.95
SA4707	SA4707 Ring	08-11074	$17.85
SA4709 P05	SA4709 P05 Ring	08-11078	$11.75
SA4709 P15	SA4709 P15 Ring	08-11079	$11.75
SA470-A1	SA470-a1 Gasket Set Top Overhaul	08-11080	$305.00
SA470-A2	SA470-a2 Gasket Set Top Overhaul	08-11081	$238.00
SA5000-SC5 P10	SA5000-sc5 P10 Ring Set Single Cylinder	08-11086	$100.75
SA5000-SC5 P15	SA5000-sc5 P15 Ring Set Single Cylinder	08-11087	$100.75
SA5003 P05	SA5003 P05 Ring	08-11089	$45.80
SA5003 P10	SA5003 P10 Ring	08-11090	$45.80
SA5003 P15	SA5003 P15 Ring	08-11091	$45.80
SA5003	SA5003 Ring	08-11088	$30.50
SA5004 P05	SA5004 P05 Ring	08-11093	$29.70
SA5004 P10	SA5004 P10 Ring	08-11094	$29.70
SA5004 P15	SA5004 P15 Ring	08-11095	$29.70
SA5004	SA5004 Ring	08-11092	$29.70
SA5201	SA5201 Ring	08-11101	$17.80
SA5201-SC2	SA5201-sc2 Ring Set Single Cylinder	08-11103	$57.75
SA5202	SA5202 Ring	08-11104	$19.85
SA5205A	SA5205a Ring	08-11105	$17.50
SA5208 P05	SA5208 P05 Ring	08-11107	$30.50
SA5208 P10	SA5208 P10 Ring	08-11108	$30.50
SA5208 P15	SA5208 P15 Ring	08-11109	$30.50
SA5208	SA5208 Ring	08-11106	$24.95
SA5209 P05	SA5209 P05 Ring	08-11111	$10.00
SA5209 P10	SA5209 P10 Ring	08-11112	$10.00
SA5209 P15	SA5209 P15 Ring	08-11113	$10.00

Vend PN#	Description	Part No.	Price
SA5209	SA5209 Ring	08-11110	$7.95
SA520-A1	SA520-a1 Gasket Set Top Overhaul	08-11114	$211.95
SA520-A2	SA520-a2 Gasket Set Top Overhaul	08-11115	$188.75
SA520-A3	SA520-a3 Gasket Set Top Overhaul	08-11116	$171.75
SA520-T1-S	SA520-t1-s Gasket Set Single Cylinder	08-11118	$19.50
SA520-T2	SA520-t2 Gasket Set Single Cylinder	08-11119	$23.80
SA520-T3	SA520-t3 Gasket Set Single Cylinder	08-11120	$15.50
SA524818	SA524818 Plug, Pipe	08-11121	$0.86
SA530058 M10	SA530058 M10 Bearing	08-11123	$63.75
SA530058-A4	SA530058-a4 Bearing Set	08-11124	$399.00
SA530058-A4 M10	SA530058-a4 M10 Bearing Set	08-11125	$312.00
SA530058-A5	SA530058-a5 Bearing Set	08-11126	$349.00
SA530058-A5 M10	SA530058-a5 M10 Bearing Set	08-11127	$349.00
SA530058-A6	SA530058-a6 Bearing Set	08-11128	$297.95
SA530162-S	SA530162-s Gasket, Rocker Cover	08-11131	$5.99
SA530367	SA530367 Bearing	08-11136	$7.75
SA530383	SA530383 Bearing, Connecting Rod	08-11137	$15.90
SA530383 M10	SA530383 M10 Bearing, Conn Rod Upper & Lowr	08-11138	$18.90
SA530462	SA530462 Bushing Rocker Shaft Serv	08-11139	$3.99
SA530523	SA530523 Gasket	08-11140	$2.24
SA530658	SA530658 Bushing	08-11142	$5.99
SA530830	SA530830 Assy, Pin	08-11143	$47.85
SA530856	SA530856 Piston Pin	08-11145	$127.75
SA532200	SA532200 Seal	08-11155	$2.26
SA532364-50.0	SA532364-50.0 Felt	08-11156	$4.99
SA532432	SA532432 Plug, Hex Head	08-11157	$6.60
SA532518	SA532518 Gasket	08-11158	$1.42
SA534079	SA534079 Gasket	08-11160	$7.99
SA534316	SA534316 Gasket	08-11161	$2.70
SA534740	SA534740 Gasket	08-11162	$3.99
SA534743	SA534743 Gasket	08-11163	$28.00
SA534857-S	SA534857-s Gasket	08-11166	$6.60
SA534940	SA534940 Gasket	08-11168	$0.74
SA535661	SA535661 Camshaft	08-11174	$658.00
SA535666	SA535666 Screw	08-11175	$3.80
SA535885	SA535885 Gasket	08-11177	$1.06
SA536092-A11	SA536092-a11 Gasket Set Major Overhaul	08-11179	$392.00
SA536092-A9	SA536092-a9 Gasket Set Major Overhaul	08-11181	$356.00
SA536379	SA536379 Screw	08-11182	$4.45
SA536997-A1	SA536997-a1 Gasket Set Major Overhaul	08-11185	$553.00
SA537019	SA537019 Screw	08-11186	$4.95
SA537401	SA537401 Bearing, Thrust	08-11188	$200.75
SA537401 M10	SA537401 M10 Bearing	08-11189	$353.00
SA537401-A3	SA537401-a3 Bearing Set	08-11190	$493.00
SA537401-A3 M10	SA537401-a3 M10 Bearing Set	08-11191	$863.00
SA537690	SA537690 (10)Washer	08-11192	$0.95
SA537721	SA537721 Needle Bearing	08-11193	$6.95
SA537728	SA537728 Screw	08-11194	$2.59
SA537745	SA537745 Gasket	08-11195	$3.60
SA537749	SA537749 Gasket	08-11196	$4.35
SA537870 P30	SA537870 P30 Pushrod Assy	08-11197	$55.75
SA538185	SA538185 Gasket	08-11198	$3.25
SA538304 P30	SA538304 P30 Pushrod Assy	08-11199	$50.55
SA538684	SA538684 Bushing	08-11200	$7.80
SA538804	SA538804 Gasket	08-11201	$1.12
SA539058	SA539058 Washer	08-11202	$0.90
SA539467	SA539467 Piston Pin & Plug Assy	08-11203	$42.85
SA539800	SA539800 Clutch Gear	08-11204	$185.75
SA539800 M15	SA539800 M15 Spring, Clutch	08-11205	$211.95
SA539988	SA539988 Valve, Int.	08-11206	$49.75
SA550-T1	SA550-t1 Gasket Set	08-11209	$16.50
SA625065-2	SA625065-2 Bushing	08-11210	$2.96
SA625142	SA625142 Shaft	08-11211	$33.50
SA625303	SA625303 Gasket	08-11212	$2.86
SA625393	SA625393 Retainer	08-11213	$1.63
SA625957	SA625957 Spring, Valve	08-11215	$2.30
SA625961	SA625961 Seat, Valve Spring	08-11217	$12.50
SA626049-A4	SA626049-a4 Gasket Set Major Overhaul	08-11219	$276.95
SA627246	SA627246 Bearing	08-11224	$188.75
SA627246 M10	SA627246 M10 Bearing	08-11225	$381.00
SA627246-A2	SA627246-a2 Bearing Set	08-11226	$464.00
SA627246A2M10	SA627246a2m10 Bearing Set	08-11227	$598.00
SA627368	SA627368 Gasket, Air Throttle	08-11229	$1.22
SA627731	SA627731 Key, Valve Spring	08-11233	$0.19
SA627795	SA627795 Bearing, Main	08-11234	$217.95
SA627795 M10	SA627795 M10 Bearing	08-11235	$243.95
SA627795-A3	SA627795-a3 Bearing Set	08-11236	$470.00
SA627795A3M10	SA627795a3m10 Bearing Set	08-11237	$675.00
SA628555-1	SA628555-1 Hose	08-11242	$11.60
SA628555-16	SA628555-16 Hose	08-11243	$4.50
SA628975	SA628975 Bushing	08-11246	$24.50
SA629004	SA629004 Snap Ring	08-11247	$0.31
SA629016	SA629016 Gasket, ReductIOn Gear Cover	08-11248	$1.86
SA629117-1	SA629117-1 Rotocoil ASsembly	08-11251	$13.00
SA629159	SA629159 Gasket, Outlet	08-11252	$1.39
SA629163-5	SA629163-5 Clamp (not Faa/pma Approved)	08-11253	$20.90
SA629196	SA629196 Packing	08-11254	$1.23
SA629518-3H	SA629518-3h Plug	08-11258	$7.55
SA630261-11	SA630261-11 Pin *	08-11262	$10.60
SA630261-15	SA630261-15 Pin *	08-11263	$9.90
SA630261-34	SA630261-34 Pin	08-11264	$6.95
SA630261-37	SA630261-37 Pin	08-11265	$6.95
SA630261-38	SA630261-38 Pin	08-11266	$7.70
SA630261-39	SA630261-39 Pin	08-11267	$7.70
SA630261-40	SA630261-40 Pin	08-11268	$7.70
SA630261-41	SA630261-41 Pin	08-11269	$7.70
SA630261-43	SA630261-43 Pin *	08-11270	$8.95

INTAKE HOSES

Lycoming 1-3/4" Intake Hose 69603.....$6.50
Cont. #22800 OUTER & Cont. #21185 INNER Hose (8 sets required for A-65 thru 0-300) P/N 08-03700.....$5.25
Cont. #22800 OUTER Intake Hose 22800.....$4.50
Cont. #21185 INNER Intake Hose 21185.....$1.08

INTAKE GASKETS

Cont. #21327 (4) for A-65 only. $1.35 ea
Cont. #22250 (4) for C-85 — 0-300.....$0.95 ea

EXHAUST GASKETS

Cont.. #21493 (08-05237) for A-65 thru 0-300 SS.....$1.65 ea
Cont. #632837 SS .....$1.63 ea
#77611 for 0-320 - not for H series SS.....$7.85 ea

EXHAUST NUTS

Cont. #22022 (5/16-24) for A-65 thru 0-300 (8) .....$0.86 ea
Cont. #MS20500-428 (1/4-28) for 0-470 (12) .....$2.45 ea
Lyc. #STD1410 (5/16-18) .....$1.48 ea

ROCKER BOX GASKETS

Cont. #530162 for A-65 thru 0-300 (4 required) .....$5.40 ea
Lyc. #75906 for 0-235 thru 0-320 (4 req) $2.20 ea

ROCKER BOX COVER SCREWS

Cont. #535091 (24) .....$0.66 Ea
Lyc. #STD1925 (24) .....$0.99 Ea

CYLINDER BASE SEALS

Cont. #21477 for A-65 thru 0-200 (4).....$0.81 Ea

MAGNETO FLANGE GASKET

Cont. #535324.....$6.75 Ea
Lycoming #62224 .....$1.90 Ea

TACH OIL SEAL

Cont. #642714 (was #640087) for A-65 thru 0-300 ..... $7.65
Lyc. #LW14260 for 0-235, 0-290..... $6.60

OIL PRESSURE HOUSING GASKETS

Lyc. #61173 for 0-235, 0-290 (1) (2 with oil cooler) .....$1.55 Ea

CARBURETOR GASKETS

For A-65 thru 0-200 Cont. #21051 (Top).....$2.25 Ea
Cont. #21323 (Bottom) .....$1.26 Ea

GENERATOR DRIVE BELT

Lyc. #60886 for 0-235, 0-290 ..... $69.75

"O" SERIES LYCOMING VALVE COVER GASKETS

Replace the original cork gaskets which come standard on Lycoming 0-235, 0-320 and 0-360 engines. NOT FAA approved. For experimental aircraft only. P/N 08-01187..... $4.85

TCM GASKET

TCM Gasket for Magnito & Access Drive. P/N 08-07531..... $1.55

ANGLED VALVE "IO" SERIES LYCOMING VALVE COVER GASKETS

These gaskets are for the fuel injected "IO" series, sometimes referred to as the Angle Valve cylinder Lycoming They are not FAA approved and are not manufactured under a PMA. These are used on Angled valve Lycoming engines IO-360, IO-540, IO-720. P/N 08-05882..... $6.70

652072 ALTERNATOR GASKET

TCM Alternator Gasket, Gear driven alternator mounting gasket (gasket for engine that has been converted from generator to alternator).
P/N 07-01492 $3.35

649984 ALTERNATOR GASKET

TCM Alternator Gasket replaces Continental Motors: 352066, 632560.
P/N 07-00768..... $2.45

PUSH ROD SEALS

Continental #539840 for A-65 thru 0-200 (8)$1.24 Ea.

OIL SUMP GASKET & PLUG

Cont. #3577 Gasket..... $1.28
Cont. #532432 Plug $16.90

CRANKSHAFT OIL SEALS

Cont. #530019 for A-65 thru 0-200, Flanged Shaft.....$27.95
Cont. #24321 for A-65 and C-85, Taper Shaft.....$52.75
Lyc. #76940 for 0-235, 0-290 $33.50

AN900 COPPER GASKETS

Cont. Engine Applications, A-65 thru 0-200 (1) each:
-10: Oil sump drain plug thermometer hole in oil screen, suction tube ass'y.....$0.48 Ea
-14: Oil relief valve $0.58 Ea
-22: Tach drive housing.....$1.64 Ea
-28: Oil pressure screen.....$0.96 Ea

AERO-SEAL HOSE CLAMPS

Aero-Seal Clamps for Cont. Intake Hoses.
P/N QS100-M32W.....$1.95 Ea

PROP GOVERNOR GASKET

P/N 07-00878 $15.85

RING HOSE CLAMPS

Cont. #536388 (16) Required $2.06 Ea

ENGINE MOUNT BUSHINGS

Cont. #22387 for A-65, C-85, C-90 except C-90-14F (8) Req'd $2.47 Ea

Lyc. #60883 for 0-235 and 0-290, 7/8" hole (8)Req'd.....$18.85 Ea
Lyc. #71032 for 0-320 with 1" hole (8) Req'd $7.90 Ea.
Lycoming, FAA Approved. Replaces #71032. Set of 8. P/N 05-08074.....$41.85

ENGINE MOUNT WASHERS

Cont. #21530 for A-65, C-85, C-90 except C-90-14F (8) Req'd.....$10.80 Ea
Lyc #STD619 for 0-235 thru 0-320 (8) Req'd .....$9.60 Ea.

CRANKSHAFT SEAL LW11997

LW11997 Crankshaft Seal. Spring is inpregnated in the gasket 4-04.
P/N 08-11997.....$96.75

LYCOMING PARTS TO CONVERT 0-235 WITH SPIN ON OIL FILTER TO OIL SCREEN

Oil Pressure Screen Housing P/N 68974 ..... $697.00
Oil ScreenP/N 62817 .....$99.75
Oil Screen Housing Gasket P/N 61173 ..... $1.55
FOR OIL COOLER INSTALLATION ADD:
Spring P/N 69436 .....$48.85
PlungerP/N 62415 ..... $35.95
GasketP/N AN900-10 ..... $0.48

Cont. Oil Screen ..... P/N 08-01544 ..... $222.95

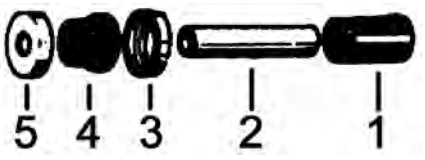
OIL COOLER PARTS SHOWN ABOVE NOT USED WITH THERMAL VALVE ASS'Y

GENERATOR ATTACHING PARTS FOR CONT. C85, C90 & 0-200

Ref.	P/N	Item	Price
#2	352068	Oil Seal	$8.50
#3	530406	653983 Hub Coupling	$263.95
#4	07-01328	Attaching 653982 Retainer	$20.50
#5	626543	Bushing*	$13.50 ea
#6	530407	Sleeve	$89.75
#7	531325	Gear	$382.00
#8	530412	Slotted Nut	$29.90
#9	352179	Starter Gasket	$6.50
#10	35019	Generator Gasket	$6.90

*Note: 626543 is sold as a pair. If only one bushing is needed, order PN 08-06218 ..... $6.75

ENGINE MOUNTING PARTS FOR CONT. C-90-14F & O-200 ONLY



Ref.	P/N	Item	Qty.	Price Each
#1	628555-16	Hose	(4)	$7.90
#2	530627	Spacer	(4)	$24.90
#3	530626	Seat	(8)	$15.80
#4	530740	Bushing	(8)	$16.95
#5	530741	Washer	(8)	$6.50
	AN6-55	Bolt	(4)	$11.50
	AN310-6	Nut	(4)	$1.13
	MS24665-283	Pin	(4)	$0.02

ALTERNATOR & GENERATOR BELTS

Lycoming..... 37A19773-376 (Alt.).....$69.75
Lycoming..... 37B19774-374 (Gen.).....$93.75
Lycoming..... 37B19774-325 (Gen.).....$69.75
Continental..... 539547-31.19 .....$27.50
Piper PA28/PA32 05-06877.....$48.85

24031 VALVE SPRING

Continental Inner Valve Spring Used on C90 & O-200 Engines
P/N 07-24031 ..... $16.50

EP

ENGINE PARTS

CONTINENTAL ENGINE PARTS

C-85	Price Each
639640 Bearing set, rod (2 req.)	$18.60
21477 Cyl base seal	$0.81
530917 Crankshaft seal taper	$41.90
SA402151 Ex. stud	$3.95
22022 Ex. nut	$0.86
646612 Exhaust Valve	$221.95
653728 Gasket, rocker	$5.40
632837 Gasket, no-blow	$1.63
22250 Gasket, intake	$0.95
646539-A1 Gasket set, moh	$133.75
21185 Intake hose	$1.08
641792 Intake Valve (30 degree)	$75.75
530019 Nose seal, flange sft	$27.95
530830 Piston pin	$79.90
539840 Push rod packing	$1.24
649632-A1 Ring set, steel barrel	$30.50

O-200	
627246-A1 Bearing set, main	
639640 Bearing set, rod (2 req.)	$18.60
653851 Camshaft followr,tappet	$289.95
21477 Cyl base seal	$0.81
530019 Crankshaft seal	$27.95
SA402151 Ex. stud	$3.95
22022 Ex. nut	$0.86
646612 Exhaust Valve	$221.95
530162 Gasket, rocker	$5.40
627429 Gasket, no-blow	$13.50
22250 Gasket, intake	$0.95
646539-A1 Gasket set, moh	$133.75
22800 Intake hose	$4.50
641792 Intake Valve (30°)	$75.75
646255 Piston	$312.00
530830 Piston pin	$79.90
539840 Push rod packing	$1.24
649632-A1 Ring set, steel barrel	$30.50
653394 Ring set, chrm barrel	$22.55

O-300	
639640 Bearing set, rod (2 req.)	$18.60
653851Camshaft follower tappet	$289.95
21477 Cyl base seal	$0.81
530917 Crankshaft seal	$41.90
SA402151 Ex. stud	$3.95
22022 Ex. nut	$0.86
646612 Exhaust Valve	$221.95
530162 Gasket, rocker	$5.40
627429 Gasket, no-blow	$13.50
22250 Gasket, intake	$0.95
6465417-A1 Gasket set, moh	$151.75
21185 Intake hose	$1.08
641792 Intake Valve (30°)	$75.75
646255 Piston	$312.00
530830 Piston pin	$79.90
539840 Push rod packing	$1.24
649632-A1 Ring set, steel barrel	$30.50
625958 Springs outer	$8.50

O-470 ANGLE HEAD	
653888 Camshaft follower tappet	$213.95
SSR532200 Cyl base seal	$2.26
PA641250 Crankshaft seal	$31.95
SSR401893 Ex. stud	$2.43
Ex. nut MS20500-428	$2.45
643967 Ex. nut	$2.45
SA643873 Exhaust Valve	$144.75
653191 Gasket, rocker, angle	$8.50
SSR628260 Gasket, no-blow	$8.65
SSR536413 Gasket, intake	$0.39
646546-A1 Gasket set, moh	$231.95
642917-1 Intake hose	$23.90
646263 Piston	$165.95
539467 Piston pin	$74.65
SA534610 Push rod packing	$0.67
649226 Ring set, steel barrel	$149.50
649226CP Ring set, chrm barrel	$120.95
SSR539740 Rocker shaft	$23.70
637837 Spring, valve, outer	$8.25
631521 Springs, valve, inner	$4.90
SA539740 Rocker Shaft	$23.70

IO-470 ANGLE HEAD	
SSR532200 Cyl base seal	$2.26
PA641250 Crankshaft seal	$31.95
SA402151 Ex. stud	$3.95
Ex. nut MS20500-428	$2.45
643967 Ex. nut	$2.45
SA643873 Exhaust Valve	$144.75
653191 Gasket, rocker, angle head	$8.50
628260 Gasket, no-blow	$8.65
SSR536413 Gasket, intake	$0.39
646546-A1 Gasket set, moh	$231.95
642917-1 Intake hose	$23.90
646283 Intake Valve	$198.75
539467 Piston pin	$74.65
SA534610 Push rod packing	$0.67
SSR539740 Rocker shaft	$23.70
SA539740 Rocker Shaft	$23.70

IO-520 TSIO-520	
630826 Bearing set, rod	$11.50
653888 Camshaft follower tappet	$213.95
SSR641066 Cyl base seal	$4.80
PA641250 Crankshaft seal	$31.95
SSR401893 Ex. stud	$2.43
SSR638125 Ex. stud, rosan	$8.65
Ex. nut MS20500-428	$2.45
643967 Ex. nut	$2.45
SA643873 Exhaust Valve	$144.75
653191 Gasket, rocker	$8.50
SSR628260 Gasket, no-blow	$8.65
SSR536413 Gasket, intake	$0.39
642917-1 Intake hose	$23.90
646283 Intake Valve	$198.75
654850 Piston IO-520	$282.95
630046 Piston pin	$62.75
SA534610 Push rod packing	$0.67
652148 Ring set, steel cyl IO-520	$164.75
SA539740 Rocker Shaft	$23.70

CONTINENTAL ENGINE BELTS	
539547-30.00	$26.75
539547-31.19	$27.50
539547-32.00	$35.50
539547-35.00	$53.95
642759	$29.95
37A19973-376 (76026)	$69.75
37A19773-382 (74519)	$72.75
37B19774-325 (60886)	$69.75
37B19774-341 (71579)	$65.75

CONTINENTAL CYLINDERS	
O200 new assy 654377A10	$1,216.00

LYCOMING ENGINE PARTS

O-235 L,N SERIES	Price Each
69373 Bearing, rod, 8 req.	$19.75
71105 Camshaft follower tappet	$106.75
SSR62869 Cyl base seal	$3.60
STD-2180 Cyl drain hose	$4.35
LW-11997 Crankshaft seal	$34.65
SSR31C-12 Ex. stud	$3.99
STD-1410 Ex. nut	$1.48
41271	
Fuel pump, mechanical	$229.95
75906 Gasket, rocker 4 required	$2.20
77611 Gasket, no-blow	$7.85
71973 Gasket, intake	$1.15
SSR61499-1	
Gasket set, moh	$188.00
SSRSTD-1196	
Intake hose 1-1/2"	$2.72
SSRLW-13445 Piston pin	$71.50
68028 Piston pin plug	$14.85
SSRLW-18661	
Push rod packing	$2.45
LW-11800 Spring, valve outer	$27.75
SL60592 Carb. Gaslet	$0.72

O-290	
69373 Bearing set, rod	$19.75
SSR71481 Cyl base seal	$2.12
SSR31C-12 Ex. stud	$3.99
STD-1410 Ex. nut	$1.48
41271	
Fuel pump, mechanical	$229.95
75906 Gasket, rocker	$2.20
77611 Gasket, no-blow	$7.85
71973 Gasket, intake	$1.15
SSR69371-1	
Gasket set, moh	$194.00
SSRSTD-1196	
Intake hose 1-1/2"	$2.72
Intake Valve 73938	$99.75
69841 Piston	$358.50
SSRLW-18661	
Push rod packing	$2.45
62916 Ring,	
compression steel cylinder	$124.75
69401 Ring,	
oil control steel cyl	$20.75
LW11795 Spring, Valve, inner	$17.50
LW-11800	
Springs, Valve, outer	$27.75
69373 Bearing, rod	$19.75
SSR71481 Cyl base seal	$2.12
LW-11997 Crankshaft seal	$34.65
SSR31C-12 Ex. stud	$3.99
STD-1410 Ex. nut	$1.48
LW-19001 Exhaust Valve	$251.95
SL60592 Carb. Gasket	$0.72

LYCOMING CYLINDERS	
O-235C,E,H chrome stud	$1,522.00
LW15318 O320H new ass'y	$1,522.00
LW12427 O-360 new ass'y	$2,467.00
LW12988 O540/HIO360	
new ass'y	$3,592.00

O-320	
71973 Gasket, intake	$1.15
SSRSTD-1196	
Intake hose 1-1/2	$2.72

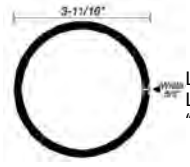
	Price Each
69603 Intake hose 1-3/4	$6.50
73938 Intake Valve	$99.75
75089	
Piston, high compression	$218.95
75413	
Piston, low compression	$167.95
SSRLW-13444 Piston pin	$93.80
SSRLW-18661	
Push rod packing	$2.45
74241 Ring, compression	
steel cylinder	$36.50
SSR73857	
Ring, oil ctl steel cylinder	$24.85
SL11997 Crankshaft Seal	$34.65
SL66224 Carb. Gasket	$0.64
66224 Lyc. Carb. Gasket	$1.15

O,IO-360	
SSA72877 Camshaft follower	$87.75
SSR71481 Cyl base seal	$2.12
LW-11997 Crankshaft seal	$34.65
SSR31C-12 Ex. stud	$3.99
STD-1410 Ex. nut	$1.48
LW-19001 Exhaust Valve	$251.95
LW15473 Fuel pump, mech.	$368.00
75906 Gasket, rocker	$2.20
77611 Gasket, no-blow	$7.85
71973 Gasket, intake	$1.15
SSR75439-1	
Gasket set, moh	$227.00
69603 Intake hose 1-3/4"	$6.50
75089	
Piston, high compression	$218.95
SSRLW-18661	
Push rod packing	$2.45
74241 Ring, comp steel cyl	$36.50
SSR73857	
Ring, oil ctk steel cyl	$24.85
LW11795	
Springs, Valve, Inner	$17.50
LW-11800	
Springs, Valve, Outer	$27.75
SL66224 Carb. Gasket	$0.64

O,IO-540	
SSR71481 Cyl base seal	$2.12
13792 Crankshaft seal	$14.75
SSR31C-12 Ex. stud	$3.99
STD-1410 Ex. nut	$1.48
LW15473 Fuel pump, mech.	$368.00
75906 Gasket, rocker, most	$2.20
77611 Gasket, no-blow	$7.85
71973 Gasket, intake	$1.15
SSR71569-1 Gasket set, moh	$362.00
69603 Intake hose 1-3/4"	$6.50
73938 Intake Valve	$99.75
75089 Piston	$218.95
60828 Piston pin plugs	$14.85
SSR70310 Push rod packing	$0.63
74241 Ring, comp steel cyl	$36.50
SSR73857	
Ring, oil ctl, steel cyl	$24.85
LW11795 Spring, Valve, inner	$17.50
LW-11800	
Springs Valve, outer	$27.75
SL66224 Carb. Gasket	$0.64

OIL COOLER GASKET SETS

Our P/N	Continental P/N	Price ea.
08-00951	631059/630849	$18.50
08-76510	76510	$1.65



LW12681 LYCOMING MAGNETO GASKET

Lycoming Magneto Gasket model # LW12681. For Lycoming 0320 all letter designations EXCEPT the "H" series.

P/N 08-00285 ..... $1.55

LYCOMING PROP GOVERNOR GASKET

Propeller governor gasket for Lycoming 0-320 A & E Series engines. P/N 72053 ..... $1.34

EP

AIRCRAFT SPRUCE WEST
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AIRCRAFT SPRUCE EAST
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Prices Subject to Change Without Notice

CHALLENGER AIR FILTERS

CHALLENGER AVIATION HIGH-FLOW AIR FILTER W/ K&N FILTER MEDIA

Features & Benefits of Prime air filters: • 40% - 50% better airflow • Can be washed and serviced up to 25 times • Increase horse power 2%-4% •Save money and improve engine efficiency • FAA-PMA approved • Properly serviced, can be used to TBO of an engine • Ecologically sound • Better takeoff and climb-out performance • Fire retardant • Faster airspeed and/or better fuel consumption • Have been used on high performance vehicles for 40yrs • Accordion fold design provides up to 5 times the filtering surface of non-pleated designs. PART NUMBERS WITH A -1 INCLUDE GREASE.

Model	Application	Installation	Part No.	Price
CPE-1957	Aero Commander - A-9, A9A, A9B	Brackett BA-104 Fram CA-161PL	08-00721-1	$219.95
CP-1150	Aeronca - S65, S65CA, 7AC, 7ACA, 7 BCM(L-16A) ARMY, 7CCM(6-16B) ARMY, 7DC, 7EC, 7FC, 7JC, 7ECA, 7GCAA, 7GCBC, 7KC, 7KCAB, S7AC, S7CCM, S7DC, S7EC P/N CP-3274 is the installation kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	$190.84
CPE-1957	Aeronca - 7GC, 7GCA, 7HC, 7GCB, 7GCBA, 7KC	Donaldson P10-4145, Fram CA-161-PL, Air Maze 13203	08-00721-1	$219.95
CP-2004	Beech Baron - 95-C55 S/N TE-1 thru TE-451 except TE-50, 95-C55A S/N TE-1 Thru TE-451 Except TE-50, D55 S/N TE-452 Thru TE-492, D55A S/N TE-452 Thru TE-492, E55 S/N TE-768 Thru TE-1079, E55A S/N TE-768 Thru TE-1079 , 58 S/N TH1-TH740 No sealing grease or gasket required for this application.	Donaldson P12-7996, Air Maze 121128-2, Brackett BA-6210-1	08-01024	$210.49
CPE-1957	Beech Musketeer - A23A, A23, A23-24, B23, 23	Brackett BA-104, Beech 169-3	08-07101	$209.95
CP-1182	Bellanca - 14-19-3-A, 17-30 P/N CP-3276 Is the install kit. Use P/N CP-2602 To replace gasket at annual.	Brackett BA-8110	08-00870	$228.95
CPE-1957	Bellanca - 17-30A	Brackett BA-104	08-00721-1	$219.95
CPE-1957	Brantly B2B	Fram CA161PL	08-00721-1	$219.95
CP-1150	Cessna - 120, 140, 150, 150A-M, A150K, A150L, A150M, 152, A152 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106, Donaldson P10-7150, Cessna C294510-0201	08-00843	$190.84
CP-1172	Cessna - 170, 170A, 170B, 172, 172A-G, H, I, K, L, M, N, P, Q P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Cessna C294510-0301, Donaldson P10-7172, Brackett BA-5110	08-00902	$219.00
CPE-1173	Cessna - 172R, S	Donaldson P198281, Fram 3559	08-00894-1	$250.95
CP-1182	Cessna - 180, (exception 1953-1955 models), 180A-H, 180J-K, 182, 182A-H, 182J-R, T182T S/N T18208001 AND ON, 182T S/N 18280945 AND ON, 185, 185A-E, A185E, A185F P/N CP-3276 Is the install kit. Use P/N CP-2602 To replace gasket at annual.	Cessna 0750038-1-4, Donaldson P10-6150, Brackett BA-8110	08-00870	$228.95
CPE-1202	Cessna - 182S, S/N >s 18280001 thru 18280944	Donaldson P19-8290, Fram CA3717	08-00903-1	$212.95
CPE-1178	CIRRUS - SR-20, SR-22 No sealing grease required for this application.	Brackett BA-111	08-01221	$210.54
CPE-2175	CIRRUS - SR-22 with STC SA10925SC	BA-111	08-07404	$271.95
CP-2175	GREAT LAKES - 2T1A-1, 2T1A-2	12009, P57A, AC-6486197 BA-101	08-06282	$189.95
CP-4423	ENSTROM HELICOPTER - F-28A	CA151PL, A86A, AFP5	08-07388-1	$207.95
CPE-1040	GRUMMAN - AG CAT G164B	Brackett BA-105	08-00717-1	$211.95
CPE-1957	LAVIA S.A. - PA25, PA25-235, PA25-260(PRIOR TO S/N 1477)	Fram CA-161PL, Brackett BA-104	08-00721-1	$219.95
CP-1150	LUSCOMBE - 8, 8A, 8B, 8C, 8D, 8E, 8F, T-8F P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	$190.84
CP-1172	MAULE - M-4, M-4T, M-4C, M-4S, M-4-180C, M-4-180S, M-180T, M-4-220, M-4-220C,M-4-220S, M-4-220T, M-5-180C, MX-7-160, MX-7-180,M-5-210C, M-5-235C, M-5-210TC, M-5-220C, M-6-180, M-6-235, M-7-235 P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Brackett BA-6110, Donaldson P12-6491	08-00902	$219.00
CPE-1178	MAULE - M-4-210, M-4-210C, M-4-210S, M-4-210T, M-5-210C No sealing grease required for this application.	Brackett BA-111	08-01221	$210.54
CP-1150	MOONEY - M10 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106, Donaldson P12-0494	08-00843	$190.84
CP-1172	MOONEY - M20, M20A, M20B, M20C, M20D, M20G P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Fram 13219, Brackett BA-6110, Donaldson P12-6491	08-00902	$219.00
CP-1176	MOONEY - M20 E,F REPLACEMENT GASKET P/N-CP-2802	Donaldson P10-4065 Brackett BA-6310	08-01031	$232.50
CP-1174	MOONEY - M20J (201)	BRACKET BA-6210	08-00896	$213.69
CP-1175	MOONEY - M20K S/N 25-1000 & UP	Donaldson P13-6287	08-01020-1	$212.95
CPE-1179	MOONEY - M20M, M20R, M20S	MOONEY 600417-503, AM EDD4028, Donaldson P524257	08-01263-1	$219.95
CPE-1151	PIPER - PA-18 S/N 18-6964 and up O-320	PIPER 454-118, FRAM CA-122PL, BRACKETT BA-112	08-01032-1	$203.95
CPE-1040	PIPER - PA28R-180, PA28R-200, PA28R-200T, PA28R-201, PA28RT-201, PA28R-201T, PA30, PA-34-200, PA39, PA44-180, PA44-180T	Piper 460-630 Brackett BA-105	08-00717-1	$211.95
CPE-1957	PIPER - PA23-235A, PA23-235B , PA23-250B, PA-24 S/N 1479 and up, PA24-180 S/N 1477 and up, PA24-250 S/N 1477 and up, PA24-260, PA25-150, PA25-235, PA25-260 PRIOR TO S/N1477, PA28-140, PA28-150, PA28-160, PA28-180 ,PA28-181,PA28RT-201T, PA28-235,*PA32-260,*PA32-300 S/N 32-7640001 & UP, *PA32R-300, *PA32RT-300, *PA32RT-300T, *PA32R-301 (SP), *PA34-200T, *PA34-220T, *PA36 W/CONT. *COVER PLATE CPE-0528 MAY BE REQUIRED WHEN REPLACING Brackett FILTER.	Fram CA-161PL, Piper 460-632, Brackett BA-104, PURO AFP-2, AC-6485710	08-00721-1	$219.95
CP-1150	PIPER - J3, J3C-65, J3C-65S, J5A, J5A-80, PA-11, PA-11S, PA-12, PA-12S, PA-16, PA-17, PA-18, PA-18A, PA-18S, PA-18-105, PA-20-115 PA-20-135, PA-22-108,PA-22-135, PA-22-150,PA-22-160, PA-38-112 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106, Piper 460-638	08-00843	$190.84
CPE-1956	PIPER - PA28-151, 161 REPLACEMENT GASKET P/N CP-2604.	Brackett BA-16, Piper 560-679	08-01033	$195.46
CP-3202	PIPER - PA-31-300, PA31-310, PA-31-325, PA-31-350, PA-32RT-300T	460-817 560-747 P10-6590	08-07405	$223.95
CP-1150	REIMS/(Cessna) F150G, F150H, F150J, F150K, F150L, F150M, FA150K, FA150L, F152, FA152 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Cessna C294510-0201 Brackett BA-4106 Donaldson P10-7150	08-00843	$190.84
CP-1172	REIMS/(Cessna) - F172D, F172E,F172G, F172H, F172K, F172L, F172M P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Cessna C294510-0301 Brackett BA-5110 Donaldson P10-7172	08-00902	$219.00
CPE-1220	ROBINSON - R-44	ROBINSON C771-1	08-00720-1	$206.95
CP-4422	ROBINSON - R44 II	C-771-2	08-07380-1	$228.95
CPE-1104	ROBINSON - R-22	ROBINSON A771-1 Brackett BA-110	08-01021-1	$211.95
CP-2100	ROCKWELL COMMANDER - 100-180, 112, 112B	124748-019 Brackett BA-3910	08-05915	$199.95
CP-1172	SOCATA - TB9, TB10 P/N CP-3274 Is the install kit. Use P/N CP-2302 To replace gasket at annual.	Brackett BA-5110	08-00902	$219.00
CP-1150	TAYLORCRAFT - BF65, BF12-65, BFS65 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	$190.84
CP-1150	TIGER AIRCRAFT/LLC/GULFSTREAM AMERICAN - AA-1, AA-1A, AA-1B, AA-1C, AA-5 P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4210 AMS13202	08-00843	$190.84
CP-1960	TIGER AIRCRAFT / GULFSTREAM AMERICAN - AA5A	Brackett BA-19	08-07307	$190.84
CP-1958	TIGER AIRCRAFT/GULFSTREAM AMERICAN - TIGER AA-5B	Brackett BA-4106	08-01022-1	$210.95
CP-1150	UNIVAIR - A-2, A2A (FORNEY) F-1, F-1A - P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	$190.84
CP-1150	GLOBE/SWIFT - SWIFT GC-1A, GC-1B P/N CP-3274 Is the install kit. Use P/N CP-2402 to replace gasket at annual.	Brackett BA-4106	08-00843	$190.84
CP-2010	WACO AIRCRAFT - UPF-7	22756-B	08-07389-1	$188.95

CHALLENGER RE-CHARGING KIT

Challenger's recharger kit includes non-aerosol bottles of air filter cleaner and air filter oil for recharging air filters. Restores airflow efficiency.

P/N 08-05884.....$14.95

CHALLENGER SEALING GREASE

K&N Sealing Grease provides an airtight fit around sealing surfaces on all types of air filter elements. It resists heat and will not melt or run off. K&N sealing grease is not to be used on clamp-on filter elements. 6 oz. Squeeze Tube.

P/N 08-04954.....$15.95

If you do not see your application here, or for more CHALLENGER AIR FILTER ACCESSORIES, please call or VISIT OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM

BRACKETT AIR FILTERS

The specially treated polyurethane element in the Brackett filter assures near total protection from any foreign material entering the system. Repels water, fire retardant and has good air flow for proper fuel/air ratio. Has no pleats to collect dirt. Low-cost maintenance with increased engine life. FAA approved. Replace original air filter unit with a Brackett assembly. Thereafter, throw away element and replace with new one at minimal cost.

Aircraft Model Assy	Air Filter P/N	Assy Price	Element Part No.	Element Price
Aero Commander: A9, A9A, A9B	BA104	$28.90	BA3	$16.70
100-100A	BA8910	$67.75	BA8905	$10.95
100-180,112,112A,112B	BA3910	$65.75	BA3905	$15.75
112TC,112TC-A,114,114A	BA4010	$69.75	BA4005	$16.65
500A-B,560F,680F,FL,FLP,500U	BA151	$77.75	BA151E	$19.85
560, 560A, 560E, 680 - L	BA2610L	$71.75	BA2605L	$18.90
560, 560A, 560E, 680 - R	BA2610R	$71.75	BA2605R	$19.70
Aircoupe: 415C, CD, D, E, G	BA8810	$44.50	BA8805	$8.80
F-1, A-1, A2-2	BA4106	$55.75	BA4108	$7.95
Beech: 23, A23, A23A, A23-19	BA104	$28.90	BA3	$16.70
A23-19A, A-23-24, B23	BA104	$28.90	BA3	$16.70
C-23, C24R, A24R, B24R, B19	BA7510	$66.75	BA7305	$12.50
33, A33, B33, C33, E33, F33	BA7110	$68.75	BA7112	$13.65
C33A,E33A,E33,F33A,F33C,G33	BA7210	$68.75	BA7112	$13.65
35, A35, B35 thru S/N2605	BA7310	$87.99	BA7305	$12.50
B35,C35,D35,E35,F35,G35,H35,J35	BA7110	$68.75	BA7112	$13.65
K35, M35, N35, P35, 35R	BA7110	$68.75	BA7112	$13.65
S35 thru S/N D7671	BA7410	$68.75	BA7112	$13.65
S35, V35, V35A, V35B,36,A36	BA7210	$68.75	BA7112	$13.65
A36TC, B36TC, A45(T-34)	BA7210	$68.75	BA7112	$13.65
B45((T-34A), D45(T-34B)	BA7210	$68.75	BA7112	$13.65
W/STC SA1450 SW Cont.IO-520	BA7210	$68.75	BA7112	$13.65
50,B50,C50,D50,D50A,D50B,D50C,D50E	N/A	N/A	BA4805	$18.95
E50 (L-23D, RL-23D),F50	BA100	$99.80	BA7	$18.65
55, A55, B55	BA7610	$69.75	BA7605	$15.50
G50, H50, J50	BA100	$99.80	BA7	$18.65
C55, D55, E55, 355	BA6210-1	$67.75	BA6205	$13.85
S/N TE768-1078 58 thru S/N TH 740	BA6210-1	$67.75	BA6205	$13.85
E55, 355A, SN TE-1079 & up	BA7710	$69.75	BA7705	$16.90
58, 58A, SN TH741 & up	BA7710	$69.75	BA7705	$16.90
A65, 70, 65-B80, B88	BA100	$99.80	BA7	$18.65
76	BA7010	$86.95	BA7005	$13.50
77	BA2010	$57.00	BA6108	$9.80
95, B95, B95A, D95A	BA7810	$67.75	BA7805	$17.65
Bell:				
47G-2,47G2A,47G2A-1,47G-3,47G-3B	BA102	$35.50	BA2	$19.90
47G-3B-1,47G-3B-2,47G-3B 2A,47J,47J-2	BA102	$35.50	BA2	$19.90
47J-2A,47G-3B,47G-3B,47G-3B-1	BA102	$35.50	BA2	$19.90
47G-3B-2,47G-4,47G-4A,47G-5,47J-2,47J-2A	BA103	$54.90	BA9	$24.95
Bellanca: 14-19-3A, 17-30	BA8110	$78.75	BA8103-1	$16.50
17-30A	BA104	$28.90	BA3	$16.70
Brantly: B-2, B-2B	BA104	$28.90	BA3	$16.70
Cessna: 340,340A,402C,414,414A	BA109	$61.75	BA22	$23.50
402B,SN0801 & after,421,T310R	BA108	$69.50	BA13	$24.50
421A, 421B, 421C, T310R	BA108	$69.50	BA13	$24.50
337,337A-H,R172K,F337E-H,336,T41B-D	BA111	$76.75	BA24	$17.90
P337, T337 Rear Engine,172RG	BA5810	$75.85	BA5805	$14.65
R182, TR182, T-182, FR182	BA2510	$75.00	BA2505	$19.65
190, 195, 195A, 195B	BA8410	$88.75	BA8405	$28.50
120,140,140A,150,150A-M,152,152A	BA4106	$55.75	BA4108	$7.95
170, 170A-M,172, 172A-M	BA5110	$62.85	BA6108	$9.80
172N, 172P, F172N, F172P	BA5110A	$62.75	BA6108	$9.80
175, 175A-C, L-19	BA101	$73.75	BA8	$11.95
177, 177A, B, RG, F177RG	BA5710	$82.75	BA5705	$10.95
180 ('53-'55)	BA8010	$69.75	BA8005	$10.50
180A-K,182,182A-R,F182P,F182Q	BA8110	$78.75	BA8103-1	$16.50
185,185A-E,A185E,A185F	BA8110	$78.75	BA8103-1	$16.50
188, 188A	N/A	N/A	BA14	$23.85
205,205A,210,210A,B,C,310A,B,C,D	BA2110	$84.95	BA2305	$16.70
P206A-E, U206A-G, 207, 207A	BA2210L	$84.95	BA2205-L	$19.85
210D-N (to SN 64535 w/o air)	BA2210L	$84.95	BA2205-L	$19.85
210D-N (to SN 64535 w/o air)	BA2210R	$89.85!	BA2205-R	$20.85
210N(SN645436 & up w/air),210R,T210F–N	BA2410	$85.75	BA2405	$33.50
P210 All	BA8710	$91.75	BA8705	$16.99
310F thru L	BA2310	$84.95	BA2305	$16.70
310N-Q, T310P, T310Q, 401 S/N 145-401B S/N 221, 402 S/N 145-402B S/N 800	BA107	$66.75	BA12	$22.50
F150GthruM,FA150K-L,F152,FA152	BA4106	$55.75	BA4108	$7.95
R172K, FR172E-K	BA111	$76.75	BA24	$17.90
TP206,TP206A-E,TU206A-G,T207,T207A	BA2410	$85.75	BA2405	$33.50
411, 411A	N/A	N/A	BA3805	$19.50
Bobcat T-50, AT-17, UC-78, JRC-1	N/A	N/A	BA2705	$21.55
Champion: 7GC,7GCA,7GCBC,7HC	BA104	$28.90	BA3	$16.70
8KCAB,8GCBC,7KCAB,7GCBC,7GCAA	BA8110	$78.75	BA8103-1	$16.50
7GCAA,7GCBC,7KCAB,8KCAB,7ECA	BA106	$29.95	BA11	$12.50
7ECAw/Cont.0-200-A,7ACA,7ECA,7FC,65CA	BA4106	$55.75	BA4108	$7.95
Cirrus: SR20 & SR22 Non-Turbo	BA111	$76.75	BA24	$17.90

Aircraft Model Assy	Air Filter P/N	Assy Price	Element Part No.	Element Price
DeHavilland: DHC-2 (L-20)	BA8210-1	$103.75	BA8205	$29.50
Great Lakes: 2TIA-2	BA101	$73.75	BA8	$11.95
Helio: H295	N/A	N/A	BA21	$31.50
Hiller: UH-12, UH-12-E	BA102	$35.50	BA2	$19.90
Grumman American				
AA-1,AA-1A,AA-1B,AA-5,AA-1C,AA-5	BA4210	$68.75	BA4108	$7.95
AA-5B-Tiger, GA-7, G164B	N/A	N/A	BA20	$17.95
AgCat, G164, G164A	BA8210	$94.75	BA8205	$29.50
AA5A	N/A	N/A	BA19	$13.50
Hughes: 269A,269A-1,269B-C	BA102	$35.50	BA2	$19.90
Lake: LA4, LA4-200	BA3110	$79.95	BA7305	$12.50
Luscombe: 8, 8A thru 8F, T8F	BA4106	$55.75	BA4108	$7.95
Maule: M-4-210T, M-5-210C	BA111	$76.75	BA24	$17.90
M-4-210,M-4-210C,M-4-210-S	BA111	$76.75	BA24	$17.90
MA-4, M-4C, M-4S, M-4T	BA6110	$70.75	BA6108	$9.80
M-4-220, M-4-220C, M-4-220S	BA6110	$70.75	BA6108	$9.80
M-4-220T, M-4-180C, M-4-180S	BA6110	$70.75	BA6108	$9.80
M-4-180T, M-5-220C, M-5-235C	BA6110	$70.75	BA6108	$9.80
M-5-180C, M-5-210C, M-6-180	BA6110	$70.75	BA6108	$9.80
M-6-235, MX7-180, M-7-235	BA6110	$70.75	BA6108	$9.80
Mooney: M-10	BA4106	$55.75	BA4108	$7.95
M-18C	BA5110	$39.95	BA4108	$7.95
M20, M20A, B, C, D, G	BA6110	$70.75	BA6108	$9.80
M20E, F	BA6310	$67.75	BA6305	$18.50
M20J	BA6210	$66.75	BA6205	$13.85
Navion: A with (E) Series Engines	BA113	$39.95	BA25	$18.95
B, G, H, or with 10-470	BA4310	$61.80	BA4305	$11.85
North American: AT6 (SNJ)	N/A	N/A	BA8305	$54.95
Partenavia: P68, P68B, P68C	N/A	N/A	BA162E	$11.95
Piper: 600, 601	N/A	N/A	BA4	$31.50
J-3,J-4,J5,PA-11,11S,12,12S,16,17	BA4106	$55.75	BA4108	$7.95
PA-18,19,20,115,135,PA-22-ALL	BA4106	$55.75	BA4108	$7.95
PA-18-"150",18A-"150",18S-"150",18S-"150"	BA112	$59.95	BA13	$24.50
SN18-6964 & up w/TCDS Item 110 Installed	BA112	$59.95	BA13	$24.50
PA-23,160,24-180 up to SN1476	BA3110A	$66.75	BA7305	$12.50
PA-24-250 up to SN 1476	BA3210	$69.95	BA3205	$16.75
PA-23-235, 250, PA-25-235, 260	BA104	$28.90	BA3	$16.70
PA-28-140, 150, 160, 180, 235	BA104	$28.90	BA3	$16.70
PA-28-181, 201T, PA-28R-201T	BA104	$28.90	BA3	$16.70
PA-28RT-201T, PA-32-260,	BA104	$28.90	BA3	$16.70
PA-23-250,E23-250,SN27 2505 & up	BA115	$39.60	BA15	$17.50
PA-23-250, E23-250, w/Turbo Lyc.	N/A	N/A	BA3505	$18.50
PA-23-250 w/Air Research Turbo	N/A	N/A	BA8605	$15.50
PA-24-260C	N/A	N/A	B-4505	$15.50
PA-24-180 & PA-24-250 SN1477 & up	BA104	$28.90	BA3	$16.70
PA-24-25 SN103-1476 w/Piper Kit 754-285 Install	BA104	$28.90	BA3	$16.70
PA-24-260 SN4000-4802 except 24-4783	BA104	$28.90	BA3	$16.70
PA-32-300 SN76-40001&up	BA104	$28.90	BA3	$16.70
PA-32R-300,PA-32RT-300,PA-32R-301	BA104	$28.90	BA3	$16.70
PA-34-200T, 220T	BA104	$28.90	BA3	$16.70
PA-28R-201,PA-28RT-201,PA-28R-180, PA-28R-200	BA105	$34.95	BA10	$18.80
PA-28-236 S/N 28-7911283 & Up	BA2910	$60.75	BA2905	$14.95
PA-30-160	BA105	$34.95	BA10	$18.80
PA-31P, 31P-350	N/A	N/A	BA3305	$24.50
PA-38	BA4106	$55.75	BA4108	$7.95
PA-28-151,161	N/A	N/A	BA16	$9.50
PA-28-236 SN 28-7911283 & up	BA2910	$60.75	BA2905	$14.95
PA30, with Ray Jay Turbo	BA121	$39.95	BA27	$15.75
PA31, PA-31-300, -310, -325,-350	BA100	$99.80	BA7	$18.65
PA-31P, 31P-350	N/A	N/A	BA3305	$24.50
PA-32-300 w/IO-540-K1A5	BA115	$39.60	BA15	$17.50
PA-32RT-300T	BA100	$99.80	BA7	$18.65
PA-32-301T, 32R-301T	BA100	$99.80	BA7	$18.65
PA-34-200w/LYCIO360C01ES or LIO-360-C1E6	BA105	$34.95	BA10	$18.80
PA-44-180T	N/A	N/A	BA3505	$18.50
Robinson: R22	BA110	$30.50	BA23	$17.90
Stearman: All Series 75	BA118	$79.75	BA18	$31.50
Stinson: 108, 108-1, -2 ,-3	BA9110	$38.95	BA9105	$11.50
Swift: GC-1A, GC-1B	BA4106	$55.75	BA4108	$7.95
Taylorcraft	BA4106	$55.75	BA4108	$7.95
Varga: 2150A	BA4106	$55.75	BA4108	$7.95

EP

DONALDSON AIR FILTERS

Donaldson has been the OEM source for Cessna, Piper, Beechcraft, and Maule & Mooney since the 1960's. They currently supply Cessna all of their SE Piston aircraft filters, Beech Bonanza & Baron filters, Mooney & Maul with their filters. For Piper they currently supply all of their Turbo charge aircraft with filters. Aircraft Spruce is a factory authorized distributor for Donaldson filters.

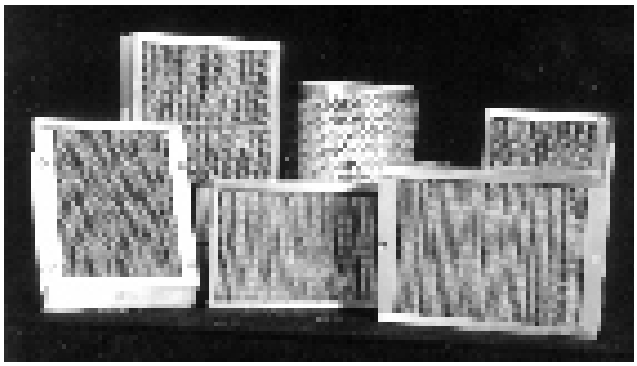
FEATURES: • High Performance Engine Intake Filters • Synthetic media: offers improved air flow and better dust capturing efficiency • Engineered to last 500 Flight Hours • Washable filter element, use compressed air/warm soapy water • Clean installation: dry media, no sticky/messy oil to trap dirt • OEM choice for GA aircraft for over 30 years • Meets All Flammability requirements per FAR 23.853 • Solid Construction with no removable parts-no loose screens, elements or screws • Exceptional wet weather performance, no oil to wash away in wet weather • Moisture passes thru the filter, doesn't build up an oiled surfaces (no oil present) • All filters starting with "P" feature our Premium Synthetic filter media • No Airworthiness Directives against Synthetic media filters • Cost efficient over the life of the filter, 3 years, 500 FH 5 cleanings

Only filters with * after part number have cellulous media

Donaldson	OEM	Description	PN	Price
P107150	C-294510-0201, 13203	C-150/152 & Various others Engine Intake air filter	08-06027	$91.50
P107172	C-294510-0301, 13219	C-170/172 Engine Intake air filter	08-06024	$106.95
P15-1936	PS600073 / 561-020	Piper PA-32R *(Engine Intake air filter)	08-06029	$71.85
P107336	C-294510-0401	C-172XP/ 337 Engine Intake air filter	08-06038	$91.50
AM102035FP	C-294510-0501	Engine Intake air filter	08-06052	$112.95
P106150	0750038-4	C-180/182/185 Engine Intake air filter	08-06023	$116.95
P131367	C-294510-0901	TR182/182R Engine Intake air filter	08-06042	$147.95
AM102135FP	1250704-3	C-206/207/210 Engine Intake air filter	08-06033	$119.50
AM102235FP	1250704-4	C-210 Engine Intake air filter	08-06046	$129.95
P107210	1250846-1	T206/T207/T210 Engine Intake air filter	08-06047	$89.50
P131364	C-294510-0801	T210N/P Engine Intake air filter	08-06049	$131.95
P108421	99100181	T310/320/335/401/402/421 Engine Intake air filter	08-06056	$74.50
P109337	C-294510-0701	337/T337 Engine Intake air filter	08-06051	$162.95
AM102035FP	C-294510-0501	Engine Intake air filter	08-06052	$112.95
P148670	C-294510-0902	T303 Engine Intake air filter	08-06053	$138.95
AM102735EA	9910018-2	310/401/402 Engine Intake air filter	08-06054	$88.50
AM102935EA	9910200-1	310R Engine Intake air filter	08-06055	$109.95
P128156	9913001-1	340/414 Engine Intake air filter	08-06028	$87.50
P128157	9910141-1	404 Engine Intake air filter	08-06057	$96.75
EBG03-0001	C-294501-0101	Instrument Air Filter Assembly, Cover & Filter element	08-06059	$111.95
P105290	C-294501-0203	Replaceable instrument Instrument air filter only, part of EBG03-0002 assy	08-06060	$35.50
AM103435IA	C-294501-0301	Instrument Air Filter	08-06035	$59.95
AM103535IA	C-294501-0302	Instrument Air Filter	08-06036	$53.25
P122322	169-380064-3	B19 Engine Intake air filter	08-06061	$91.95
P130374	45-91210, 13917	Debonair & Early Bonanza Engine Intake air filter	08-06062	$129.95
P105304	35-38005-5, -1	Bonanza Engine Intake air filter	08-06032	$96.50
P137627	35-380035-7	Bonanza Engine Intake air filter	08-06026	$88.50
P136680	105-389000-3	B76 Engine Intake air filter	08-06063	$116.95
P133881	P13-3881	B77 Engine Intake air filter	08-06064	$117.95
P128219	P12-8219, 122601, AM101020FP	95-55, A55, B55 Baron Engine Intake air filter	08-06065	$71.95
P127996	P12-7996, 121128-2, AM101120FP	C55, D55, E55 & 58 Baron Engine Intake air filter	08-06066	$79.75
P12-8167	96-389005-1	E55 & 58 Baron Engine Intake air filter	08-06025	$61.75
P108700	50-389070-15	Duke Engine Intake air filter	08-06067	$93.95
P124439	50-389070-23	58P Baron Engine Intake air filter	08-06069	$58.50
P105798	50-389070-11	A65, 70, B80 Engine Intake air filter	08-06070	$72.50
EBG03-0003	205538-089	Instrument air filter	08-06072	$101.95
EBG03-0018	101-380039-1	King Air Instrument air filter	08-06034	$45.75
P136602	560-584	PA-28-236 Engine Intake air filter	08-06074	$136.95
P138683	560-904	PA-28-236 Engine Intake air filter	08-06075	$118.95
P106590	560-747	PA-31 Engine Intake air filter	08-06076	$73.50
	460-609	PA-31P Engine Intake air filter	08-06077	$136.95
P136739	560-947	PA-32 Engine Intake air filter	08-06078	$203.95
P138580	86881-2, 560-953	PA-44T Engine Intake air filter	08-06080	$124.75
AM108365FP	P13-6287	M20K Engine Intake air filter	08-06081	$149.95
204418-156	77852	Lycoming Engine Spin on oil Filter adapter	08-06037	$161.95
P11-0172	C-294510-0601	Engine Intake air filter	08-06228	$213.95
P198281	P198281, CA3559	172R & 172S Engine Intake Filter	08-07051	$108.50
P198290	P198290, CA3717	182S Engine Intake Filter	08-07052	$108.95
P197268	P197268	T206H Engine Intake Filter	08-07053	$169.95
P13-0234	125997-010, BA6210	M20J Engine Intake Filter	08-07054	$99.85
ED04011	600417-501	M20K (s/n 25-1000 and up) engine intake Filter	08-07055	$92.50
ED04028	600417-503	M20M/R/S Engine Intake Filter	08-07056	$92.75
P10-5225	C-294501-0103	Various Instrument Air Filter	08-07057	$30.75
P617058	460-632	Oval Piper Filter PA28/PA34	08-07276	$71.95
P617053	460-630	Round Piper Filter PA28/PA44	08-07277	$72.85
P617774	460-629	Round Piper Filter PA23/32	08-07278	$59.95

VISIT OUR WEBSITE FOR COMPLETE AIRCRAFT APPLICATION INFORMATION.

AIR FILTERS



BEECH AIR FILTERS

Item	Our P/N	Beech Equivalent P/N	Aircraft Type	Price
1	08-00017	35-534470-19 P13-0374	Beech 33, 35	$136.75
2	08-00018	P10-5304 35-534470-19	Beech 33, 35, 36	$129.90
3	08-00019	P12-7996 (121128-2) TE946 thru TE1078 TH1 thru TH740	Beech 58	$109.75
4	08-00020	P12-8219 (122601)	Beech 55	$99.75
5	08-00021	P10-8700	Duke B60	$108.75
5A	08-00022	P12-4439 (50-389070-23)	P Baron (58P)	$109.75
6	08-00023	P12-8167 (96-389005-1) TE1079 & after TE741 & after	Beech E55 & 58 Late Model	$125.75
7	08-00024	169-380035-7		$110.80

CESSNA AIR FILTERS

Item	Our P/N	Cessna Equivalent P/N	Aircraft Type	Price
2	08-00000	C294510-0201	Cessna 150	$104.85
3	08-00001	C294510-0301	Cessna 172	$105.75
4	08-00002	C294510-0401	Cessna 336, 337A-H	$123.75
4A	08-00003	C294510-0501	Cessna 172 RG Cutlass	$116.75
5	08-00004	C294510-0601	Cessna 177	$134.75
6	08-00005	C294510-0801	Cessna P210N, R	$138.95
7	08-00006	C294510-0901	Cessna 182RG	$134.75
8	08-00007	0750038-4	Cessna 182	$145.90
9	08-00008	1250704-3 (Port)	P206,A,B,C,D,E	$214.95
9A	08-00009	1250704-4 (Stb)	To S/N 64535 w/o Air	$218.95
10	08-00010	1250846-1	T206,A,B,C,D,E	$164.80
11	08-00011	C294510-0501	Cessna 337	$122.95
12	08-00012	9910018-1	Cessna T310R	$123.75
13	08-00013	9910018-2	310N,P,Q,T310P,T310Q	$121.85
14	08-00014	9910200-1	Cessna 310R	$134.75
15	08-00015	9910141-1	Cessna 404	$147.75
16	08-00016	9913001-1 (108)	Cessna 340,340A Late Model	$139.85

PLEATED PAPER AIR FILTERS

These pleated paper aircraft induction air filters are manufactured in South Africa and are fully approved by the South African Dept. of Transport, Division of Civil Aviation. Strict quality control standards are enforced at all stages of manufacture. The filters feature aluminum frames and cured EA131 pleated elements with 96% micron rating. Rubber gaskets are waterproof, oil solvent, and chemical resistant. Mesh overlays are of stainless steel for enhanced strength, durability, and appearance. Not FAA approved at this time.

MOONEY AIR FILTERS

Item	Our P/N	Mooney Equivalent P/N	Aircraft Type	Price
1	08-00025	125997-010	M20J	$129.75
2	08-00026	125685-004	M20K	$145.75

PIPER AIR FILTERS

Item	Our P/N	Piper Equivalent P/N	Aircraft Type	Price
1	08-00028	560-772	Tomahawk (PA38)	$109.75
2	08-00029	124997-005	Navajo/Chieftain (PA31)	$116.75
3	08-00030	13681-02	Tri-Pacer (PA22)	$117.75
4	08-00031	560-947	Saratoga (PA32-301T)	$195.75
5	08-00032	125196	Piper Turbo Aztec (PA23)	$146.75
6	08-00033	CA161	PA28 & 32 Series (PA 36 Pawnee) (PA 34 Seneca)	$121.85
7	08-00034	CA162	PA32 & PA23	$122.75
8	08-00035	35477-00	PA28-161	$105.75
9	08-00036	CA122	Super Cub (PA18)	$106.75

AIR-MAZE AIR FILTERS

Filter for Continental for A-65 thru C-125*.
P/N A40599 ..... $79.75
Filter for Lycoming O-235, O-290, some O-320 (advise aircraft application)
P/N A40599 ..... $79.75
Aeronca 7AC, 11AC
P/N 2-849 ..... $99.85
Carb. Intake Stud ..... P/N 24306 ..... $38.95
TCM Carb. Intake Pin ..... P/N 24308 ..... $19.90
*FOR NEW INSTALLATION - P/N 24306 & P/N 24308 ARE REQUIRED

NAPA AIR FILTER

Air Filter for 7GCA, 7GCB, 7GC, 7HC Models. Experimental Only. Direct replacement of FRAM made by NAPA.
P/N 05-06388 ..... $23.75

EP

K&N AIR FILTERS

K&N AIR FILTERS

Our K&N Filters are the industry standard in excellence. All filters are constructed with ultra-strong molded pliable rubber flanges which absorb vibration and provide secure attachment. These flanges can be stretched up to 1/8" (3mm) to fit in-between sizes. K&N Universal air filters are available in round, tapered, and oval designs, to fit just about any application. Use the dimensioned sketch and the selection chart to find the filter best suited to your application.

Part No.	K&N Part No.	Application	Throat	Length	Dia.	Style	Price
08-01053	FRV2440	Rotax®/Bing 36mm	2"	2"	5-3/8"	Round Straight	$53.75
08-01273	RU0600	Mikuni 32mm	2-1/4"	4"	3-1/2"	Round Straight	$34.50
08-04977	RU0800	Mikuni 34mm	2-1/2"	4"	3-1/2"	Round Straight	$38.50
08-04980	FRC0930	Kawasaki/Mikuni 32mm	2-3/4"	3"	5"	Round Straight	$103.45
08-04981	FRC1250	Mikuni 36mm	2-1/4"	4"	2"	Tapered	$36.99
08-04978	RU2690	Rotax®/Bing 32mm	1-3/4"	2-1/2"	2"	Tapered	$35.85
08-01274	RC1350	Rotax®/Bing 36mm	2-1/16"	4"	3"	Round Straight	$45.90
08-01275	RC1200	Rotax®/Bing 36mm	2-1/16"	4"	2"	Tapered	$42.95
08-04979	RC2820	Rotax® 532/582 Dual Carbs	2-1/16"	3"	8-1/2"	Dual Oval	$52.85
08-04976	RC2720	Rotax® 503 Dual Carbs	2-1/16"	3"	8-1/2"	Dual Oval	$53.85
08-04977	RU0800	Mikuni 34mm	2-7/16"	4"	3-1/2"	Straight	$38.50
08-01278	RU2790	Rotax® 503/532 Aerobatic carb.	3-1/2"	4-1/2"	3-1/2"	Tapered	$33.85
08-01279	RA045V	Rotax® 912 Offset	2"	2"	5-7/8"	Round offset	$52.75
08-01280	RU0810	Rotax® 814 Rd. Center	2-7/16"	5"	3-1/2"	Round Centered	$38.70
08-04983	FRC1890	Rotax®/Bing 36mm	2-1/16"	3"	3"	Round Straight	$39.95
08-04984	FRC1150	Rotax®/Bing 36mm	2-1/16"	3"	3-1/2"	Round Straight	$39.85

K&N AIR FILTERS

Rubber end cap instead of chrome makes this filter less likely to create damage in the event of a prop strike. Also includes rubber boss for safety wire attachment.

K&N Air Filter # RC-2314.....P/N 08-07291.... $142.95

See website for engine applications.

K&N ROUND AIR FILTER ELEMENTS

Description	Part No.	Price
E-3260 Filter Element	08-12162	$38.75
E-3450 Filter Element	08-12163	$37.50

K&N SQUARE AIR FILTER ELEMENTS

Description	Part No.	Price
E-33-2060 Filter Element	08-12164	$39.95

K&N PRECHARGER FILTER WRAPS

The K&N PreCharger® is a specially designed filter wrap made to extend the service interval of your K&N Filter when used in very dusty conditions. They are made from durable polyester material containing uniform micron openings. The PreCharger will stop small dirt particles; yet add little restriction to the airflow of the filter. The PreCharger is designed to be run dry and can be cleaned with K&N Filter Cleaner. The PreCharger is custom made to fit each application. Double stitched elastic openings assure that the PreCharger will stay in place. Available in round straight and round tapered.

22-8016PK Precharger - Straight.....P/N 15-07233.....$16.50

RC-1200PK Precharger - Tapered.....P/N 15-05090.....$15.50

VARI-EZE / LONG EZ AIR INTAKE FILTER

NAPA #2904 air intake filter (equivalent to Purolator #AFP-177 & AC #44-8C)

P/N 2904.....$13.50

OVAL AIR FILTER FOR DUAL BING 54 CARBURETOR

Oil impregnated, pleated, washable, polyester air filter. Can be washed and re-oiled for years. Traps dirt and other foreign particles to keep engine clean.....P/N 15-08370.....$50.00

Filter for Rotax 503 .....P/N 15-08343.....$50.00

K&N FILTER CHARGER OIL

K&N Air Filter Oil is the only oil specially formulated to work in combination with the cotton fabric in K&N Filtercharger elements, providing a superior air filtration system. When used as directed, it quickly penetrates the filter pleats, where it remains suspended in the cotton fabric. Saturation is maintained until the element is cleaned with K&N Air Filter Cleaner.

Description	Part No.	Price
1 oz. Pillow Pack	15-05453	$1.45
6.5 oz. Spray Can	08-01052	$5.95
8 oz. Squeeze Bottle	08-01089	$5.35
12 oz. Spray Can	15-08139	$8.50
One Gallon Refill	15-05454	$29.75

K&N POWER KLEEN

K&N Air Filter Cleaner is the only cleaner recommended to clean K&N Air Filter elements. Dissolves dirt build up and old filter oil and can be washed away with water. It is environmentally friendly and safe on paint, chrome, cast aluminum, plastic, rubber and vinyl when used as directed (do not use on polished or anodized aluminum). Complete instructions on bottle.

12 oz. Spray .....P/N 05-01944.....$7.50

1 Gallon Refill.....P/N 15-05451.....$28.65

5 Gallon Pail.....P/N 08-07461.....$89.75

K&N AIR FILTER SEALING GREASE

K&N Sealing Grease provides an airtight fit around sealing surfaces on all types of air filter elements. It resists heat and will not melt or run off. K&N sealing grease is not to be used on clamp-on filter elements. 6 oz. Squeeze Tube. 8 oz. squeeze tube - black.....P/N 08-01093.....$10.50

K&N RECHARGER KIT

K&N Recharger® kits contain K&N air filter cleaner and air filter oil for recharging any K&N Filtercharger® Air Filter. Restores air flow efficiency so your K&N air filter performs like new! P/N 08-00722 ..... $12.95

K&N AIR FILTER CLEANER & DEGREASER

This is the only cleaner formulated to clean K&N Filtercharger elements. The use of any other cleaning solution will void the filter's warranty, and quite possibly could damage the cotton material. Biodegradable and safe on paint, chrome, cast aluminum, plastic, rubber, and vinyl when used as directed. Complete instructions on the bottle.

NOTE: Do not use on polished or anodized aluminum.

12-fluid oz. squirt bottle .....P/N F99-0606.....$7.50

GPL WASHABLE RE-USEABLE AIR FILTER FOR BING 54

Oil Impregnated, Pleated, Washable, Polyester Air Filter. Can be washed and re-oiled for years. Fits Bing 54 Carburetor. GPL Part # 3920 For Bing 54. 3.5" D x 4" L x 2 1/16" ID

P/N 08-07665.....$26.00

GPL WASHABLE RE-USEABLE AIR FILTER FOR MIKUNI 34-36MM

Oil Impregnated, Pleated, Washable, Polyester Air Filter. Can be washed and re-oiled for years. Traps dirt and other foreign particles to keep engine clean. GPL Part # 3921 For Mikuni 34—36mm. 3.5" X 4" X 2 7/16". P/N 08-07631.....$26.00

EP

JANITROL HEATERS BY HARTZELL

Our Janitrol heaters, rebuilt right at the factory by Janitrol Heater Products, a division of Hartzell feature new CermaKote combustion tubes and a more efficient, lightweight permanent magnet blower motor. These heaters are rebuilt to factory new tolerances and upgraded to the latest model configuration with a new serial number. These heaters are not affected by FAA AD Note 96-20-07. Three year, 1000 hour limited warranty, 1500 hour TBO.

CALL FOR PRICING!

JANITROL HEATER CERMAKOTE COMBUSTION TUBES BY HARTZELL

Janitrol Heater Products, division of Hartzell produces extended life "CermaKote" combustion tubes for individual sale. The "CermaKote" combustion tubes incorporate a special process to coat the areas susceptible to flame erosion. The FAA/TSO approved OEM combustion tube is engineered to provide years of safe operation through improved materials designed to better withstand the high temperatures and corrosive environment inside your heater. This product improvement will greatly decrease your routine heater maintenance cost and give you the added assurance that your heater is being maintained with the highest quality parts on the market today!

CALL FOR PRICING!

TOPCAP ENGINE PROTECTOR

Install TopCap in place of a removed cylinder to protect th engine from dirt, debris, and stray parts. Made from fuel and solvent resistant polymer, TopCap allows for full crankshaft rotation. One size fits Lycoming wide deck 320, 360, 540, 720 and Continental 470, 520, and 550.

P/N 08-00373 ..... $23.75 /pr.

ENGINE SAVER

Every aircraft owner knows that his engine is subject to moisture build up and internal rust formation when not flown regularly. Oil companies spend millions developing special additives to minimize rust. Now there is a better way to fight this rust! The Engine saver produces a continuous supply of very low humidity air that is introduced into the engine throught the breather. Low humidity air prevents water formation in the engine. The slight pressure built up keeps the moist outside air from entering, allowing the dry air to flow past the piston rings into the upper cylinder area protecting it as well. The Engine Saver is 110vac powered, requires no installation or FAA approval, and works with all piston engines. Pilots are flying less and the Engine Saver will save them money by reducing maintenance costs. P/N 08-00724..... $347.00

AIM-A-SQUIRT

Aim-A-Squirt was developed out of the need to apply lubricants, corrosion inhibitors and solvents in those hard to reach areas with out getting the products all over everything. Aim-A-Squirt has been tested with hundreds of different products which have had no affect on the special plastics the straw is made of. The straw is flexible enough that it will not kink when it is twisted in a small circle.

P/N 09-02325 ..... $6.70

TEMPEST AA1000 ENGINE PRESERVATION SYSTEM

Protect Your Engine With the Tempest EPS.

All engines accumulate moisture when they are not run everyday. Moisture will oxidize and create rust in the engine causing potential damage as well as faulty oil analysis.

AA1000 EPS pumps dry air into the engine oil filler cap and removes the moisture already in the engine. Continuous operation will prevent any additional moisture from accumulating. Removal of the moisture preserves and protects your engine.

110V ..... P/N 08-07192 ..... $188.75
220V ..... P/N 08-07383 ..... $241.95

ACCESSORIES

Replacement Desiccant for AA1000 EPS (1 lb)
P/N 07-03400 ..... $18.90

Replacement Desiccant for AA1000 EPS (1/4 lb)
P/N 07-00731 ..... $4.73

BENDIX MAGNETO GREASE

#10-27165 - Factory recommended lubricant for bearings in Bendix magnetos.
1 Lb. Can ..... P/N 10-27165 ..... $63.85

#10-391200 - For use on distributor block bushing. Provides proper shaft lubrication.
8 oz. can ..... P/N 10-391200 ..... $61.75
1 oz. tube ..... P/N 07-02500 ..... $3.95

#10-86527 - High temperature breaker/cam lubricant
P/N 10-86527 ..... $44.50

ANDEROL ROYCO 782 HYDRAULIC FLUID

Synthetic fire resistant "Super Clean" hydraulic fluid ROYCO 782 is a red - colored synthetic hydraulic fluid developed to meet the severe duty demands of today's military and industrial equipment. Modern additive technology is employed for oxidative stability, corrosion inhibition, and anti-wear protection. ROYCO 782 is compatible with petroleum based fluids and all components used in mineral oil type hydraulic systems. Mil-Spec: MIL-PRF-83282.

Quart ..... P/N 08-07539-1 ..... $11.95
Case (24 Quarts) ..... P/N 08-07539 ..... $267.95

MOLYKOTE 33 BEARING GREASE

Dow Corning 33 Extreme Low Temperature Bearing Grease is a thickened silicone oil; resistant to oxidation, moisture and corrosive atmospheres, inert, good shear stability and wide service temperature range.

Specifications:
- 5.3oz (150g) Tube.
- Base Chemistry: Silicone
- Flash Point: >101.1°C
- Service Temperature: -73 to 204°C
- Specific Gravity: 1.1 @ 25°C
- Viscosity Cp: 100 @ 25 °C

P/N 06-02342 ..... $28.50

TANIS 4 / 6 CYLINDER ENGINE PRESERVATION KIT

Engine Preservation Kit: recommended by engine manufacturers for storage of an engine longer than 90 days. Everything you need for long-term protection of your Lycoming & Continental engine.

4 Cylinder ..... P/N 08-07085 ..... $180.00
6 Cylinder ..... P/N 08-07086 ..... $270.00

EP

REAL GASKET PUSHROD TUBE SEALS

These seals from Real Gasket Tennessee provide 37% more sealing area at the point of contact with the pushrod tube, and vector spring pressure by its beveled top and companion washer. FAA Approved for the Continental engines shown below.

Part No.	Application	Kit Price
RG-360PR	IO/TIO-360 complete engine*	$76.85
RG-360PR-1	IO/TIO-360 single cylinder**	$11.85
RG-520PR	0/IO-470, IO-520, IO-550A,B,C***	$119.85
RG-520PR-1	As above except six cylinder	$20.65
RG-550GPR	IO-550-G complete engine	$69.75

*6 cylinder kit **1 cylinder kit ***3 cylinder kit

REAL GASKET PUSHROD TUBE CONVERSION KITS FOR CONTINENTALS

These kits from Real Gasket Tennessee replace problematic pushrod tubes of continental engine models: A-65, A-75, C-75/85/90/125/145, 0-200, 0-300 and GO-300. The installation does not require loosing or removal of the cylinder and converts it to an "independently serviceable" spring loaded pushrod tube system, similar to IO-470, IO-520, and IO-550 continental engines. It also allows access and service to the lifters. The kit is designed for easy installation and uses real gasket's FAA-PMA pushrod tube seals as used in the continental IO-470, IO-520 and IO-550 engines. For certified aircraft engines, form 337 is required.

1-cylinder kit .....P/N 08-00802.....$76.75
4-cylinder kit .....P/N 08-04444 ..... $278.95
6-cylinder kit .....P/N 08-44444 ..... $418.00

REAL GASKET FRANKLIN ENG. PARTS

RG-17794-S/12 .....Pushrod Tube Seal.....P/N 08-00779.....$4.35
RG-17864-S/12 .....Pushrod Tube Seal.....P/N 08-00780..... $52.25
RG-10366.....Oil Pan Gasket .....P/N 08-00781 ..... $31.75
RG-17794-S/12 .....Valve Cover Gasket.....P/N 08-00782.....$9.90
RG-17794-S/12 .....Crankcase Cover Gasket.....P/N 08-00783..... $33.55
FAA Approved

LOCTITE® HIGH TEMPERATURE GASKET SEALANT

LOCTITE® High Temperature Gasket Sealant is a slow drying viscous paste. It remains pliable and flexible and is designed to seal flanges, threaded connections and fasteners at temperatures from -45° C to +315 °C. It can be effectively applied to cork, paper, plastic and metal surfaces. Typical applications include sealing gaskets, flanges and threaded connections, aircraft heating systems, manifolds, pipe fittings, steam lines, gear boxes and cover plates.

P/N 09-28425..... $19.90

PERMATEX FORM-A-GASKET NO. 1

Seals and repairs a wide range of gaskets. Fills in uneven flanges surfaces. Seals pipe fittings, air ducts, boilers, plumbing connections and threaded assemblies. Dries fast, sets hard for sealing permanent or rigid assemblies. Easy to apply. Improves gasket sealing power, adds reliability to rigid or permanent assemblies. Eliminates delays.

3 oz., Tube, #1B.....P/N 09-28415..... $5.90
11 oz, Tube, #1C.....P/N 09-28430.....$11.95

PERMATEX FORM-A-GASKET NO. 2

A non-hardening, heavy-bodied, pliable sealant for semi-permanent assemblies. Use on threaded assemblies, over plates and hose connections, metal-to-metal applications. Temperature range -65° to 400° F., pressures up to 5000 PSI. Apply with putty knife or stiff bristle brush. Conforms to MIL-S-45180B Type II.

3 Oz. Tube #2B.....P/N 09-28420..... $4.85
11Oz. Tube #2C.....P/N 09-28400.....$13.60

AVIATION FORM-A-GASKET NO. 3

A non-hardening sealant. Recommended for heating hose connections, close fitting metal parts and threaded connections. Resists water, gasoline, acids and alkalies. Temperature range -65° to 400°F., pressures to 5000 PSI. Conforms to MIL-S-45180B, Type III.

4 Oz. Can #3H.....P/N 09-28500..... $6.95
1 Pint Can #3D .....P/N 09-28600.....$13.50

GUNK SUPER CONCENTRATE DEGREASER

A concentrated self-emulsifying degreasing solvent for engine and parts. Dilute one part concentrate with nine parts of kerosine or light Diesel fuel oil for very effective cleaning. Spray or brush on. Does not harm electrical system, strip paint or cause rust. Water rinse.

Attention: Volatile Organic Compounds (VOCs) Government Regulations: Product cannot be purchased, sold or used in the states listed below. CA, CT, DC, DE, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA,

SC-2A, Qt. (2 Lbs.) ..... P/N 09-29400.....$8.95
SC-3, Gal. (8 Lbs.) ..... P/N 09-29500..... $34.95
SC-5, 5 Gal. Pail (41Lbs.) ..... P/N 09-29600.....$141.95

GUNK "ENGINE BRITE" ENGINE CLEANER

Ready-to-use engine cleaner in convenient aerosol 15oz. can. Note: Due to environmental regulations, 09-29700 cannot be used in California. For California customers see Alternate Item.

P/N 09-29700.....$5.50
For CA only ..... P/N 09-03767.....$5.75

GUNK HYDRO-SEAL

Two-layer room temperature carbon digester and paint stripper. No flash point. Safe on all metals. Simply soak and pressure rinse or solvent rinse. 5 gal. pail contains parts soaking basket.

HS-3, 1 Gal. Can (11 Lbs.) ..... P/N 09-29900..... $96.75
HS-5K, 5 Gal. Pail w/ parts basket (Wt. 56 lbs., truck shipment req'd) ..... P/N 09-30000.....$183.75
Factory-direct shipment on 50 gal. drums of Gunk and Hydro-seal. F.O.B. Charlotte, N.C.

TITESEAL

Prevents corrosion and seizing of metal parts. Assures leakproof, pressure tight connections. Unaffected by water, oil, gasoline.

Light Wt., #T20-66, 1 Lb. Can .....P/N T20-66.....$18.50
Medium Wt., #T25-66, 1 Lb. Can.....P/N T25-66.....$19.95

POB #4 PERFECT SEAL SEALANT

• Used worldwide in the automotive, aircraft and marine industries • Liquid sealant designed to meet rigid requirements of OEM specifications. • Non-hardening and resists extreme temperatures. • Seals all gaskets and threaded connections. • Prevents corrosion of bolts, studs and fitting threads. • Resistant to gasoline, oils, steam, salt-water, antifreeze and propane. • Withstands temperatures from -50 F to 400 F.

4oz. .....P/N 08-07218 .....$6.90
16oz.....P/N 08-07217 ..... $14.50

MARVEL MYSTERY OIL

Standard for break-in on new or overhauled engines and for carbon removal from cylinder heads, piston rings, valves, etc. Mix with regular oil for perfect engine operation to -20°F. Lubricates tight nuts, control hinges and landing gear. Dust repellent.

4 oz. ..... P/N 09-27515 ..... $3.95
Qt. ..... P/N 09-27500 ..... $9.85
Pint..... P/N 09-27505 ..... $8.50
Gal. ..... P/N 09-27600 .....$39.95

MOUSE MILK OIL

For speedy help in removal of rusted or frozen studs, nut and bolts; frees up cables, slides and linkage; unequalled wherever a lubricant and penetrant are required. Lasting lubricating qualities.

8 Oz .....P/N 09-39608.....$5.75
32 Oz.....P/N 09-39632.....$16.90

EP

ENGINE PREHEATERS

RED DRAGON ENGINE PREHEATERS

Model	Description	Part No.	Price
MH300	Originally developed for Alaskan Bush Pilots, RED DRAGON® Engine Preheaters have been favored by pilots for over 30 years. Not just for aircraft, but for any engine subjected to low temperatures – perfect for construction, farm and oil field equipment. All preheaters are safe, easy to use and burn clean efficient propane. Available in 12 volt D.C. or 115 volt A.C. models, Red Dragon Preheaters are the best around. Each Preheater is tested before leaving the factory. • Fully Assembled • Compact & Lightweight • Full Safety Features • Push Button Ignition • Fueled by Clean, Efficient Propane • Sturdy Steel Construction • Made in the U.S.A.	08-04300	$359.00
MH310	Use these Preheaters anywhere electrical outlets are available. Perfect for in the hangar, garage or machine shop. These units include full safety features and push button ignition. Safety features include safety shutoff valve, adjustable regulator and excess flow safety P.O.L. tank fitting. Each unit includes a 5' power cord and a 5' fuel hose to connect to any refillable LP-Gas cylinder. For added safety, an optional high limit heat sensor located near the air outlet will shut off fuel to the burner if the preheater surface temperature exceeds safe levels. A soft carrying case is also available for easy transport.	08-04305	$348.00
H175	A complete 12 volt D.C. preheater package with almost everything necessary to put your Red Dragon® into operation plus a sturdy dolly for easy transportation. Comes equipped with either the LT 2-12 MH 300 or the LT 2-12 MH 200 preheater. These units include safety features and push button ignition. Safety features include safety shutoff valve, adjustable regulator and excess flow safety P.O.L. tank fitting. Each unit includes a 10' power cord with alligator clips to quickly attach to your battery source and a 5' fuel hose to connect to any refillable LP-Gas cylinder. For added safety the LT 2-12 MH 300 has an optional high limit heat sensor located near the air outlet and will shut off fuel to the burner if the preheater surface temperature exceeds safe levels. These kits also come complete with a sturdy H-125 Cylinder Dolly w/battery bracket and battery box, 20 pound cylinder and 6' of heavy duty ducting. Just add fuel to the cylinder and a battery and your ready to go!	08-04315	$487.00
	RED DRAGON ACCESSORIES		
--	Heat Ducting - 12' long x 4" diameter; Heavy-Duty Flexible Ducting.	08-04310	$89.75
--	6'Lx4" Dia. Heavy-Duty Flexible Ducting.	08-04325	$49.75
--	Carrying Case - Strong Plastic Case with lock, for model MH300. (20.25"x 9.5"x 9.5")	08-04320	$46.90
--	12V Cigarette Lighter Adapter Plug	08-04330	$16.95
--	Propane Quick Disconnect set - For Rapid Connect & Disconnect of Fuel Line from Propane Bottle w/o Tools (even under pressure)	08-04340	$19.95
--	Propane Bottle - Std. Refillable Bottle (5 Gal. Cap. or 20 Lbs.) Supplies Min. 2 Hours of Heating. (Empty)	08-04351	$55.00
--	Soft Carring Case - This soft carring case is for 115V preheaters only.	08-01218	$21.95
--	Red Dragon Disposable Cylinder Adapter - Has a shut off valve and is disposable usually for 1 preheat.	08-01295	$26.85

E-Z HEAT AIRCRAFT ENGINE PREHEATERS

Preheating engines for winter operations is at best a miserable chore and at worst can be a disaster for the plane, the pilot & flight operations - until the development of the E-Z Heat Aircraft Engine Heater. The E-Z Heat was designed to provide very efficient engine heating for virtually all propeller driven aircraft. The heaters consist of a flexible synthetic pad that easily conforms to the contours of the oil pan. This pad will heat 12 qts of oil from -40° to +60°F in an hour while using approximately 300 watts of electricity. The heater is 1/32" thick. which enables the immediate heat transfer from heater to engine.

The heaters are thermostatically controlled, so leaving them plugged in overnight means the plane will be ready to go in the morning. Normally, complete pre-heating takes only 3-5 hours for the entire engine to be nice and warm. With this new lighted plug, the owner simply needs to look out the window or peek in the hangar to see if they remembered to plug in their E-Z Heat engine pre-heater. Molded into the male plug end is a newly designed light emitting diode (LED). This LED allows the operator to visually recognize if there is electrical power to the preheat system even from a distance. FAA approved for certificated aircraft.

End your cold weather starting problems and reduce premature engine wear with the installation of our proven

Specifications:

Power Consumption: 300 watts or less / Thermostatically Controlled

Power Requirement: 110/120 volts (models 441 and 540 are available in 220 volts).

Installation: The adhesive is already on the pad. All you need to do is peel and stick it on! (excluding model 470)

Preheat Time: 3 to 5 hours on cold soaked engine, although, since unit is thermostatically controlled, it may be left on overnight, or all the time. Cowl covers and prop covers are recommended for extreme cold weather, they also reduce preheat time.

Lite Brite Plug: With this new lighted plug, the owner simply has to look out the window or peek in the hangar to see if they remembered to plug in their E-Z Heat engine pre-heater! (excluding model 470)

Weight: Only 9 ounces!

Heat Transfer: Convection/conduction, the safest way of heat transfer available. No flames or glowing elements are potential fire hazards.

P/N	Application	Heater #	Price
07-00756	Cont. A-65 to o-200 (round)	260	$149.95
07-05315	Cont. A-65 to 0-200 (rectangle)	270	$159.95
07-05100	Cont. C-125 to 0-300, E-165 to E-225, IO-360 to TI0-360 Lyc. 0-235, 0-290, 0-320*	440	$149.95
07-05200	Cont. 0-470, I0-470, 0-520, I0-520 Lyc. 0-320*, 0-360, I0-360, 0-540, I0-540C, D, T10-540C	441	$149.95
07-01320	Cont. O-470, IO-470, O-520, IO-520	470	$149.95
07-05210	Lyc. IO-360A & C Series	442	$149.95
07-05345	Cont. 0-470, I0-470, 0-520, I0-520 I0-550 Lyc. 0-540, TIO-540 (except C), I0-720	411, 440 or 540	$177.95
07-05345-2		220V	$177.95
07-05200-2	Model 441 - 220Volt	441-2	$184.75

* Except H and Rear Carbs

E-Z HEAT 912 ENGINE PREHEATER

The E-Z Heat Engine Preheater system fits the Rotax motors and many other light sport aircraft on the market today. The system consists of two heater pads connected with a common "Light Bright" power cord. Installation is easy by peeling and sticking a pad on both the sump and on the oil tank to assure the engine gets the proper amount of heat. P/N 07-01860 ..... $149.95

EP

ENGINE PREHEATERS

DESIGN LOGIC ENGINE PREHEATERS

Constructed of solid aluminum, Design Logic Inc. (formerly Symtec Inc.) preheaters are known for their dependability, performance, and overall value since 1994.
Heats entire engine (Lycoming O360-A4K: Oil 120° F, CHT 62° F @ 20° F OAT). Robust design saves time & money by allowing easy transfer to other engines or reinstallation after overhaul.
Famous for durability and reliability • The size of the unit is either • 5 x 4-5/16" or 5 x 2-3/4" (depending on model).• Models can be used for over 600 Lycoming and most Continental engines as well as some Franklin, Garrett, and Marathon.• No pads to blister and fail.• No fine wires to clutter engine compartment.• The preheater is impervious to puncture and contaminants.• Can be reinstalled after overhaul or to another engine.• Can be left on continuously (the heater is thermostatically controlled: 170-200° F).• The heater will never overheat. • Can be used with portable generators.• 220 watts; two, 110 watt heater cartridges in parallel.• Extremely simple installation.• Minimal paper work. Installation is considered a minor modification with no STC or 337 entry needed. Simply make a log book entry.• Two-year, unconditional guarantee; the best in the industry

Application: Continental (except kidney shaped)5"x4-3/8"x7/8".
P/N 08-04430 ..... $199.95

Application: Lycoming IOs w/air intake on bottom (IO 360A1A, for example); for engines where a smaller footprint required. Size: 5"x 2-7/8"x 5/8"
P/N 08-00372 ..... $189.95

Replacement Parts

Replacement Adhesive ..... 08-01054 ..... $12.50
Replacement Adhesive Kit (includes Applicator, Tie wraps, and Safety Wire) 08-01055 ..... $15.90

KENNON INSULATED ENGINE COVERS

Kennon's insulated engine covers are custom made fro the specific year, make and model of aircraft for a a snug fit. Kennon makes it own engine blanket material using a bonded fiberfill that doesn't need to be quilted to stay in place, which can destroy the loft and put thousands of needle holes in the cover where heat can escape. The outer shell is made of red, blue, or black polyester rather than nylon, increasing the useful life of the cover and the inner layer is fluorescent orange which can be used as a signaling device in the event of an emergency. Flaps for oil doors to check or fill the oil and cowling inlet flaps for preheating purposes can be added for $25.00 each. Insulated prop and spinner covers are also available.

2-Seat A/C (sml).....07-00983 .....$395.95 4-6 seat A/C (reg.).....07-00984 ....$409.95
Twin Eng. A/C .....07-00985 .....$769.99 Spinner Cover.....07-00987 ..... $98.95
Prop Cover.....07-00988 ..... $49.95

SAFE-HEET ENGINE HEATERS

SAFE-HEET is a thin flexible pad that is bonded to the engine oil sump. The kit is complete with materials and step-by-step instructions. A log book entry is all that is required for permanent installation; No S.T.C. or 337 form required. There are no airframe modifications required. SAFE-HEET can be used with a timer or the 707 temperature controller, and uses standard 110 A.C. voltage. We recommend using the SAFE-HEET 707 Temperature Controller to cure the adhesive for faster installation.

MODEL 700 Dimension: 4" x 4" ..... P/N 05-04420 ..... $174.50
MODEL 720 Dimension: 4" x 7" ..... P/N 05-04421 ..... $174.75

VARIABLE TEMPERATURE CONTROLLER - The SAFE-HEET Variable Temperature Controller can be used with any 700 Series SAFE-HEET Engine Pre-heater as an installation aid, or for providing temperature control for continuous pre-heat without promoting internal engine corrosion.

P/N 05-04423 ..... $73.75

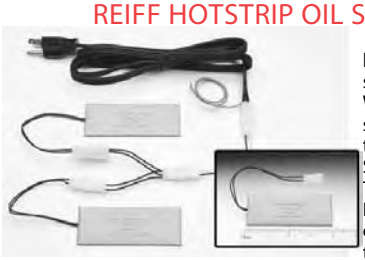
For application information please call or visit our website at www.aircraftspruce.com

NORTHERN COMPANION PRE-HEATER

Compact: NC5A = 6" x 17.25", NC5B = 6" x 15". Lightweight: 6lbs, 6oz average weight. Multi Fuel: *100LL aviation gas - Leaded or unleaded auto gas - White Gas - Kerosene . Diesel - JP4 and JP8 jet fuel. Approximately 20,000 BTU: Type of fuel and pressure in bottle affect output. Shock-corded legs: Slide the legs away from the clips and they seat themselves in the base. Stainless Steel Burner Chamber. No Battery or Other Electrical Power Required. Fast Setup and Takedown - Even with mittens on!. No Tools Required

6" X 17.25" ..... P/N 05-04767 ..... $777.00
6" X 15" ..... P/N 05-04768 ..... $776.00

REIFF HOTSTRIP OIL SUMP HEATERS



HotStrip is thin and lightweight like a silicone pad, but made of steel for maximum durability. Works either as a stand-alone sump heater or integrated with the Hot Band Cylinder Heating Systems in the Standard, Turbo, and Turbo XP Systems. Bonds to the bottom or side of oil sump and electrically heats the oil. Features dual heating elements for redundancy. System includes two 100W elements thermostat, and power cord.

FAA Approved for:
Lycoming 0-235; All 290, 320, 360 series; All 435, 480, 540, 541 series; Continental IO-346; All 300, 600 series; E-165, E-185, E-225, All 470, 520, 550 series.
HotStrip Oil Sump Heater System: All engines above (Except Continental A-65, A-75, A-80, C-85, C-90, O-200, IO-240. These engines with oval oil sump use HotPad flexible silicone heating elements) Franklin 165, 220.
P/N 08-00688 ..... $189.00

REIFF PREHEATER FOR ROTAX 912/914

The Reiff preheat system for Rotax 912 and Rotax 914 aircraft engines is an engine-mounted electric preheat system designed for easier cold-weather starts. The preheat system consists of a 100-watt metal "hot strip" element, which is epoxied to the bottom of the crankcase, and a 50-watt band heater that is clamped to the oil tank.
The Reiff is FAA approved, and includes a thermostat to keep the oil from exceeding 150° F.

Description	Part No.	Price
150 Watts 110V	08-06219	$239.00
150 Watts 220V	08-06219-1	$268.75
250 Watts 110V	08-07620	$359.00
250 Watts 220V	08-07620-1	$354.00
350 Watts 110V	08-07621	$479.00
350 Watts 220V	08-07621-1	$479.00

THE SWITCHBOX REMOTE CONTROL APP

The easiest, cheapest and safest way to remote control any electrical device.
For Pilots: No more driving to the airport hours before a flight. Turn on your Engine Heater from your cellphone, and simplify your cold flying routine! TIP: Activate a 2nd device like a Cabin Heater for your sensitive avionics, or a Coffee Maker before you arrive!
For General Use: Your new 'Smart Home' with the easy automation from SwitchBox. Remote control your heating, lighting and air conditioning, from anywhere in the world. TIP: Turn On the A/C before you get home, or check to see if you left the lights On and turn them Off. Save Money!

P/N 08-07711 ..... $299.00

EP

ENGINE PREHEATERS – CABIN HEATERS

BRUSHLESS CABIN HEATERS

DC Thermal heaters will work in any vehicle with a DC electrical system from 12- 72 volts including cars, trucks, vans, busses, heavy equipment. DC Thermals heaters aren't your average heater. They offer the ultimate in durability and reliability and excel in the harshest possible environments.

The new Brushless SA series line of heaters are based on DC Thermals proven Stealth series, but with a newly designed brushless fan. The brushless cabin heater design has proven to work well with sensitive electronics found in some of todays equipment. The Stealth Brushless series has a newly designed fan and motor assembly as well as a complete new mounting system. The Stealth SA is the perfect choice for the person who wants to add reliable INSTANT heat in just a few minutes. No water lines to run, fittings to install or worry about a corroded core down the road, and most importantly INSTANT HEAT, INSTANT DEFROST. No warm up time! These heaters are available from 12-72 volts, and different wattages as well. The Stealth heater is simple to install and can be operational in minutes. Measuring only 6" long and 5" tall, our Stealth heater will fit in virtually any small space. RuCar elements allow the heaters to be mounted vertically OR horizontally which allows even a tighter mounting space.

Specifications: Heater Dimensions: 6"x 5" X 4". Brushless 50,000 Hour Ball Bearing Fan. 10,000 Hour DC Thermal ©RuCar Vacuum Sealed Elements. Case Construction: Riveted T5052 Aircraft Aluminum. Wired Entirely with GXL Wire. Thermally Protected. HIGH and LOW HEAT Settings. Comes complete with mounting hardware, mounting bracket, fuse, fuse holder, electrical connector ends, and detailed instruction. TWO YEAR Parts AND Labor Warranty.

Model	Volts/Watts	BTUS	Part No.	Price
SA12-3000	12V / 360W	6012	05-02121	$198.95
SA12-4000	12V / 480W	8016	05-01966	$218.95
SA12-5000	12V / 600W	10,020	05-03869	$228.95
SA24-2500	24V / 600W	10,020	05-04855	$195.75
SA24-3500	24V / 840W	14,028	05-03870	$208.95
SA24-4500	24V / 1080W	18,036	05-02123	$226.95

EP

TANIS PREHEAT SYSTEM FOR ROTAX 912/914 SERIES ENGINES

Preheat system for Rotax 912/914 series engines. Kit contains heating elements for each cylinder, crankcase, and oil sump.

Standard ..... P/N 08-07395 ..... $635.00
Europe ..... P/N 08-07395-230 ..... $642.00

TANIS PREHEAT SYSTEM FOR JABIRU 3300 ENGINES

Preheat system for Jabiru 3300 engine. Includes heating elements for each cylinder and oil sump, complete wiring harness and installation hardware.

P/N 08-07088 ..... $574.95

TANIS HEATER FOR C162 SKYCATCHER

Tanis Aircraft Products announced today that they now have an engine preheat system specifically for the Cessna 162 Skycatcher and the LSA market. This system has been approved by Cessna as per "Modification Kit MK162-25-06B". (Reference Preheat System Part Number: TS02884-115.) The Skycatcher system is a new addition to the extensive product line already available for all Single Engine, Multi Engine and Turbine Cessna products. P/N 08-07626 ..... $699.00

RANS AIRCRAFT CABIN HEATER

The RANS aircraft heater is the answer to the winter flying "chills". It is very lightweight, inexpensive and installs easily in just two hours. This heater utilizes ram air & the heat off the engine muffler. Operation is simple. Slipstream air is forced through the heater inlet, passing over the muffler, picking up the heat and delivering it to the cabin or pod via an Aeroduct hose. Contains no moving parts. Fits Rotax mufflers and adaptable to other engines. P/N 05-17400 ..... $239.00

NEAT HEATER

A neat and compact, powerful heater system for your Light Sport Aircraft! Never fly cold again. Installs quickly and easily in any aircraft with a liquid cooled power plant. Specifically Designed For the Rotax 912 and 582.

Features: • Powerful 300 CFM Fan • Draws Only 3.4 amps • Simple on/off controls • Completely Shut Coolant Off In Summer • Tested, Proven Design to 250 Deg at 25 psi. • Infinite Mounting Possibilities • Safe and Reliable • Easy to Install/Service • One Year Parts Replacement Warranty

Specifications: • Dimensions: 7.5" x 6.75" x 3.75" • Weighs only 6 lbs pounds

Neat Heater ..... P/N 08-07376 ..... $434.00
Neat Heater Install Kit ..... P/N 08-07377 ..... $242.95

HORNET AIRCRAFT HEATERS

Because the Hornet Heaters are hand built, the user can select the thermostat temperatures. The two-stage operation also reduces amp inrush by sequencing the heaters. Perhaps the most important feature of the Twin heating system is the peace of mind that comes from knowing that the possibility of both heaters failing simultaneously is almost nonexistent and one heating circuit will provide enough heat to prevent engine damage. The unit is equipped with a switch that provides the user with a means to test the operation of each heating circuit independently. Other important features include a non-conductive fire rated fiberglass housing, mil-spec wiring, and an industry leading 3-year warranty. Made in the United States.

Description	Part No.	Price
Hornet - 22 Cigarette Cord / Inflight Heater 1 - Fan; User controlled on/off toggle 2" x 2.5" x 6.5"; 12v DC 125 watts	08-12210	$198.75
Hornet - 22 XLR Cord / Inflight Heater 1 - Fan; User controlled on/off toggle 2" x 2.5" x 6.5"; 24v DC 125 watts	08-12211	$198.75
Hornet - 22 Cigarette Cord / Inflight Heater 1 - Fan; User controlled on/off toggle 2" x 2.5" x 6.5"; 24v DC 125 watts	08-12212	$198.75
Hornet - 22 40ft Prong Cord / Engine Preheater 1 - Fan; 70° F; 2" x 2.5" x 6.5"; 120v AC 125 watts	08-12215	$198.75
Twin Hornet - 22 Cigarette Cord / Inflight Heater 2 - Fan; User controlled on/off toggle; 2" x 2.5" x 9.5"; 12v DC 200 watts	08-12218	$299.00
Twin Hornet - 22 XLR Cord / Inflight Heater 2 - Fan; User controlled on/off toggle; 2" x 2.5" x 9.5"; 24v DC 200 watts	08-12219	$299.00

Description	Part No.	Price
Twin Hornet - 22 40ft Cord/ Engine Preheater 2 - Fan; 70° F; 2" x 2.5" x 9.5"; 120v AC 250 watts	08-12217	$329.00
Twin Hornet - 22 Cigarette Cord / Inflight Heater 2 - Fan; User controlled on/off toggle 2" x 2.5" x 9.5"; 24v DC 250 watts	08-12220	$299.00
Quad Hornet - 24 Hard Wired / Inflight Heater 4 - Fans; 70° F; 2.5" x 4" x 9"; 12v DC ; 500 watts	08-12222	$399.00
Quad Hornet - 24 Hard Wired / Inflight Heater 4 - Fans; 70° F; 2.5" x 4" x 9"; 24v DC; 500 watts	08-12223	$399.00
Quad Hornet - 24 40ft Cord / Engine Preheater 4 - Fans; 70° F; 2.5" x 4" x 9"; 120v AC; 500 watts	08-12221	$428.00
Hornet - 35 Engine Preheater 1 - Fan; 70° F; 3.5" x 4" x 8"; 12v DC; 200 watts	08-12227	$278.95

Description	Part No.	Price
Hornet - 35 Hard Wired / Inflight Heater 1 - Fan; 70° F; 3.5" x 4" x 8"; 24v DC; 200 watts	08-12228	$248.95
Hornet - 35 Hard Wired / Inflight Heater 1 - Fan; 70° F; 3.5" x 4" x 8"; 120v AC; 300 watts	08-12229	$248.95
Twin Hornet - 35 Engine or Cockpit Preheater 2 - Fan; 70° F; 3.5" x 4" x 10"; 120v AC; 600 watts	08-12224	$349.00
Twin Hornet - 35 Hard Wired / Inflight Heater 2 - Fan; 70° F; 3.5" x 4" x 10"; 12v DC; 400 watts	08-12225	$319.00
Twin Hornet - 35 Hard Wired / Inflight Heater 2 - Fan; 70° F; 3.5" x 4" x 10"; 24v DC; 400 watts	08-12226	$319.00

CH48110-1 CH48111-1

CHAMPION SPIN-ON OIL FILTERS

	Aircraft Model	Filter P/N
Beech	E33, F33, A35 thru S35	CH48109-1
Cessna	120, 140, 170, 172, 180, 182, 185,205,210, 310 C thru Q, 310R	CH48110-1
Mooney	M20, M22	CH48110-1
Piper	PA-18, PA-22, PA-23, PA-24, PA-25, PA-28, PA-30, PA-31, PA-34, PA-60	CH48110-1
LSA	Lycoming 233	CH48114-1

Filter P/N	Price	12 Pack	Price
CH48103-1	$22.75	08-00905-12	$254.95
CH48104-1	$23.50	08-00906-12	$273.95
CH48108-1	$23.50	08-00907-12	$241.95
CH48109-1	$23.50	08-00908-12	$266.95
Filter P/N	Price	12 Pack	Price
CH48110-1	$23.50	08-00909-12	$232.95
CH48111-1	$27.50	08-00910-12	$267.95
CH48114-1	$25.50	08-07538-12	$367.00
CFO-100-1	$22.50	----	---

K&N OIL FILTERS

K&N powersports oil filters are 'TUV' product endorsed and 'TUV' factory production monitored. This means every K&N oil filter is equal to or will exceed all OEM specifications. Our filters contain a modern synthetic filter media, designed for ultimate flow with less pressure drop, yet engineered for outstanding filtration to meet or exceed all OEM specifications. All K&N powersports 'spin-on' oil filters feature a heavy-duty metal can with a 17mm nut affixed onto the end that allows for easy installation and removal. The 17mm nut is crossed-drilled so racers can safety wire the filter to their bike.

K&N OIL FILTER KN-141 .....P/N 08-06231 ..... $9.75
K&N OIL FILTER KN-142 .....P/N 08-00691 ..... $9.75

FM ENGINE MOUNTED OIL FILTER ADAPTER

FM engine mounted oil filter adapters eliminate the need for oil screens and provide increased filtering capabilities for longer engine life. Being engine mounted with no external lines, they reduce mess during oil changes and increase the time between oil changes. Includes adapter, filter, gaskets and STC. (CO-300 Pictured). Note: Tempest filters are included with FM adaptors. Price listed is for one adapter each.

FM Model	Aircraft Application	Engine Application	Part No.	Price
T.A.F.-L	Cont. C-75-12 C-85-12 O-200 O-200A	Cessna 120, Cessna 140, Cessna 150, Luscombes, Taylorcrafts, Cubs Note: Will only for Cubs with pressure cowls (totally encloses the engine). Will not work on Cubs that cylinders stick out through the cowling.	08-00631	$278.95
CO-300	Cont. C-125, C-145, CO-300	Cessna 170, 172, Globe Swift, Maule	08-00632	$331.00
C6LC-S	Cont. O-470, Cont. IO-470, Cont. IO-520	Bellanca Viking, Cessna 182, 55 series Beech Baron	08-00633*	$459.00
C6LC-L	Cont.O-470 IO-470, IO-520	Cessna 205, 206, 207, 210,310, Beech Bonanza & Debonair, Navion, Meyers, Twin Commander,Widgeon	08-00634	$459.00
C6SC	Cont. IO-360	Maule, Cessna 172 Hawk XP, Cessna 337, Cessna 336, Cessna 0-2, Mooney M20-K, Piper Turbo Arrow II & IV, Piper Seneca II, PA-34-200T, Cessna 175	08-01038	$398.00
C6LC-11/15	Cont. O-470-11, Cont. O-470-15	Cessna L-19 "Bird dog"	08-01037	$459.00

* WILL NOT FIT AIRCRAFT WITH FLOATS

TEMPEST OIL FILTERS

Tempest Oil Filters feature a MAGNETIC secondary filtration system that attracts steel particles too small to be caught in the filter media.* Base Plate Thickness: .187" * Burst Pressure: 700 psi * Media Size: 311 sq. in. * AA48108 & AA48109: *Bypass Relief Valve TCM specs: 12-14 psi *Patented PC Housing.

Filter No.	Our Part No.	Price
AA48103-2	08-01266	$18.50
AA48104	08-01267	$18.80
AA48162 Cessna 162 LSA	08-48162	$19.95

Filter No.	Our Part No.	Price
AA48108-2	08-01268	$18.50
AA48109	08-01269	$18.50
AA48110-2	08-01270	$18.50
AA48111	08-01271	$18.50

SPIN-ON OIL FILTER - SIX PACK

Part No.	Tempest	Price	Part No.	Tempest	Price
08-04969	AA48103-2-6PK	$105.00	08-04972	AA48109-6PK	$105.75
08-04970	AA48104-6PK	$105.75	08-04973	AA48110-2-6PK	$105.00
08-04971	AA48108--26PK	$105.75	08-04974	AA48111-6PK	$105.75

TEMPEST ROTAX OIL FILTERS

The new filter has all the features which have made the Tempest oil filter so popular, including the magnetic secondary filtration system, and higher burst pressure. Full Can Thickness:.019". Base Plate Thickness:.100". Burst Pressure:275-325. Media Size:118 sq. in.

P/N 08-07226..... $22.90

FOR TEMPEST OIL FILTER TOOLS SEE PAGE 777.

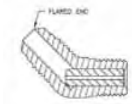
AIRWOLF REMOTE MOUNTED OIL FILTER KITS

The remote mount oil filter kit by Airwolf Filter Corp. replaces the Lycoming oil screen and housing allowing every aircraft to have an oil filter and to locate it on the firewall where its easy to get to. The adapter takes up no more space on the engine than the original part, so even the tightest installations can benefit from it. Your Vernatherm and oil temp bulb are reused and transferred directly to our adapter, everything else is included. Universal STC'd kit fits any Lycoming powered Single/Multi engine airplane less than 450hp. All other STC'd for specific aircraft. Hoses not included unless where indicated. Perfect for Tight Installations in: * Avion * Aeronca * Bellanca *Beech *Cessna *Cozy MK-IV * Glasair * Grumman * Lancair *Long EZ *Maule *Mooney * Piper * Pitts * RV *Skybolt *T-18 *Vari-EZ * Velocity Fits Lycoming Series Engines: 0-235, 290, 320, 340, 360, & 540

Application	Part No.	Price
Lycoming Filter Relocation Kit - Requires existing Lycoming 77852 Spin-on adapter. Application does not include helicopters.	08-00038	$529.00
STC'd Pratt & Whitney R985 Kit	08-00039	$914.00
P&W R985 Kit, Stearman	08-00995	$816.00
P&W R1340 Kit, T-6/Harvard Gorilla Pump for radial engines with slip on fittings.	08-07385	$928.00
P&W R1340 Kit, T-6/Harvard Gorilla Pump for radial engines with Aeroquip flare type fittings.	08-07386	$940.00
AFC-K015-D P&W R1830 Kit, DC-3/C-47	08-00997	$1,295.00
AFC-K015-E R985 Kit, Beach-18, Staggerwing, DGA-15	08-00998	$815.00
P&W R1340 Kit, Otter	08-00999	$914.00
AFC-K015-G P&W R985/1340 Kit, AG-Cat	08-01001	$914.00
AFC-K015-H P&W R1340 Kit, AT301/401/501	08-01002	$909.00
R1340 Kit, Thrush/S2D (Snow)	08-01003	$914.00
AFC-K015-L P&W R985 Kit,	08-01004	$811.00
FC-K015-K P&W R985 Kit, Weatherly ; Gorilla Pump for radial engines.	08-07297	$927.00
AFC-K016-A - Curtis Wright R755 Kit [Small Radials] Gorilla Pump for radial engines.	08-07298	$523.00
AFC-K016-B - Curtis Wright R1820 Kit [T-28]; Gorilla Pump for radial engines.	08-07299	$995.00
AFC-K016-C Curtis Wright R1820 Kit [Sikorsky S-58] Gorilla Pump for radial engines.	08-07300	$1,234.00
AFC-K016-D Curtis Wright R1820 Kit [DC-3] Gorilla Pump for radial engines.	08-07301	$1,234.00
AFC-K016-E Curtis Wright R1820 Kit [Grumman Tracker] Gorilla Pump for radial engines.	08-07302	$995.00
Lycoming Homebuilt Kit	08-05605	$505.00
STCD Husky Kit AFC-K005 Includes Hoses & Clamps	08-05635	$1,029.00
STCD Super Cub Kit AFC-K006 Includes Hoses & Clamps	08-05630	$798.00
STCD Universal Lycoming Kit	08-05660	$529.00
STCD Lycoming Kit-Fits all with Single Drive,Dual Magneto Engines.	08-05665	$528.00
STCD Lycoming Kit - Fits All IO-720 Engines	08-05670	$745.00
STCD Universal Continental Kit - Fits A50, A65, A75, A80, C75, C85, C90, C125, O-200, & IO-240 Engines.	08-05675	$529.00
STCD Continental Kit-Fits C145,O300,GO300,&IO360A,C,D,G,H,J,K	08-05680	$539.00
STCD Continental Kit (O470, IO470, IO520, TSIO520, GTSIO520, & IO550 Engines)	08-05685	$529.00
STCD Continental Kit (O470-11 & -15 Military Engines used on T34 & Cessna 305 Birddogs.)	08-05690	$595.00
STCd Continental Kit - Fits E-165, E-185, E-205, E-225	08-05700	$544.00
STCD Continental Kit (TIO360, IO520BA, C, M, TSIO520 B, D, E, J, K, L, N, U, BE, VB, WB & IO550B, C Engines)	08-05800	$665.00
STCd Continental Kit - Fits W-670 Radials(Stearman) Includes Hoses & Clamps	08-05805	$539.00
STCD Continental Kit - Fits W-670 Radials (Waco)	08-05810	$531.00
STCD Franklin Oil Filter Kit Includes Hoses & Clamps	08-05815	$895.00
Replacement Filter Standard Length (Champion oil filter)	CH48108-1	$23.50
Replacement Filter Long (Champion oil filter)	CH48109	$23.50

EP

OIL FUEL FLOW RESTRICTOR FITTING



An oil/fuel flow restrictor fitting designed to fit the Lycoming engine oil pressure port as well as the fuel pressure port on the KB-090-T. This fitting is a modified AN823-4 and the restriction is a .040" hole. Threaded end is 1/8" NPT. ..... P/N 05-11908 ..... $31.95

CONTINENTAL REMOTE OIL FILTER ADAPTER

Continental Remote Oil Filter Adapter, replaces the oil screen and will fit C65 thru O-200 engines 3 ports In and out (for the oil lines to and from oil filter) ; 1 port for oil temperature. Note: This Continental Remote Oil Filter Adaptor will go nicely with the Remote Oil Filter Bracket 08-01057 For Experimental use only Does not include fittings or copper gasket as shown in image.

P/N 08-13154 ..... $214.29

B&C BC700 LYCOMING OIL FILTER ADAPTER

The original 90-degree oil filter adapter for Lycoming engines, precision CNC machined from billet aluminum. Designed to provide a high-quality replacement for the stock Lycoming oil screen or horizontal spin-on filter adapter, the BC700 mounts directly on the engine accessory case without interference with the magnetos, vacuum pump, or standard mechanical tach drive. STC/PMA on Lycoming 0-235; O, IO, LIO, AIO, AEIO-320; O, IO, LIO, HO, HIO, TIO, AEIO-360; O, IO, HIO, TIO, LTI, AEIO-540 & IO-720 series engines. Adapter kit also includes a new gasket, crush washers, mounting bolts, and CH48108-1 filter. Weight: 1 lbs. (with filter: 2.30 lbs).

BC700-1 Oil Filter Adapter, STC/PMA ..... P/N 08-00195 ..... $445.00
BC700-H Oil Filter Adapter, Homebuilt ..... P/N 08-00196 ..... $398.00

ACCESSORIES:

B&C Oil Temperature Probe Adapter ..... P/N 08-07092 ..... $10.00
B&C Vern-a-therm Opening Plug ..... P/N 08-07093 ..... $34.50

CESSNA / CONTINENTAL OIL FILTER ADAPTER KITS

Part No.	Aircraft Application	Price
0450404-202	C150, A150, F150, FA150, FRA150	$932.00
0556010-200	C172, F172	$963.00
1250922-201	C180, C185, C188, T188	$4,449.00
1250922-200	C205, C206, U206, P206, 207	$593.00

All the Continental spin on adapter kits above require the following items in addition to the adapter:
Oil Filter ..... P/N CH48110 ..... $23.50
Nut ..... P/N 1250405-1 ..... $298.85
AN123883 O-Ring ..... P/N 08-04930 ..... $4.35

LYCOMING SPIN-ON FILTER ADAPTER KITS

Part No.	Aircraft Application	Price
LW-13743	All Applicable Engines Except Models Shown In Table Below	$732.00
LW-13744	0-235 Series	$797.00
LW-13745	IO-720 with 1200 Series Series Magnetos	$611.00
08-00513	0-320-H (LW-14969)	$1,629.00
LW-13904	All Engines with Dual Magnetos. Includes Converter Plate Assembly and Does Not Include Filter	$761.00

All Lycoming spin on oil filter adapter kits above include adapter, oil filter assembly, adapter plate, gaskets, & attaching hardware. LW-14969 kit also contains oil cooler bypass valve assembly, 2 elbows, & 2 oil seals for oil cooler installations.

CASPER LABS LYCOMING 90° OIL FILTER HOUSING

Designed to provide sport plane builders and owners several improvements over the standard Lycoming oil screen or filter hardware. This device locates the filter in the vertical plane for two unique advantages. 1) The filter is now in "free" space, permitting installation with tight engine to firewall clearance (that would otherwise be limited to an oil screen). 2) The filter is easily accessible without contortions or broken knuckles. 3) When it is time for filter changes . . . a prick punch in the top of the filter allows oil to drain back to the sump such that none is spilled during removal. No accessory case, lower cowl, or nose gear cleanup is required after filter removal.

Kits Include: * Housing * Filter * O-Ring and Washer

Exper. Oil Filter Housing Kit CH48109-1 filter ..... P/N 08-00977 ..... $309.00
Exper Oil Filter Housing Kit CH48108-1 filter ..... P/N 08-00976 ..... $311.95
Exper Adapter only ..... P/N 08-00975 ..... $289.00
STC'd Oil Filter Housing Kit CH48109-1 filter ..... P/N 08-01237 ..... $329.00
STC'd Oil Filter Housing Kit CH48108-1 filter ..... P/N 08-01236 ..... $331.95
STC'd Adapter only ..... P/N 08-01094 ..... $309.00

AEROQUIP E-Z OIL DRAIN SUMP VALVES

Makes aircraft oil changes easy. The hand actuated valve when attached to the oil drain port permits engine oil changes from the ground without removing the engine cowling. The spring loaded E-Z Drain valve cannot be accidentally opened. Actuation of the valve requires a combination push/twist motion. It also contains a dual seal arrangement which combines both an O-ring & metal-to-metal seal to prevent accidental leakage of oil through the valve. FAA Approved for use on the engines listed. Incorporates fine Aeroquip quality hose. Installation eligibility listing furnished with each unit.

Part No.	Engine Application	Thread	Price
AE99950G	Cont. C-90, O-200, GO-300, IO-360 TSIO-360, O-470, IO-470 TSIO-470, IO-520, TSIO-520, GTSIO-520	5/8-18	$239.95
AE80666H	Cont. O-300, late C-145	1-18	$687.50
AE80664H	Lycoming Engines	1/2NPT	$198.75

Valve O-Ring, All Models ..... MS28775-011 ..... $0.21 Ea.
Interface O-Ring ..... AE99950G MS28775-113 ..... $0.26 Ea.
AE805555H MS28775-118 $0.21 Ea.

Not to be used on Piper Models PA-28R-200, PA-28R-201, PA-28RT-200.

SAF-AIR OIL DRAIN SUMP VALVES

Changing hot engine oil has never been easier! With the SAF-AIR oil drain valve, no wrench is needed to remove the drain plug. A simple push and turn of the SAF-AIR valve locks it in the open position. The valve is made completely from anodized aluminum and stainless steel components. These materials are used throughout the aircraft industry due to their strength and durability. FAA & PMA APPROVED.

Part No.	Engine Application	Thread	Price
S6250	Cont. (same as Aeroquip AE99950G)	5/8-18	$79.90
S1000	Cont. (same as Aeroquip AE80666H)	1-18	$82.90
P5000	LYC (same as Aeroquip AE80664H)	1/2NPT	$83.85
M12175	ROTAX 912, 914	12mm x 1.75	$39.65
S7516	Cont IO-520-E	3/4"-16	$88.75
P7500	Franklin Engines	3/4" NPT	$90.75
S5020J	Jabiru 2200 / 3300	1/2"-20	$40.50
M20150	Subaru 2.2L / 2.5L	20-1.50mm	$45.80

F62

SAF-AIR LOW PROFILE 2-PIECE OIL DRAIN SUMP VALVES

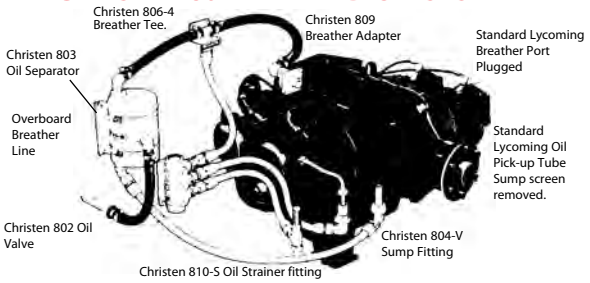
Perfect for a close clearance engine oil drain application such as on the Piper Arrow. These low profile oil drain valves are designed to clear retractable landing gears & other restrictions. The valve is very affordable and can be rebuilt. It is a simple procedure to sample or drain hot oil. The valve is made from 360 brass & 302 stainless steel. FAA & PMA APPROVED. All valves come with a F50-180 opener.

Mfg. No.	Part No.	Engine Application	Thread	Price
F62	05-00981	Continental	5/8-18	$119.65
F10	05-00982	Pratt & Whitney	1-18	$120.00
F50	05-00983	Lycoming	1/2-18 NPT	$119.50
F50-90	05-06924	Lycoming, Continental, Pratt & Whitney, Franklin	----	$24.50

LOW PROFILE OIL DRAIN VALVE FOR LANCAIR

This is exactly what Lancair IV owners have needed for their continental engine! Forget the huge mess when changing oil! Engineered to fit and will not interfere with the retracted nose strut! Finally, makes oil changing simple and easy in your Lancair IV! Fits any 5/8"-18 thread drain plug. Brass and steel construction; yellow zinc plated dust cover provides protection between changes. Drains via hose directly into container. P/N 08-01298 ..... $97.50

CHRISTEN 801 INVERTED OIL SYSTEM



This accessory kit for Lycoming engines provides normal engine lubrication with minimal oil loss during aerobatic flight. It functions as a self-contained extension of the normal engine oil and breather systems. Can be installed in a few hours without engine disassembly.

Part No.	Description	Price
801-4	For four-cylinder engines. Includes 802 Oil Valve (with plug wrench and plugs for unused ports), 803 Oil Separator, 806-4 Breather Tee, and product manual which provides detailed instructions for application. Weight: 4.75 lb. installed.	$1,025.00
801-6	For six-cylinder engines. Same as 801-4 Kit, but is supplied with 806-6 Breather Tee. Weight: 4.75 lb. installed.	$1,077.00
811-V	For vertical-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 804-V Sump Fitting (vertical type) with crush gasket and MS20822-10D elbow. Weight: 0.50 lb. installed.	$419.00
811-A	For horizontal-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 805 Sump Plug with insertion tool, 804-A Sump Fitting (angular 360° swivel-type) with crush gasket and wrench for swivel clamping screw. Weight: 0.36 lb. installed.	$554.00
811-S	For horizontal-screen sump engines. Includes 810-S Oil Strainer Fitting, 810-R Oil Return Fitting, 805 Sump Plug with insertion tool, 804-S Sump Fitting (straight-type) with crush gasket. Weight: 0.33 lb. installed.	$469.00
809-K	For engines with forward breather ports such as the O-235 and O-290 models. Includes 809 Breather Adapter with gasket. AN842-12D hose elbow, and MS20913-6D plug for forward breather port. Weight: 0.53 lb. installed.	$292.95
812-2	For addition of oil ports to engine sumps. Includes two 812 Weld Bosses and quantity of 5% silicon-aluminum welding rod (type 4043) Weight: 0.12 lb. installed.	$167.75
812-1	Same as 812-2 Kit, except with only one 812 Weld Boss for addition of single sump port. Weight: 0.06 lb. installed.	$92.75
813-4	Stainless steel spring wire. Installed inside breather hose to permit relatively sharp bends without collapsing or kinking. 10 x 47/64". Weight: 0.12 lb. installed.	$100.75
813-6	Stainless steel spring wire. Installed inside breather hose to permit relatively sharp bends without collapsing or kinking. 10 x 63/64". Weight: 0.12 lb. installed.	$18.65
807-4	All hoses and fittings required for deluxe show-plane quality installation on four-cylinder engines. Includes Aeroquip braided stainless steel hose for oil lines, MIL-H-6000 rubber-fabric hose for breather lines, thin abrasive cut-off wheel for professional-quality hose cuts, AN and MS fittings (blue anodized), Aeroquip hose end fittings (blue and red anodized), and miniature stainless steel hose clamps. All materials are factory new; no surplus. Weight Excluding Hose: 1.53 lb. installed.	$1,495.00
807-4 Economy Hose & Fitting Kit	These kits include same items as Aviat Factory Kits but are packaged by Aircraft Spruce.	$645.00
807-6 Economy Hose & Fitting Kit		$633.00

10-page detailed manual - describes system operation & procedure for selecting proper components for each engine model.
P/N 05-20600 ..... $17.50 ea.

CHRISTEN OIL VALVE

Multiple port gravity operated ball valve. It is cast aluminum with textured white epoxy enamel finish and all internal steel parts are cadmium plated. Normally installed on firewall or on engine mount. Designed for fittings to be installed either at side or front or both. Requires 3 AN816-10D nipples for hose connection. Wt. 1.75 lbs. installed. P/N 08-06745 ..... $367.00

CHRISTEN OIL SEPARATOR

Features welded aluminum construction with a textured white epoxy enamel finish. All internal parts are cadmium plated, and unit includes stainless steel positioning clamps. Normally installed on fire wall or on engine mount. Requires 2 AN842-12D or -16D hose elbows and one AN823-10D hose fitting. Wt. 2.8 lbs. installed. Applicable to all Lycoming engine applications. Used to replace a worn out or broken oil separator on Christen 801-4 systems only. P/N 08-06740 ..... $469.00

AERO CONVERSIONS OIL SEPARATOR

A high-quality welded and powder-coated aluminum assembly designed to save oil vs. direct overboard crankcase breathers in normal flight operations. Features an extra-high-volume design offering enhanced inverted flight performance in entry-level aerobatic aircraft, allowing oil to be retained and returned to the engine during short-duration inverted and limited negative G maneuvers. The angled design makes it a perfect fit for Sonex Aircraft angled firewalls, while retaining compatibility with traditional vertical firewall installations in other aircraft. Comes with comprehensive installation instructions suitable for a wide-range of engine installations. P/N 08-07107 ..... $128.75

PIPER/BEECH OIL QUICK DRAIN PROBE

This drain probe not only gives you an alternative to the high priced AVI probe but it includes some major improvements. The first big improvement is that the probe is leak proof. The AVI design could leak where it mates to the valve plunger making a mess. The new design incorporates an O-ring seal around the valve body preventing leaks. The O-ring also locks the probe to the valve body. The second big improvement is the addition of a larger drain tube to speed up the oil flow and prevent restrictions. 09M-PRB180 Replaces following PNs: Piper PN 481-357, Beechcraft PN 107-B1, Auto Valve Inc. AVI-BJ-107B1. P/N 12-03289 ..... $73.50

PIPER/BEECH OIL QUICK DRAIN PROBE

90 degree, leak proof. An alternative to the high priced AVI probe but it includes some major improvements. The first big improvement is that the probe is leak proof. The AVI design could leak where it mates to the valve plunger making a mess. The new design incorporates an O-ring seal around the valve body preventing leaks. The O-ring also locks the probe to the valve body. The second improvement is the compactness of the probe. It is actually shorter than the BJ 107B making it easier to install. Replaces: Piper PN: 481-359, Beechcraft PN: 107-B. P/N 12-03237 ..... $73.50

RAVEN BASIC INVERTED OIL SYSTEM

Raven systems consist of the valve with three pipe plugs, tank, mount, and clamps. The tank is constructed from aluminum and is tig welded using stainless steel internal parts prevent corrosion. Valve is machined from solid aluminum, and all parts are power coated black or white. Valve is 5-1/2"h x 1-1/2" x 1-1/2" & weighs 1.85 lbs, 5" tank is for 4 or 6 cylinder applications, & 4" tank is for 4 cyl. applications only.

5" tank-black ..... P/N 08-00796 ..... $724.00
5" tank-white ..... P/N 08-00800 ..... $735.00
4" tank-black ..... P/N 08-00797 ..... $784.00
4" tank-white ..... P/N 08-00801 ..... $724.00

RAVEN INVERTED SYSTEM VAC ADAPTERS

These vac adapters are machined from solid aluminum with anodized finish. Furnished with a seal installed, and complete with AN fitting and gaskets.

Vac-4 for 4 cyl Lycomings
P/N 08-00785 ..... $249.00
Non-Acc'y Vac Pad Oil P/U
P/N 08-00786 ..... $83.75

RAVEN SUMP FITTING KITS

These sump fitting kits come with specialized fittings, washers , O rings needed to install the kit.

Sump kit for Horizontal screen 4 or 6 cyl. Lyc. P/N 08-00787 ..... $386.95

Sump kit for Vertical screen 4 or 6 cyl. Lyc. P/N 08-00788 ..... $279.00

AIRCRAFT FILTER DRIP TRAY

For engines that have horizontal oil filters, this system will eliminate the problem of oil dripping down into the engine and on the firewall while the filter is being removed. A tray is supplied that catches the oil coming from the engine flange and filter while it is being unscrewed. The oil in the tray pours down a hose connected to the bottom of the tray. The filter can now be removed and thrown away. Includes the welded aluminum tray and hose. Full set of instructions included..... P/N 08-00974 ..... $59.75

EP

OIL FILTER SYSTEMS

AIRWOLF AIR/OIL SEPARATOR

The Airwolf Air/Oil Separator will improve the efficiency of your aircraft dramatically whether it is a single engine fun craft of a twin powered corporate plane. Designed to separate air and oil in the crankcase breather & wet vacuum pump systems on conventional aircraft engines, Airwolf recovers oil from the crankcase, thus eliminating the oily overboard discharge and the ever present "oily belly" syndrome. Oil loss is greatly reduced - tests have indicated a recovery of up to 80% of crankcase oil previously wasted, depending on the type and condition of the engine. The Airwolf oil recovery system is only slightly larger than an oil filter cartridge (4" dia. x 7.5") and it is available for all conventional engines regardless of displacement. It can be easily removed and disassembled for inspection and cleaning. With no moving parts, the Airwolf is designed to last the life of your engine. Available for planes with either wet or dry vacuum pump. Now STC'd for most aircraft. Available in black epoxy finish only. Specify aircraft model no., serial no., and engine model. Now manufactured by Airwolf.

Airwolf	Application	P/N	Price
AFC-W300-A	Beech H35, J35, K35, M35, N35, P35 (S/N D-4866 thru D-7309) Debonair 35-33, 35-A33, 35-B33, 35-C33 (S/N CD-2 thru CD-1118)	08-00645	$539.00
AFC-W302-A	Cessna 180/182/185/A185	08-03806	$529.00
AFC-W304-A	Beech Bonanza (Pressure Gyro Systems Only) Beech V35B (S/N D-9787) Beech V35B (S/N D-9806 & after) Beech A36 (S/N E-716) Beech A36 (S/N E-732 & after) Beech F33 (S/N CE-602 & after)	08-01299	$540.00
AFC-W306-A	Piper Cherokee PA-28-140/150/160/180 & PA-285-160/180 Warrior PA-28-151 Archer PA-28-181 Arrow PA-28R-180, PA-28R-200	08-07398	$535.00
AFC-W307-A	Bellanca Viking 17-30A	08-01301	$540.00
AFC-W309-A	Beech (Vacuum Gyro Systems Only) Baron All 55 Series (with IO470)	08-01302	$640.00
AFC-W311-A	Mooney M20 A/B/C/D/E/F/G/J	08-01303	$540.00
AFC-W314-A	Piper PA24-250/260 Comanche	08-03834	$474.00
AFC-W316-A	Cessna (Non Turbo Charged) P206A, B, C, D, E U206A, B, C, D, E, F, G 210L, M	08-00652	$535.00
AFC-W318-A	Cessna (Turbo Charged) TP206A, B, C, D, E TU206A, B, C, D, E, F, G T210L, M	08-01297	$740.00
AFC -W321-A	Cessna Skyhawk 1721, K, L, M (3/8" Rocker Box Drain Lines)	08-00655	$474.00
AFC-W322	Cessna Cardinal 177 Cessna Cardinal 177RG	08-01304	$540.00
AFC-W323-A	Cessna Skylane RG 182	08-01306	$540.00

See www.aircraftspruce.com for unlisted models.

AIRWOLF MINI AIR/OIL SEPARATOR

Reduce oil consumption and remove harmful water vapor with Airwolf's Walker Air/Oil Separator. The AirSep distills and recirculates crankcase oil vapor generated by normal operation, extending engine life.

The Airwolf Walker AirSeps uses a tiny amount of vacuum pump discharge air, to help condense the oil inside the AirSep, and to overcome crankcase pressure to return collected oil to the engine while the engine is running. The competitive systems are only gravity flow so no oil returns into the engine until the engine is completely shut off. Thus, one system is large enough to clean both the engine breather oil and wet vacuum pumps discharge. It comes with a lifetime warranty on workmanship and material of all new AirSeps produced. STC'd

MiniSep, 3/4" Inlet.....P/N 08-05887.....$419.00
MiniSep, 1" Inlet.....P/N 08-07188.....$395.00
MiniSep, 5/8" Inlet.....P/N 08-07189.....$395.00
Wet Vacuum Pump MiniSep, 5/8" Inlet.....P/N 08-07190.....$465.00

ADVANCED AERO AIR/OIL SEPARATOR

Small

Med./Lg.

These air oil separators are proven and tested to help keep your kit plane or experimental A/C free & clean from oil splatter. Totally serviceable and easy to maintain by removing the lid rinse inspect and reinstall. The design allows for easy installation in the breather line by the use of hose clamps. Oil from the separator is returned thru tubing to a port in your engine's housing or by returning at the base of the engine crank case. Made from durable 6061T6 Aluminum, tig welded and anodized in a flat gold an for high quality finish & corrosion protection. Suitable for most engines such as Lycoming, Continental,Jabiru, MP radials & most engines & Radials up to 1200HP for the (SP0900).

Small.....P/N 08-07286.....$295.00
Medium.....P/N 08-07287.....$335.00
Large.....P/N 08-07288.....$365.00
Easy Clamp Bracket Mount.....P/N 08-07289.....$170.00

CHALLENGER FAA/PMA LIFETIME OIL FILTER SYSTEM

The filter element is made from medical grade, type 304 stainless steel micronic filter cloth providing unmatched protection against oil contamination and resultant engine damage.

A rare earth magnet is installed in the top of the element for magnetic pre-filtering of the oil. The unique twist lock design allows for easy disassembly, inspection and cleaning. The quad-ring gasket doubles the seal between the filter and the engine . The filter housing is carved out of a solid piece of 6061 T6 billet aluminum with cooling fins, which not only looks good but aids in dissipating heat.

Features: • Cleanable and Reusable • High Flow Rate • Unique Twist Lock Design • Exteriors Fins • Unaffected by Water, Heat, or Pressure • Safety Wire Attachments 360 degrees • Environmentally Friendly.

Challenger	Replaces	Our P/N	Engine Model	Price
CP-48103C 13/16-16 Thread w/o relief valve	CH48103-1	08-06017	LYCOMING O-320, IO320, O360,IO-360, LO-360, TO-360, HIO-360, LTO-360, LHI0-360 SERIES	$295.00
CP-48104C 13/16-16 Thread w/o relief valve	CH48104-1	08-06018		$295.00
CP-48108C 3/4-16 Thread w/o relief valve	CH48108-1	08-06019	CONTINENTAL 6-285, IO-346, IO-360, TSIO-360, O-470, IO-470, LIO-470, TSIO-470, IO-520, TSIO-520, GTSIO-520, LTSIO-520, IO-550 SERIES	$295.00
CP-48109C 3/4-16 Thread w/ relief valve	CH48109-1	08-06020		$295.00
CP-48110C 3/4-16 Thread w/ Nipple w/o relief valve	CP48110-1	08-06021	LYCOMING O-235, IO-320 SERIES LIO-320, AIO-3230, AEIO-320, O360,IO360, AIO-360, HIO-360,LIO-360, TIO-360, LHIO-360, AEIO-360, O-540, IO-540, HIO-540, TIO-540, AEIO-540, LTIO-540, TIO-541, IO-580, IO-720 SERIES	$295.00
CP-48111C 3/4-16 Thread w/nipple w/o relief valve	CH48111-1	08-06022		$295.00
CP-9124C w/ relief valve	8245-706	08-07174	Bombardier-Rotax 912 F2, 912 F3, 912 F4, 912 S2, 912 S3, 912 S4, 914 F2, 914 F3, 914 F4	$195.50

CHALLENGER ACCESSORIES

Bonanza Gasket	08-01041	$9.95
Gasket C140 150 152	08-01043	$9.95
Gasket C170 172	08-01044	$9.95
Gasket c180 182 185	08-01045	$9.95
Gasket PA28-151, 161	08-01046	$9.95
Gasket Mooney 20E, F	08-01047	$9.95
Gasket Mooney M20J	08-01048	$9.95
Gasket Oval	08-01049	$9.95
Gasket Piper Round	08-01050	$9.95
Gasket C177 Cardnal	08-01264	$9.95

CHALLENGER STAINLESS STEEL MICRONIC OIL FILTER FOR ROTAX 912/914 ENGINES

The filter element is made from medical grade, type 304 stainless steel micronic filter cloth providing unmatched protection against oil contamination and resultant engine damage.

A rare earth magnet is installed in the top of the element for magnetic pre-filtering of the oil. The unique twist lock design allows for easy disassembly, inspection and cleaning. The quad-ring gasket doubles the seal between the filter and the engine . The filter housing is carved out of a solid piece of 6061 T6 billet aluminum with cooling fins, which not only looks good but aids in dissipating heat.

Features: • Cleanable and Reusable • High Flow Rate • Unique Twist Lock Design • Exteriors Fins • Unaffected by Water, Heat, or Pressure • Safety Wire Attachments 360 degrees • Environmentally Friendly.

P/N 08-07174.....$195.50

AIR OIL SEPARATORS – OIL ANALYSIS

SLIME FIGHTER AIR-OIL SEPARATOR

Universal air-oil separator ideal for virtually any experimental aircraft. They are machined from aluminum stock and welded by a certified welder. Oil separation is provided by baffles attached on the inside. This is a one pipe system with no extra drain lines or hoses required. Oil drains back immediately to the engine and warm air without oil goes out. No back pressure. The unit is the size of a salt shaker and weighs only ounces. Installation instructions and fittings included. Easy to install. Currently in use on over 100 RV aircraft.

P/N 08-00661 .....$163.95

SUPER SLIME FIGHTER®

Following in the success of the Slime Fighter® series of air separators, Aircraft Spruce now offers the Super Slime Fighter with the same ease of installation for large Lycoming engines found in aircraft such as the RV-10, Glassair III and the F1 Rocket. Installs in 20 minutes with no additional drain line required. Includes instructions. Clamps and hoses are only included in the RV-10 kit. RV-10 kit includes custom hose shape. Not FAA approved.

Standard Experimental ..... P/N 08-06151.....$219.95
RV-10 Experimental..... P/N 08-06152.....$239.95

HOMEBUILDER'S OIL BREATHER/SEPARATOR

These 4 inch diameter reservoirs have beaded outlets for 5/8" I.D. hoses and a mounting flange for easy firewall attachment. These units are of a new, improved design and the reservoir body is now a spun aluminum bowl for optimum performance. The oil separators minimize oil loss and allow free breathing of the engine. They are recommended for experimental aircraft use only and are not STC'd for any certificated aircraft. Size: 4"dia.x 3-3/8"h. P/N 10570.....$49.50

RMJ-AERO OIL SEPARATOR

Designed to remove oil from the engine crankcase breather line providing the builder with a cleaner plane, less oil consumption, and prolonged engine life from maximum cooking, cleaning, & lubrication. Fashioned after Tony Bingelis's proven design, these separators incorporate several enhancements, including O-ring seals for the lid. Fabricated from aircraft quality materials, TIG welded, and alodyned for corrosion control. They can be firewall or cooling baffle mounted with the cushion clamp provided. The design allows for easy installation in the breather line by the use of hose clamps. Oil from the separator is returned thru tubing to a port in your engine's housing. Should your engine not have an available oil return port, RMJ-Aero can provide a Self Sealing Clamp-On Adapter utilizing your engine's oil filler neck. Installation of this adapter is easy for both flying and aircraft under construction. When clamped in place around the filler neck, the adapter provides a return port for separated oil and an integral seal, which prevents leakage. Installation & maintenance guidelines are included.

Description	Part No.	Price
Oil Separator for Lycoming (3/4" inlet/outlet)	08-00571	$249.00
Oil Separator for Cont. (5/8" inlet/outlet)	08-00572	$249.00
Adapter for Lycomings	08-00577	$31.25
Adapter for Continentals	08-00578	$28.50

ANDAIR OIL/AIR SEPARATOR

The OS8850 has been designed to remove the oil from the crankcase breather on Lycoming and Continental Engines. This gives reduced oil consumption, cleaner aircraft, and environment. * Upper outlet can rotate through 360° allowing easy installation. * The unit can be dismantled for inspection/cleaning. * Vortex swirl separation. O-Ring seals. * Light weight: 6.4 oz. * 4 off 10-32 mounting lugs on the base of the separator for easy fire wall mounting.

P/N 08-01034..... $334.00

ANDAIR CONDENSATION TRAP

This new device is a small and very light weight condensation trap. It is used to extract the water from the oil when used in conjunction with the Andair Oil / Air Separator. Water can build up in the engine due to water in the air condensing during a cold night. Overnight this water sinks to the bottom of the sump settling at the lowest point. This is generally where the oil pump pick up is. Therefore there is a real potential that if one of these devices is not used water can build up in the engine. Flight test have shown that the worst possible condition for water in the oil is on humid days, cold nights and where short flights are undertaken.

P/N 08-01035 ..... $112.75

METAL CHECK ENGINE OIL ANALYSIS KIT

This oil analysis kit is used for determination of the condition of oil wetted engine parts, even on the first sample. This laboratory analysis consists of ICP (Inductively Coupled Plasma Spectroscopy) quantitation of 12 wear metal elements for piston and turbine engines. The analysis is completed in 24 hours - abnormal results are communicated immediately. Available in two versions: with return postage included and without return postage included to fit your needs! AV Lab is recommended or authorized by most engine manufacturers. The kit is excellent for pre-purchase inspection.

OIL ANALYSIS RESULTS - INCLUDING INTERPRETATION AND STATISTICAL ANALYSIS, ARE AVAILABLE ONLINE.

Return Postage Included..... P/N 08-00931 .....$18.95
Return Postage Not Included..... P/N 08-10691 .....$14.95

METAL CHECK AIRCRAFT ENGINE OIL FILTER ANALYSIS KIT

Includes oil and oil filter analysis. Oil filter debris analysis should be part of all preventative maintenance programs. Filter analysis is critical for turbine engines because they generate predominately larger wear particles that are trapped by small micron filtration. The oil filter is rinsed and the exact alloys presents in the debris are determined by SEM/EDXRF. The AMS number, amount, type, form, and condition of the particles are reported. Features: • Largest Oil Analysis Results Database •The Most Accurate Interpretive Results Guidelines • The Most Experienced staff. • Recommended, Approved, or Authorized by Engine Manufacturers. • 24 Hour a Day Service Available 7 Days a Week. Large Oil Analysis Kit. P/N 08-06270 .....$64.75

METAL CHECK ENGINE OIL ANALYSIS KIT FOR TCM ENGINES

This oil analysis kit is used for determination of the condition of oil wetted engine parts, even on the first sample. This laboratory analysis consists of ICP (Inductively Coupled Plasma Spectroscopy) quantitation of 12 wear metal elements for TCM engines. The analysis is completed in 24 hours - abnormal results are communicated immediately. AV Lab is recommended or authorized by most engine manufacturers. The kit is excellent for pre-purchase inspection.

OIL ANALYSIS RESULTS - INCLUDING INTERPRETATION AND STATISTICAL ANALYSIS, ARE AVAILABLE ONLINE.

P/N 08-07372 .....$23.75

AVIATION LABS OIL FILTER ANALYSIS

Analysis of the oil filter only. The oil filter is rinsed and the debris removed is analyzed. The exact alloys present are determined by Scanning Electron Microscopy and EDXRF. The alloys are reported by AMS number. Amount, type, form and condition of particles are reported. Alloy spectra and metal maps for most aircraft engines. Filter analysis is a critical part of all preventative maintenance programs. Aviation Laboratories has been a leader in the development of filter analysis programs for aircraft engines since 1985. Analysis completed in 24 hours. pre-purchase inspection.

P/N 08-10692 .....$52.50

OTHER OIL ANALYSIS KITS

Description	Part No.	Price
Aviation Labs APU Oil Analysis	08-10693	$79.95
Aviation Labs CF34 Oil Filter Analysis	08-10694	$79.95
PW-MOP-NO PW100 Oil Filter Analysis	08-10695	$79.95
PW-RGB-NO PW100 Oil Filter Analysis	08-10696	$79.95
Aviation Labs PW305 Oil Filter Analysis	08-10697	$79.95
Aviation Labs FJ44-33 Oil Filter Analysis	08-10698	$178.00
Aviation Labs Chip Flakes Analysis	08-10699	$129.95
Aviation Labs AE3007 Oil Filter Analysis	08-10700	$79.95

OIL DIPSTICKS

New manufacture oil tank dipsticks stamped with proper calibration markings.

Dipstick Long Neck 13-3/4"..... P/N 08-00037 ..... $46.65
Dipstick Short Neck 9-1/2"..... P/N 08-04612 ..... $47.65
Dipstick 6 Qt. Short Neck 11-3/4" for O-200, C-90
P/N 08-04613 ..... $46.50
Dipstick 4 Qt. Ercoupe long Neck 18-3/4"
P/N 08-04614 .....$49.50

VERNI-THERM VALVE - Lycoming thermostatic oil cooler bypass valve wt. 4 oz. P/N 08-12154 .....$324.00

EP

OIL COOLERS

OIL COOLER APPLICATION CHART

Aircraft Model	Aero-Classic Part No.	Positech Part No.	Stewart Warner Part No.
Beech 10, C23, A24R, C24R	8000075	4211	8406R
Cessna 150,152,A152,170,170,172,175,177	8000075	4211	8406R
Experimental	8000081	4215	10599
Piper PA23-150, PA28-140, PA23-160 (SN 23-163 up), PA28-150, -151, PA28-160, -161, PA28-180, -181	8000075	4211	8406R
PA18, PA18A, PA22-135, -150, -160	8000328		
Pitts S2B	8000215	4219	10611
Stinson 108, 108-1, -2, -3	8000075	4211	8406R
Taylorcraft F22B, F22C, F22R	8000075	4211	8406R

MEGGITT TROY OIL COOLERS

MEGGITT TROY 8406R

MEGGITT TROY South Wind 8406R (formerly Harrison P/N 8526250). Applicable to all Lycoming installations from 4-cylinder 0-235 through 6-cylinder IO-540 engines. Inlet & outlet ports accept 3/8" pipe fittings. Fits Beech B-19 Sport (0-320-E2C), C-23 Sundowner (0-360-A4G), Muskateer (0-360-A2G), Cessna 172 Skyhawk (0-320-E2D), 177 Cardinal (I0-360-AF6D), 177 Cardinal (0-0-360-A1FG), 177 Cardinal RG (0-360-AFGD), Mooney Ranger (0-360-A2D). Size: 7.75"l x 3.5"d x 4.75"h. Wt.: 4 lbs.

Model 8406R..... P/N 8406R.....$647.00

Model 8432R--Fits BeechA24R Sierra (IO-360-A2B), Mooney Chaparral (IO-360-A1A), Mooney Mark 22 (TIO-541-A1A). Weight 4 lbs.

size: 5-3/4"Hx8"Wx3-5/8"L ..... P/N 8432R.....$745.00

Model 10611R - Fits Piper Single Engines..... P/N 10611R.....$699.00

Model 10599R - Fits Cessna and Stoddard..... P/N 10599R.....$695.00

Model 10578R - Fits Gulfstream AA-1 ..... P/N 10578R.....$820.00

Model 10610R - Fits Cessnas..... P/N 10610R.....$698.00

Model 10614R - Fits Piper, Cessna, Mooney ..... P/N 10614R.... $1,182.00

Model 10568R - Fits Gulfstream AA5B, GA-7 ..... P/N 10568R.....$623.00

Note: The oil coolers manufactured by MEGGITT TROY formerly Stewart Warner will fit the aircraft listed but in most cases are not furnished with the FAA/PMA certification for those aircraft. The exceptions are P/N 8406R and P/N 8432R are furnished with FAA/PMA approval for certain Mooney aircraft. For all other applications, Form 337 field approvals are required for installation on certificated aircraft. Call for further information.

EP

LIGHTWEIGHT OIL COOLER FOR HOMEBUILTS

Lightweight, compact oil cooler improves cooling in closely cowled homebuilts. Mounts in any position. Furnished with 4 ft. of 5/16" I.D. hose and 4 clamps. Size 7-1/2H x 12-3/4L x 3/4D.

P/N 403 ..... $56.50

HOMEBUILDER'S ENGINE CRANK CASE OIL BREATHER

This is a 3-1/4" dia. can reservoir with a 3/4" or 5/8" od hose barb outlet, 1/8npt curtis drain valve on bottom of can, and a fire wall mounting bracket. Item also available with a 5/8 od hose barb outlet, please call or email for price & availability. It keeps oil in can and off belly of airplane then can be drained later with petcock. Helps to keep crank case condensation to a minimum. Recommended for experimental aircraft use only not STC'd for certified aircraft.

3/4" od hose barb outlet ..... P/N 08-00765 ..... $105.85

5/8" od hose barb outlet..... P/N 08-07219 ..... $105.85

AEROMAG

AeroMag is a powerful high-tech magnet assembly that fits around your oil filter to trap and hold steel particles against the inner wall of the filter canister. These are the particles that are missed by the standard aircraft filter. This results in fewer damaging wear particles recirculating in your oil, and prolonged engine life. Install is simple, and there are no moving parts. AeroMag fits all Lycoming & Continental engine filters. For experimental aircraft only (FAA approval pending). P/N 08-01088.....$82.75

AeroMag for 3" Dia. Filters (Rotax) .....P/N 08-01235 .....$59.75

AERO CLASSICS REMOTE MOUNT OIL COOLERS

8000357
Bar & Plate

Aero Classics now offers the General Aviation community the largest number of FAA-PMA (Federal Aviation Administration - Parts Manufacturing Authority) approved oil coolers in the world.

Remote-mount oil coolers for piston and turbine engines, mount to the airframe or engine baffle instead of directly to the engine. Hoses are used to connect the oil cooler to the engine. This type of oil cooler is used with most non-Continental engines including all Lycoming engines. All FAA-PMA approved with supporting FAA 8130-3 documentation unless otherwise noted. All Aero-Classic coolers come with a full two year warranty.

Features: Corrosion Protection per MIL-C-5541, Class 1A. Pressure tested to 400 psig. Optimized internal oil flow design. Light-weight. Low cost. Two year warranty

Note: Models 8000081, 8000706 & 8000942 are for experimental aircraft only. Not FAA-PMA Approved.

Model No.	Description	FAA/PMA Approved	Part No.	Price
8000075	7 Row Drawn Cup	YES	08-00640	$265.95
8000074	9 Row Drawn Cup	YES	08-00641	$267.95
8000081*	10 Row Drawn Cup	NO	08-00642	$269.95
8000215	13 Row Drawn Cup	YES	08-00643	$314.00
8000216	17 Row Drawn Cup	YES	08-00644	$375.00
8000353	18 Row Drawn Cup	YES	08-00808	$459.00
8000328	Bar & Plate	YES	08-00809	$539.00
8000343	9 Row 2 Pass Drawn Cup	YES	08-00810	$619.00
8000356	Bar & Plate	YES	08-00811	$719.00
8000357	Bar & Plate	YES	08-00812	$726.00
8000590	Bar & Plate with Valve	YES	08-07408	$2,357.00
8000661	13 Row Drawn Cup	YES	08-07409	$413.00
8000618	Bar & Plate with Valve	YES	08-07410	$1,863.00
8000706	Bar & Plate	NO	08-07411	$737.00
8000942	Bar & Plate	NO	08-07412	$1,070.00
8000950	Bar & Plate with Valve	YES	08-07413	$1,785.00
8000997	Bar & Plate with Valve	YES	08-07414	$2,385.00
8001201	7 Row Bar & Plate	YES	08-07415	$514.00

AERO CLASSICS "HE SERIES" AVIATION OIL COOLERS

Aero's new HE Series (High Efficiency) FAA-PMA oil coolers are designed to be direct replacements for Stewart Warner (today known as Meggitt) oil coolers – most of which do not have FAA-PMA. Aero-Classics new HE Series oil coolers are intended to be a competitively priced option for those whose aircraft came with a Stewart Warner oil cooler. The HE Series come with full FAA-PMA documentation, an industry leading 2YR/2,000HR warranty, and heat rejection capabilities that match or exceed the competition.

Aero's new HE Series oil coolers are approved for use on many Beech, Cessna, Grumman, Mooney, Robinson Helicopter, and other popular aircraft makes. Listed below is the SW part number and the corresponding Aero-Classics HE Series replacement part number.

SW Part No.	Aero Part No.	Description	Part No.	Price
10578R	8001535	4 Row 6" Long Core	08-07425	$447.00
10877A	8001588	6 Row 7" Long Core	08-07426	$552.00
10599R	8001599	8 Row 8" Long Core	08-07427	$539.00
8406R	8001602	6 Row 6" Long Core	08-07428	$498.00
10568R	8001640	5 Row 6" Long Core	08-07429	$476.00
10614R	8001643	14 Row 6" Long Core	08-07430	$790.00
10610R	8001646	10 Row 6" Long Core	08-07431	$606.00
10611R	8001649	11 Row 6" Long Core	08-07432	$637.00
10634R	8001652	12 Row 6" Long Core	08-07433	$704.00
8432R	8001689	8 Row Dual Pass 6" Long Core	08-07434	$645.00
8432S	8001694	8 Dual Pass 6" Long Core	08-07435	$712.00
10865B	8001701	16 Row 7" Long Core	08-07436	$963.00
10880A	8001713	16 Row Dual Pass 7" Long Core	08-07437	$1,022.00
10891A	8001718	14 Row Dual Pass 6" Long Core	08-07438	$778.00
10886A	8001723	16 Row 7" Long Core	08-07439	$911.00
8406R	8001733	6 Row Bar & Plate 8" Long Core	08-07440	$523.00

OIL COOLERS

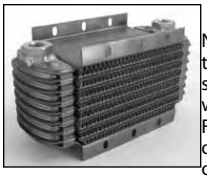
AERO CLASSIC CONTINENTAL OIL COOLERS

8000545 10" Non-Congealing Universal 7th Stud

Aero-Classic's engine mounted oil coolers for Continental powered aircraft offer high quality features such as a CNC machined base for reliable, leak-proof mounting. Aero's line of Continental front mounted oil coolers feature a hassle free design that accommodates both 7th stud and non-7th stud engine cases - eliminating the chance of getting the "wrong" oil cooler. The oil coolers on Continental engines often mount directly to the engine and do not require hoses. All FAA-PMA approved with supporting FAA 8130-3 documentation, and full two year warranty.

Model No.	TCM PN	Description	Spruce Part No.	Price
8000545	639171	10" Non-congealing Universal 7th Stud Front Mount	08-04961	$698.00
8000319	639151	11" Non-congealing Universal 7th Stud Front Mount	08-04963	$698.00
8000531	639152	11.5" Non-congealing Universal 7th Stud Front Mount	08-04965	$698.00
8000683	626189	12 Bolt Congealing Non 7th Stud Front Mount	08-04967	$665.00
8000687	652671	12 Bolt Congealing 7th Stud Front Mount	08-04968	$693.00
8000925	627392	8 Bolt Front Mount	08-07418	$630.00
8000440	654580	Rear Mount	08-07419	$871.00
8000464	646685	Rear Mount	08-07420	$868.00
8000934	646880	8 Bolt Rear Mount	08-07421	$658.00
8000953	654585	Rear Mount	08-07422	$1,367.00
8000960	654572	Rear Mount	08-07423	$839.00
8001213	655090	Rear Mount	08-07424	$1,352.00

Note: Some part numbers have been superceded
8000677 (our part # 08-04962) superceded by 8000545 (our part # 08-04961)
8000307 (our part # 08-04964) superceded by 8000319 (our part # 08-04963)
8000127 (our part # 08-04966) superceded by 8000531 (our part # 08-04965)



NDM OIL COOLERS

NDM is one of the world's largest volume manufacturers of FAA approved oil coolers. An approved supplier to both Lycoming and Continental, as well as many airframe manufacturers, NDM holds FAA/PMA's for most of these oil coolers. NDM oil coolers are manufactured utilizing the vacuum oven brazing process rather than the less costly Controlled Atmosphere Brazing (CAB) method used by others to save costs. Utilizing the vacuum oven process guarantees a high quality product and lower warranty returns. If you are not sure which NDM oil cooler is FAA Approved for your aircraft, please provide the aircraft model & serial number and we will determine the correct oil cooler for your application.

Part No.	NDM P/N	Stew.t Warner P/N	Price
08-00739	20001A	N/A	$321.95
08-00740	20002A	8406R	$409.00
08-00741	20003A	N/A	$397.00
08-00742	20004A	10599R	$428.00
08-00743	20005A	N/A	$472.00
08-00744	20006A	10611R	$486.00
08-00745	20007A	N/A	$428.95
08-00746	20008A	10614R	$557.00

X-SERIES OIL COOLERS BY AIRFLOW SYSTEM

The first new aircraft oil cooler design in 50 years. Computer modeling and flight testing have been used to develop coolers that deliver significantly lower oil temps with no increase in oil cooler size or oil pressure drop. Designed as a direct replacement for popular oil coolers used in experimental aircraft, the X- SERIES oil coolers are built to Airflow Systems specifications and certified aircraft oil cooler standards.Flight testing on the popular RV series of aircraft has shown oil temperature drops of 10 -15 degrees F for coolers of the same size in the same location. Not FAA approved.

Model	Horsepower	PN	Price
2002X	Up to 150 hp	08-06153	$379.00
2006X	160 hp to 280 hp	08-06154	$524.00
2008X	280 hp to 390 hp	08-06155	$578.00

AIRFLOW SYSTEMS OIL COOLER DUCTS

P/N 08-07472

Super lightweight and strong hand laid fiberglass ducts designed using Computational Fluid Dynamics (CFD) software and flight testing to provide the best air pressure distribution over the face of the oil cooler. Mounting hardware and installation instructions provided. The new versions will have a gray "in mold" primer coating on them. The advantage to the customer is that there are no pin holes in the fiberglass and the almost-ready-to-paint finish.

Airflow Systems Part No.	Oil Cooler Application	Part No.	Price
ASOCP-O- 13 (0°)	13 ROW, 20006A, 2006X, 10611R, 08-00644	08-07472	$152.75
ASOCP-45-13 (45°)	13 ROW, 20006A, 2006X, 10611R, 08-00644	08-07473	$152.00
ASOCP-90-13 (90°)	13 ROW, 20006A, 2006X, 10611R, 08-00644	08-07474	$152.00
ASOCP-45-17 (45°)	17 ROW, 200008A, 2008X, 10614R, 08-00644	08-07476	$152.00
ASOCP-90-17 (90°)	17 ROW, 200008A, 2008X, 10614R, 08-00644	08-07477	$152.00

TUNDRA GROUND ADJUSTABLE OIL COOLER COVER

A new ground adjustable Oil Cooler Cover is now available for your Rotax 912 or HKS engine. Comes complete and ready to install. There's a better way to get your engine's oil temps back in the green, so get rid of that Duct Tape and cardboard!

PN 13-05602 ..... $73.60

AIRWOLF OIL CHILLER

The new Airwolf Oil Chiller is 20 aircraft quality aluminum fins that are precisely bent to mold around the outside of any standard oil filter. These fins total a whopping 600 sq/in of cooling area to suck the heat from your oil filter, thereby cooling your engine oil. The fins are gold anodized and quickly secured to the oil filter with two hose clamps. Easy on..easy off. Everything you need is in the kit. Lower your oil temperatures today with our "Poor Mans" oil cooler. P/N 08-07394 ..... $149.95

OIL THERMOSTAT SYSTEM

Designed to regulate the oil temperature on engines like the Rotax and Jabiru. If you are flying time and time again and the engine temperature is only getting to say 85°C the water will remain in your oil as a contaminant and can go on to destroy your engine with corrosion problems. Additionally, warmup is achieved very quickly on even the coldest of days because the thermostat diverts the oil flow from the oil cooler. Made in the USA these special oil thermostat units are designed to quickly allow your engine to reach and maintain its optimum operating temperature even on the coldest of days. CNC machined from 6061-T6 the unit is anodised with the type 2 surface finish to protect the thermostat long-term against corrosion. All of the hardware is aircraft grade and the oil thermostat unit is finished to the highest possible standards and is supplied with hose nipples to fit the most common oil tubing diameter used by Rotax and Jabiru. There are a number of benefits in using an oil thermostat in your aircraft which include fuel savings resulting from quick warmup times and engine operation at optimum oil temperature which also increases engine life because the engine is being operated at the correct oil temperature.

P/N 08-07212 ..... $146.95

ROTAX 912 13MM OIL COOLER HOSE

912 Oil Cooler Hose 13mm high heat hose for 912-914 oil coolers. Sold by the foot.

P/N 15-06907 ..... $7.50

OIL COOLER DUCT SYSTEM

This economical duct system provides the aircraft builder with a simple way to route cooling air to Stewart Warner style oil coolers. Manufactured from .040 aluminum, this kit was designed for use on RV series aircraft but is ideal for virtually any homebuilt using a firewall mounted oil cooler. Kit includes baffle duct, oil cooler duct, hardware, & installation instructions. P/N 08-05000 ..... $42.85 ea

ALUMINUM SIDE LOUVERS

These side louvers let hot air out of your engine compartment - or, if they are installed with the louvered openings facing forward, to bring cool air into the engine compartment, enhancing performance and service life of the engine and under-hood components. Helicopter owners often mount these over their oil ooler to let cool air in and help reduce operating temperatures. Complete with do-it-yourself instructions and hardware. Rest a set on your plane, hood or fender- see just how good they look! (2) 2-11/16" x 12-1/4"

Semi-Gloss Black ..... P/N 05-04969 ..... $99.00
Aluminum ..... P/N 09-04968 ..... $89.00

ALUMINUM COOLING LOUVERS

These aluminum cooling louvers are custom made and designed to improve the cooling of your engine compartment on your experimental aircraft. They are simple to install, and will dramatically lower your CHT temps, as well as your oil temperature.

The standard size of the aluminum plate is 12" long and 5" wide, and the outside flange can be trimmed to fit your application. There are a total of 9 louver slots which aid in cooling. P/N 08-07625 ..... $17.85

EP

OIL ANALYSIS KITS - ENGINE TREATMENT

AVIATION OIL ANALYSIS (AOA) KIT

A cost-effective service to enhance your aviation maintenance practices. Aviation Oil Analysis by ALS Laboratory Group's Tribology Division (formerly Staveley Services Fluids Analysis) brings you a state-of-the-art oil analysis program designed specifically for aircraft owners. Oil analysis is an early warning system that reduces downtime, lowers maintenance costs, and helps you spot troubling issues before they become serious problems. Aviation Oil Analysis has updated their packaging to reduce transit times and keep you up to date with your results. A small vial, mailing bag, and information form are furnished with order. Upon receipt at the laboratory in Phoenix, AZ, the oil sample is analyzed and a full report is forwarded within 24 hours. Note: insufficient postage will cause a delay in receipt of your sample, please consult your local post office or contact the laboratory (1-800-445-7930) regarding current postage rates.

Kit for Piston Engines ..... P/N 08-00436 ..... $12.95
Kit for Turbine Engines ..... P/N 08-00435 ..... $13.85

LAB ONE AVIATION (LOA) OIL ANALYSIS KIT

This kit includes a sample bottle, shipping container and the paperwork. Upon receipt, your sample will be processed within 24 hours with the results emailed or mailed from Lab One in Phoenix, AZ. Can be used on any reciprocating or turbine engine and helicopter transmissions and tail rotors

P/N 08-01222 ..... $12.95

AEROSHELL GREASES

Shell Aviation offers a range of aviation greases designed to fill almost every lubrication need of the aviation community.

Mineral Grease #5 (MIL-G-3545C)
P/N 08-05455 ..... $6.85
General Purpose Grease #6 (MIL-PRF-24139A)
P/N 08-05460 ..... $5.85
Synthetic Grease #7 (MIL-PRF-23827C)
P/N 08-05475 ..... $13.90
Mineral Grease/Helicopter #14 (MIL-G-25537C) ..... P/N 08-05480 ..... $7.50
Aeroshell Grease 14 6.6 Lb ..... P/N 08-13151 .... $15.55
Synthetic Grease #22 (MIL-PRF-81322G) ..... P/N 08-05490 .... $11.85
Synthetic Grease #22 6.6 lb ..... P/N 08-12236 .... $79.90
Synthetic Lithium Grease #33 (MIL-PRF-23827C) ..... P/N 08-00825 .... $16.50
Syn. High Pressure Grease #33MS(MIL-G-21164D) ..... P/N 08-00824 .... $16.60

LEVER ACTION GREASE GUN

Multipurpose grease gun. Uses 14 ounce cartridges, bulk loaded, or loaded through a dispenser. Comes with 6" nozzle and 9" flex hose

P/N 08-07180 ..... $23.50

MOBIL GREASE 28

Mobilgrease 28 meets the quality level of U.S. Military Specification MIL-G-81322E, General-Purpose, Aircraft, and is approved against U.S. Military Specification DOD-G-24508A (Navy) for shipboard auxiliary machinery. It can be designated U.S. Military Symbol WTR and NATO Symbol G-395.

Grease 28 ..... P/N 08-06157 ..... $12.23
Case ..... P/N 08-07400 ..... $489.00

EXXON MOBIL GREASE 33 (CARTRIDGE)

Mobligrease33 is a true multipurpose aviation grease intended for use in highly loaded anti-friction bearings, gears, and actuators as well as instruments, high speed bearings (though not recommended for wheel bearings), and general airframe lubrication, over operating temperatures from 100° F to 250° F.

Cartridge..... P/N 08-07407-1 ..... $13.95 Case ..... P/N 08-07407 ..... $558.00

ISOFLEX GREASE FOR ROTAX ENGINES

Synthetic long-term lubricating grease for a wide service temperature range. Low starting and running torque. Good wear protection Good corrosion protection. Resistant to oxidation and ageing. 400 gram cartridge.

P/N 15-08430 ..... $163.00

POLY-FIBER ESO ENGINE STORAGE OIL

A fine lubricating and preservative oil used to prevent corrosion in internal combustion engines during extended storage. MIL-1-21260.

Quart ..... P/N 09-42450 ..... $24.00
Gallon ..... P/N 09-42455 ..... $89.00

PHILLIPS 66® AVIATION ANTI-RUST OIL

Helps perserve aircraft piston engines during periods of inactivity. For planes that are infrequently flown, we recommend replacing up to 10% of the crankcase volume with Aviation Anti-Rust Oil 20W-50 protects against corrosion.

Gallon ..... P/N 08-07401-1 ..... $32.85
Case (46 Gal) ..... P/N 08-07401 ..... $124.75

VPCI-326™ CORROSION INHIBITOR OIL ADDITIVE

An approved Lycoming engine oil additive for prevention of oxidation of all metals. Designed for use in engine oil at 1:10 concentration, VpCI™ (Vapor Phase Corrosion Inhibitors) will protect your engine from corrosion (in solution and in all void spaces) for up to 3 years during storage. For hydraulic oil and gearbox assemblies. Performs effectively under the adverse conditions of 100% relative humidity, and in the presence of such corrosive species as chlorides, sulfur compounds or hydrogen sulfide. There are no hazardous chromates, nitrites or phosphate inhibitors, and it utilizes the finest paraffinic petroleum distillates as carriers. Possesses an exceedingly high flash point, enhancing in-plant safety when compared to common oil protectants. It comes in concentrate form, which is easily diluted with lubricating, hydraulic or preservative oils, saving shipping and inventory expense. Not only effective on ferrous metals, but also effective on zinc, aluminum, galvanized steel, copper, cadmium, silver, brass and many other alloys. Can be upgrade most lubricants in their anti-corrosion ability. Passes through 1 micron filter. Conforms to MIL-PRF-46002C. Conforms to MIL-l-85062 (Additives to oils). Conforms to MIL PRF-16173E. • NATO 6850-66-132-6100. • NSN 6850-01-470-3358 P/N 09-02002 ..... $19.75

CAMGUARD OIL ADDITIVE

Designed to dramatically improve the performance of all mineral based , semi-synthetic and fully synthetic motor oils in the areas of corrosion protection, wear reduction, and seal protection. Designed to make regular engine oil what it needs to protect and lubricate any engine. A synergistic blend of advanced oil additives from all over the world, designed to reduce wear, curb deposit formation and more importantly protect engines against rust and corrosion. It contains multiple corrosion inhibitors for both ferrous and non-ferrous metals. A combination of ashless anti-wear compounds, anti-oxidants designed to reduce carbon deposits and special seal conditioners to prevent oil weeping. Camguard is FAA accepted and approved for use in piston engine aircraft oils meeting SAE-1899 standards. Compatible with piston aircraft oils, passenger car motor oils, most marine oils, and heavy-duty diesel oils.

Camguard aircraft oil additive 1 pint ..... P/N 08-07096..... $24.50
Camguard aircraft oil additive Case of 4 pints..... P/N 08-07097..... $93.50
Camguard aircraft oil additive Case of 12 pints ..... P/N 08-07097-1....$263.95
Camguard auto oil additive 8 oz.bottles ..... P/N 08-12126..... $14.50
Camguard auto oil additive Case of 4..... P/N 08-12126-1....$325.00
Camguard marine oil additive 8 oz..... P/N 08-01217-1..... $14.95
Camguard marine oil additive Case of 4..... P/N 08-12127..... $358.80
Camguard Small Engine Supplement(pint)..... P/N 08-07402..... $12.50

MOBIL AGL SYNTHETIC AVIATION GEAR LUBRICANT

Mobil AGL Synthetic Aviaion Gear Lubricant offers measurably better wear protection for transmissions operating at high temperatures than Type I (MIL-L-7808) and Type II (MIL-L-23699) turbine oils, as well as wear resistance that is especially beneficial to military and other helicopters operating under unusual stresses. Mobil AGL is formulated with synthesized hydrocarbon-based fluids. The combination of a naturally high viscosity index and a unique proprietary additive system help enable the gear lubricant to provide outstanding performance in extreme service applications at high temperatures, well beyond the capabilities of mineral oils. Note: Exxon-Mibil recommends Mobil AGL for use in helicopter transmissions only. Before using Mobil AGL, operators should confirm the OEM's approved transmission lubricants. Size: 5 Gallon.

P/N 08-07406 ..... $347.00

MICROLON AIRCRAFT ENGINE TREATMENT

One-time metal treatment that virtually eliminates friction in all internal combustion engines which improves performance (horsepower), reduces wear, and extends engine life. Also decreases fuel consumption, reduces oil consumption, and lowers operating temperatures. Impregnates the engines bearing surfaces, forming a dry film lubricant that lasts no matter how many times the oil is changed. Continental A-65, C-85, and C-90 engines take the Half Kit. Most Lycoming and Continental engines used in light aircraft take the Single Kit. Turbocharged and Radial engines take from 2 to 6 Single Kits. Call for details if you have any questions on the quantity of Microlon needed for your application.

Microlon CL-100 Aircraft Kit (Single) ..... P/N 09-35805 ..... $119.95
Microlon CL-100 Aircraft Kit (Half) ..... P/N 09-35810 ..... $75.50

AEROSHELL AVIATION OILS

Aeroshell W100 is an ashless, SAE 50 dispersant oil that provides excellent service in all four cycle aircraft piston engines. Aeroshell W Multigrade 15W-50 is an antiwear, ashless, dispersant, semi-synthetic oil. It is fully approved in all Lycoming, Continental, and Pratt & Whitney aircraft piston engines. Reduces engine wear, fuel consumption, and oil consumption. Helps engines start faster and eliminates the need for seasonal oil changes. Aeroshell W100 Plus contains additive LW16702 which reduces engine wear and corrosion. Ideal for operations in mild to warm temperatures. Aeroshell W100 & SAE 50 oils meet MIL-L-22851C specification. Aeroshell Turbine Oil 500 provides superior high temperature corrosion protection & excellent anti-wear protection. Shell Oil W80 Plus introduces the anti-wear and anti-corrosion additives of AeroShell W100 Plus engine oil into a lighter, single-grade oil for use in colder climates. The anti-wear additive reduces wear on start-up by forming a microscopic layer on the engine's moving parts to prevent metal-to-metal contract when there is little oil present. Combined with a corrosion inhibitor, it is designed for pilots who fly either in cooler weather or less frequently.

AeroShell W65 oil was produced to meet fully the SAE specification J-1899 (Grades SAE 30, 40, 50, and, 60 respectively). Promotes engine cleanness. the non-ash forming, polymeric additive was eveloped to help eliminate the harmful combustion chamber deposits that occur during normal operation.

Description	Qt. P/N	Price/Qt.	Case P/N	Price/Case
W80 Plus	08-05920	$6.75	08-05919	$74.00
W80	08-00884	$5.95	08-01223	$69.95
W100 SAE 50	08-05400	$5.95	08-05401	$68.75
15W-50 Multigrade	08-05450	$7.65	08-05451	$84.00
W100 Plus	08-05485	$6.50	08-05486	$74.00
Turbine Oil 500	08-00581	$10.95	08-00582	$284.95
100 SAE 50 Mineral Oil	08-05410	$5.75	08-05411	$67.95

AEROSHELL OIL SPORT PLUS 4

AeroShell Oil Sport Plus 4 is ideal; as it is extremely resistant to the immense sheer forces that occur in areas of high-pressure contact such as high-speed gearboxes, valve trains, bearings, pistons and liners. This is where the blend of base oil and additives is most crucial. AeroShell Oil Sport Plus 4 is made up of a blend incorporating synthetic technology and high performance additives to provide long lasting protection. In addition, detergents in the oil keep important areas, such as the pistons and cylinders, clear of carbon based particles that tend to adhere to these surfaces. So when you change your oil to new AeroShell Oil Sport Plus 4, you are not only removing dirt from your engine, you are also replenishing the additives used to protect your engine during normal operation. DO NOT use AeroShell Oil Sport Plus 4 in engines that are designed to use Ashless Dispersant aviation piston engine oils such as AeroShell W Oils. This includes air cooled Teledyne Continental Motors, Textron Lycoming and Jabiru engines.

4 Cycle Sport Plus 4 Oil (Case of 12)..... P/N 08-07047.....$112.75

PHILLIPS 66 X/C AVIATION OIL

X/C oils provide easy starting and quick lubrication under low temperature conditions. Provides film strength and low wear under high temperature conditions. Provides excellent protection against engine deposits, ring groove carbon, piston lacquer, crankcase sludge and oil oxidation. Contains ashless dispersant which keeps engine clean. With more than 10 years of outstanding field performance, X/C oil meets Avco-Lycoming & Teledyne Continental engine specifications.

Description	Qt. P/N	Price/Qt.	Case P/N	Price/Case
X/C 20W-50 Av. Oil	08-05300	$6.50	08-05301	$69.85
20W-50 Mineral oil	08-05310	$5.85	08-07198	$66.95

XC 20W50 oil 55 gallon drum..... P/N 08-07506 .....$1,068.00

PHILLIPS 25W-60 ENGINE OIL GALLON

X/C 25W-60 is the first and only multiviscosity aviation oil designed and approved for radial engines originally designed to run on 120 grade. Pilots and mechanics will notice immediate benefits with X/C 25W-60 over single grade oils. Benefits such as improved oil flow at startup, quicker warm-up time, cooler operating temperatures and a cleaner operating engine. X/C 25W-60 also has proven corrosion protection in extreme conditions. X/C 25W-60 can be used year-round, during break-in and on to TBO. P/N 08-00885.....$24.50

EXXON ELITE AVIATION OIL

Exxon Elite™ 20W-50 is a multigrade oil with the flexibility to lubricate effectively over a wider range of temperatures than monograde oils. Compared to a monograde oil, a multigrade oil provides better cold-start protection and a stronger lubricant film at typical operating temperatures. Other benefits include lower oil consumption and better fuel economy as a multigrade oil, Exxon Elite™ 20W-50 has all these intrinsic advantages. • Meets SAE J1899 • Meets MIL-L-22851D (obsolete) •U.S. military approved • Contains anti-wear/anti-scuffing additive required by some Lycoming engines • FAA approved fluid for Alternative Method of compliance w/AD-80-04-03-R2, paragraph b.1

Quart..... P/N 08-00392..... $8.75 Case..... P/N 08-00432 .....$89.00

AEROSHELL AVIATION OIL W120 SAE 60

An ashless dispersant oil specifically developed for aviation piston engines. It combines non-metallic additives with selected high viscosity index base oils to give exceptional stability, dispersancy and anti-foaming performance. Based on the average ambient outside temperature at engine start-up the most common grades are SAE 40, SAE 50 and SAE 60, which equates to AeroShell Oil W80, W100 and W120 respectively. Traditionally, the choice is associated with climatic zones - AeroShell W80 for cold climate regions (-17 - 21°C), AeroShell Oil W100 for temperate regions (15 - 30°C) and AeroShell Oil W120 for warmer climates (above 26°C).

5 Liter.....P/N 08-00344-1 ..... $29.50

Case (3 - 5 Liter Bottles).....P/N 08-00344 ..... $89.90

AEROSHELL AVIATION OIL 80 SAE 40 MINERAL OIL

AeroShell Oil 80 straight mineral oils blended from selected high viscosity index base oils. These oils do not contain any additives except for very small amounts of pour point depressant (which aids to improve fluidity at very low temperatures) and an anti-oxidant. AeroShell Oil 80 approved for all aviation piston engines of civil aircraft when the use of an oil not containing a dispersant additive is required; however, they should also be used during the break-in of a new aviation piston engine or those recently overhauled.

1 Quart.....P/N 08-07507-1 ..... $5.75

12 Quart Case.....P/N 08-07507 ..... $67.95

AEROSHELL DIESEL ULTRA

AeroShell Oil Diesel Ultra is a fully synthetic, multigrade engine oil designed for use in the new generation of compression ignition (Diesel) Aviation Piston Engines. The formulation has been selected to be suitable in piston engines fuelled by Jet A or Jet A-1 and is designed for use in the latest highly rated turbocharged diesel engines under all operation conditions. AeroShell Oil Diesel Ultra MUST NOT be used in spark ignition, or Avgas powered aircraft engines.

Quart.....P/N 08-10754 ..... $14.95

Case.....P/N 08-10754-1 .....$169.00

LINKITE AVBLEND LUBRICANT

An oil supplement for all piston engine-powered aircraft owners and operators worldwide. Providing critical lubrication at start-up, AvBlend helps prevent accumulation of combustion chamber areas. Wear is reduced, engines stay cleaner and combustion chambers stay properly sealed. FAA approved. 4-cylinder engines require 1 can at each oil change, and 6 cylinder engines require 2 cans.

12oz. can ..... P/N 08-05470 ..... $14.50

1Case (24 cans) ..... P/N 08-05470-1 .....$319.00

LYCOMING OIL ADDITIVE

Avco Lycoming has approved oil additive LW-16702 that contains an anti-scuffing agent and can dramatically reduce engine wear. This additive is applicable to all Avco Lycoming piston aircraft engines, and factory recommends use at every oil change or every 50 hours, whichever occurs first. For 6-8 qt. sump, use one 6 oz. can, for 12-15 qt. sump, use (2) 6 oz. cans, for 17-19 qt. sump, use (3) 6 oz. cans, for 23 qt. sump, use (4) 6 oz. cans. P/N 08-05600 ..... $31.95

PENNZOIL OIL

Two-cycle oil for air-cooled engines. Recommended by engine manufacturers for air- and water-cooled engines.

8oz. Single Bottle..... P/N 08-06261.....$1.95

Case of 8 oz. Bottles..... P/N 08-06260.....$45.50

AVIATION GAS TURBINE OILS

Case quantities are 24 quarts.

Oil	Qt. P/N	Price	Case P/N	Price
Aeroshell Turbine 500	08-00581	$10.95	08-00582	$284.95
Aeroshell Turbine 555	08-00757	$11.95	08-00758	$289.00
Aeroshell Turbine 560	08-00759	$12.95	08-00760	$348.00
British Petroleum 2380	08-00761	$17.50	08-00762	$398.00

MOBIL JET OIL II (AVIATION)

Mobil Jet Oil II helps keep oil systems clean. That can mean less maintenance more flying and greater revenue. Mobil Jet Oil II has a history of helping to keep aircraft where they belong - in the air generating revenue. Today, about 160 major airline use Mobil Jet Oil II in more than 11,000 gas turbine engines.

QT. ..... P/N 08-00763 ..... $15.65

Mobil Jet II Case..... P/N 08-00764 .....$357.00

MOBIL JET OIL 254

Mobil Jet Oil 254 is a third-generation synthetic lubricant made from a specially prepared hindered-ester base stock fortified with a special chemical additive package. The result is a product having superior thermal and oxidation stability that resists deterioration and deposit formation, while maintaining the physical characteristics required by builder and military specifications.

QT.....P/N 08-07374-1 ..... $17.35 Case ..... P/N 08-07374 ..... $417.00

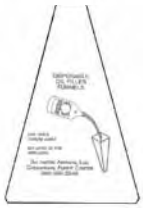
EP

CLEAN FUNNEL™

Clean Funnel™ is the funnel that keeps itself clean. Replacing the caps on each end after each use prevents left over fluid from dripping out, and keeps your work area or baggage compartment clean. No need to wipe your funnel out with a rag before reusing. Clean Funnel™ is ideal for use with fuel or oil as well as windshield washer fluid, detergents, antifreeze, hydraulic fluid, and more. Great for aircraft, automobiles, motorcylces, tractors, boats, ATV's snowmobiles, and more.

- Model 112 (turquoise) has a 1 pint fluid capacity and a 12" vinyl tube attached to its spout, making it very handy to reach into small or tight spaces.
- Model 415 (red) has a 1-1/2 quart capacity, 17" long with flexible spout, and spout I.D. is 9/16".
- Model 428 (black) has 1-1/2 quart & 13-1/4" long with a flexible spout and 1-1/8" O.D. spout.

Model #	Color	Part No.	Price
112	Turquoise	12-00374	$7.80
415	Red	12-00375	$9.80
428	Black	12-00376	$9.80



DISPOSABLE FOLDING OIL FUNNELS

These disposable funnels are very popular among aircraft owners and pilots for adding engine oil. They store flat, clean and dry in a recloseable bag, and eliminate the messy cleaning when using a regular funnel. Also ideal for brake fluid, resins, and paints. Furnished in pack of 10 funnels.

Pack of 10 ..... P/N 08-00040 ..... $3.35

OIL DRIP PAN

The drip pan is 54-1/2" x 32-1/2" x 2" and is manufactured out of an extremely durable and chemical resistant plastic (high density polyethylene). White in color, our drip pan is neat and clean in appearance and allows for easy visual inspection and monitoring of any engine leaks. The size and design of the drip pan will collect virtually any leaking fluids and eliminate the need for five quart pails and other messy collection containers. It is also a convenient place to pour fuel samples. Specifically designed for general aviation.

P/N 08-06700 ..... $148.50

OIL DRIP PANS

These developed oil Drip Pans are designed to protect floors from those irritating drips of oil, fuel and hydraulic fluid. They are overlapping to prevent drips from getting between the pans. Their interlocking feature allows various pan sizes to be joined, protecting floors from all shapes and sizes of aircraft. Their lightweight and durable plastic design makes for easy set-up and clean-up. The interlocking feature allows various pans to be joined, protecting floors from all shapes and sizes of aircraft, cars, buses, trucks and more! "

18" X 48" Interlocking ..... P/N 08-07508 ..... $29.95
24" X 30" Interlocking ..... P/N 08-07378 ..... $29.95

DRIP PAN OIL ABSORBANT PADS

DripPansUSA Oil Absorbent Pads Absorb: oil, coolants, transmission fluids, other hydroid fluids, and water. Can also be used under and around machinery, as shelf liners, and for other clean-up applications. Made of durable blown polypropylene and have many other uses around the home and shop. DripPansUSA Oil Absorbent Pads are made of a minimum of 40% recycled polypropylene. Available in 6pk, 8pk and 12pk sizes. DripPansUSA Oil Absorbent Pads are made in the USA.

6 Pack ..... P/N 08-07510 ..... $7.95
8 Pack ..... P/N 08-07511 ..... $9.95
12 Pack ..... P/N 08-07512 ..... $13.95

DRIP TRAP - OIL ABSORBENT

Drip Trap is a mat made of corn stalks which captures oil, coolant, and other aviation fluids that can drip from the aircraft. Drip Trap measures 20" x 20" and can absorb up to 6 quarts of oil. It won't blow away, can be driven on, won't tip over like a drip pan, and can be walked on without tracking the fluids on the hangar floor. Excellent for use with aircraft, cars, SUV's, trucks, motorcycles and in shops. When Drip Trap is fully saturated just dispose of it and replace. Drip Trap is the environmentally friendly and economical way to capture and contain drips and spills.

P/N 13-04950 ..... $22.95

OIL SAVER FUNNEL

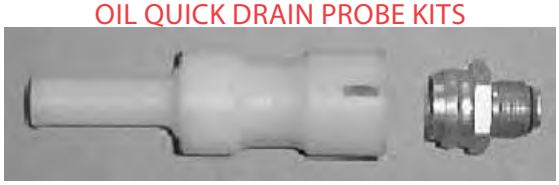
The OIL-SAVER is simple in appearance, but a great deal of research has gone into its design. It consists of a basic rectangular funnel that's molded to hold six inverted oil bottles, the contents of which gradually drain out and into the depository of choice -- usually another oil bottle, leaving the plastic bottles clean enough for recycling.

And with thousands of funnels already in use, they have proven to be versatile, practical tools that allow you to save money and recycle.

Features: Innovative, Customer Friendly, Multi-purpose Containment Residual Liquid Reclamation, Pro-active, Money-making Design, Exceeds Recycling Standards, Convenient Storage, Global Application, No Assembly Required, Green / Enables Consumer to Take Pre-emptive Steps to Protect the Environment.

Color	Part No.	Price
Red	08-07391	$12.95
Orange	08-07533	$12.95
Yellow	08-07534	$12.95
Green	08-07535	$12.95
Blue	08-07536	$12.95
White	08-07537	$12.95

OIL QUICK DRAIN PROBE KITS



STC SA4024NM - Drain oil in wind or shop with little clean up. - Save money on clean up, solvent, labor and parts. - Oil goes into bucket with out splashing or spilling.

Approved for Cessna Aircraft Models: 210J through 210 R, T210J through T210R, P210H through P210R, 337 through 337H, T337B through T337H, and P337H 310 through 310R, T310P through T310R 320 through 320F, 340, and 340 A401 through 401B, 402 through 402C, 404, 411, 411A, 414, 414A, and 421 through 421C

Description	Part No.	Price
Single Engine Cessna Oil Quick Drain Kit Includes:, 1 STC Paper Work, 1 Probe, 1 Valve With o-ring, 1 AN900-10 Gasket	12-02101	$286.95
Twin Engine Cessna Oil Quick Drain Kit Includes: 1 STC Paper Work, 1 Probe, 2 Valve With o-ring, 2 AN900-10 Gasket	12-02102	$490.00
Nylon probe only	12-03289	$73.50

EXXON OIL BOTTLE ADAPTER

This adapter allows easier pouring from the large mouth Elite oil bottles in certain aircraft and includes a built-in valve to allow the flow of oil to be regulated.

P/N 08-01042 ..... $3.95

OIL SPOUT WITH ON-OFF VALVE

Patented On/Off valve. Adjustable flow. No-mess... No-spill. P/N 14-00024 ..... $6.95

SUPER FLEXI-SPOUT

Works great for hard to reach areas. Dual threading fits most sized containers. Perfect for adding motor oil, anti-freeze, transmission and whidshield washer fluid.

P/N 14-00707 ..... $3.20

OIL BUDDY (NO SPILL)

For do it yourself oil changes or refilling small tanks in lawn mowers, snowblowers and chain-saws, Oil Buddy is your best tool. Eliminating the messy cleanup and spillage problems, Oil Buddy gets the job done fast and easy without getting your clothes dirty. For small fill ups, the Oil Buddy screws onto the head of the oil container and can be left there for further use if the bottle is still partially full. When the valve is closed, oil can't get out and dirt can't get in. Even if the oil container gets knocked over, no spillage will occur. Fits most 1-Quart /1-Litre bottles. P/N 13-03144 ..... $2.75

OIL AND OIL FILTER RECYCLING CONTAINERS

Distinctive Features: • Attractive, user-friendly design •Wide-mouth drain pan / lid make oil changing easy and neat. Snug-fitting top prevents spillage. • Large capacity. • Holds oil and filters for at least two average oil and oil filter changes. • Size: 4-1/2 gallons. Color: Yellow •Unique filter tray. •Filters drain on tray allowing for clean handling and removal. • Environmentally friendly. • Container's lid and tray are made of post-consumer recycled plastic.

P/N 08-04975 ..... $13.85

EVANS NPG + COOLANT FOR ROTAX ENGINES

NPG+ is new coolant providing dramatic improvements in heat transfer and viscosity that make the new fluid a "pour-in," not requiring changes to cooling system components. NPG+ waterless coolant virtually eliminates boil over in gasoline or diesels - the waterless coolant allows engines to tolerate running hotter, without boiling over, and allows the cooling system to run at very low or no pressure. Because there is no water in the system engines operating with NPG+ will be free from corrosion and electrolysis, and the engines will run well no matter how hard they are driven or how hot or cold the environment is. Specified coolant for Rotax Aircraft Engines, Type 912 and 914 (series). P/N 08-04535 ..... $38.24

EVANS PREP FLUID

Evans Waterless Flush is used when systems cannot be drained properly of all the conventional water and antifreeze. Suggested to be used with experimental aircraft conversion and all motorcycle, ATV and import cars. Not intended to be used as a coolant.

P/N 08-04534 ..... $29.75

OIL INJECTION / WATER OVERFLOW RESERVOIRS

High density polyethylene tanks; ideal for Oil Injection Reservoir or Coolant/Water Overflow. Translucent white color easily shows fluid level. Tank is blown molded with a 1/4" thick seamless construction and includes rugged mounting tabs that mount to any flat surface. Includes a threaded 2-1/4" vented cap with tether to prevent loss. Sealed tank without drain, bottom access is easy for either push in fittings or threaded bulkheads with plenty of access thru large cap opening.

1 Quart: 7.74" high x 6.2" wide x 1/4" thick. Weight 10 oz. **Includes 1/4" barb spigot molded on bottom** P/N 15-06828 ..... $28.75

1.5 Quart: 7.74" high x 5.9" wide x 1/4" thick. Weight 12 oz. P/N 15-06830 ..... $11.50

2 Quart: 5" high x 6" wide x 1/4" thick. Weight 8 oz. P/N 15-06936 ..... $17.95

4 Quart: 8-1/2" high x 6" wide x 1/4" thick. Weight 20 oz. P/N 15-04841 ..... $19.85

Accessories

Reservoir Tank Cap with Seal - 2-1/4" ..... P/N 15-05092 ..... $2.95
Nylon Vented Cap - 2-1/4" ..... P/N 15-06936-1 ..... $3.40
Oil Water Reservior Only ..... P/N 15-06936-2 ..... $15.75

PROLUBER ENGINE PRE-OILER

ProLuber is a device that is added on to your oil system to give you pre-start oil pressure. You just turn on the ProLuber for a couple of seconds, watch your oil pressure gauge rise, and then start the engine when the pressure reaches the desired level. It is able to generate 40-60 lbs. of oil pressure in your engine before you hit the ignition switch. Simple to install and requires no drilling through your oil pan or the block. Complete kit for installation.

P/N 08-00197 ..... $438.00

NEXT AIRCRAFT SERVICE DUE - STICKERS

Service reminder decal "NEXT AIRCRAFT SERVICE DUE" decal is black text on white semigloss background with "FILL IN" blanks. Removable decal is designed to adhere to any surface and not leave residue behind, perfect for aircraft rentals, owners, CFI's, trainers, service/repair stations, POH, log books, instrument panels, windows. Decal measures 3" x 3". Blank fields include: • Tail Number • Oil and Filter Change (Last and next hour and date)• Annual Inspection Due Date (Month and Year) • ELT Battery Due Date (Month and Year) • Transponder Test / Inspection Due Date (Month and Year) • Altimeter & Static System Test Due Date (Month and Year) • 100 Hour Inspection (Last and Next) P/N 09-02137 ..... $0.45

AV-2 AVIATION 2-CYCLE OIL

AV-2 Aviation 2-Cycle Oil is a low-smoke formula specially formulated for Rotax Aircraft Engines.

For over 12 years, AV-2 has proven its formula to be superior, not by exaggerated claims or hyped advertising, but by literally millions of trouble free flight hours. The custom blend of 50% high quality mineral base and 50% synthetic oils is designed to lubricate vital engine parts without leaving carbon deposits. AV-2 also protects your engine against rust & corrosion even during prolonged storage, a protection not found in straight synthetic oils. AV-2 is specially formulated for use in "Dykes" ring equipped Rotax Aircraft Engines.

Gallon ..... P/N 15-04992 ..... $29.95

AV-9 FOUR STROKE OIL 10W40

Rotax 4 stroke, 4 cylinder engines require special protection from high temperatures and gear wear. The semi-synthetic blend of our AV-9 is specially formulated to handle the unique operating conditions found in Rotax 4 cylinder engines with built-in gearboxes. Gearbox components are protected from premature failure with blended additives found in AV-9. The semi-synthetic blend will also suspend lead from aviation fuels. Specially formulated and blended, AV-9 is the ideal choice for Rotax 4 cylinder 4 stroke engines.

32 oz. ..... P/N 15-04994 ..... $7.65

EP

PIG® OIL ABSORBENT PRODUCTS

PIG® LIGHT WEIGHT OIL ONLY ABSORBENTS

Hangs anywhere, goes anywhere! Grab one Pad or the whole tablet to clean up an oil-based spill or splatter in any corner of the shop. Durable PIG® Oil-Only Mat quickly soaks up gas and oil but won't waste absorbency on water like rags or floor sweep! • Safely absorbs and retains oils and oil-based liquids—including lubricants and fuels—while actually repelling water. • Floats to clean up oil-based liquids on water. • Use outdoors or indoors during inclement weather to avoid wasting capacity on rain and melted snow. • Self-extinguishing material helps eliminate fire hazards; melts instead of burning if contacted by direct flame.

*15 each 14"x14.25" Pads ..... P/N 08-07319 ..... $12.85
100 each 15"x20" Pads ..... P/N 08-07317 ..... $47.90
15"x50 ft. Roll ..... P/N 08-07320 ..... $19.95

PIG® MEDIUM WEIGHT OIL ONLY ABSORBENTS

Clean up oil-based spills without wasting absorbency on water. Unlike rags or floor sweep, PIG® Water-Repellent Oil-Absorbent Mat quickly soaks up gas and oil but repels water from rain, slush, washdowns, ponds and sumps and more! • Safely absorbs and retains oils and oil-based liquids—including lubricants and fuels—while actually repelling water. • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated • Exclusive dimple pattern speeds wicking of liquid toward dry spots on pad, so messes disappear fast, cleanup is simple and you use each pad to full capacity.

*3 each 15"x20" Pads ..... P/N 08-07354 ..... $4.85
100 each 15"x20" Pads ..... P/N 08-07318 ..... $63.85
30"x150 ft. Roll ..... P/N 08-07321 ..... $89.95

PIG® UNIVERSAL LIGHTWEIGHT ABSORBENTS

This Tablet goes anywhere to clean up drips, spills or splatters throughout the shop. Easier to use than floor sweep, so it reduces cleanup time. And with no damaging dust and grit to track around, the shop stays cleaner! • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated •Exclusive dimple pattern speeds wicking of liquid toward dry spots on Pad, so messes disappear fast, cleanup is simple and you use each Pad to full capacity • Convenient pop-up tabs let you hang the Tablet anywhere you need it

*15 each 14"x14.25" Pads ..... P/N 08-07314 ..... $12.75
100 each 15"x20" Pads ..... P/N 08-07312 ..... $62.75
15"x50 ft. Roll ..... P/N 08-07315 ..... $21.90

PIG® MEDIUM WEIGHT UNIVERSAL ABSORBENTS

Genuine PIG® Mat is the better way to soak up drips, spills and splatters, and spend more time repairing vehicles. Easier to use than floor sweep so it reduces cleanup time. And with no damaging dust and grit to track around, the shop stays cleaner! • Safely absorbs and retains oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated • Use Medium-weight Pads for persistent leaks and mid-sized spills; strong enough to last all day at workstations, in service bays or under equipment.

*3 each 15"x20"Pads ..... P/N 08-07353 ..... $4.50
100 each 15"x20" Pads ..... P/N 08-07313 ..... $74.75
30"x150 ft. Roll ..... P/N 08-07316 ..... $118.95

PIG® UNIVERSAL ABSORBENT SOCKS

Wrap flexible, self-contained PIG® Socks around tanks, drum areas and puddles to halt the spread of liquid while the Socks' thirsty absorbent filler absorbs it. Easier to use and clean up than messy floor sweep! • Moldable Socks surround equipment, drums or tanks and contain spills to keep them from spreading into walkways; also great for catching liquid that seeps under overhead doors • Contained absorbent makes cleanup quick and easy • Thirsty 100% PIG® Mat filler; polypropylene is highly absorbent and chemical resistant • Polypropylene skin is chemical and tear resistant; reduces dust and holds in liquid, even when fully saturated • Safely absorbs and retains oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids.

*2 Universal Socks ..... P/N 08-07324 ..... $9.95
12 Universal Socks ..... P/N 08-07327 ..... $39.85
12 Water Eepelling Socks (oil only) ..... P/N 08-07325 ..... $59.50

* Designates item pictured.

PIG® FORM-A-FUNNEL® DRAINING TOOLS

This handy tool guides oil around skid plates and cross members right into your oil drain for guaranteed no-mess oil changes! It quickly bends, molds and holds any shape, so you can customize the perfect channel to drain liquids without making a mess. • Thick, pliable nitrile rubber coating is highly compatible with common automotive fluids and works in temperatures from -30°F to 450°F . • Edges can be molded around filters or drains to create a leakproof seal; Tool stays in place for hands-free draining and channeling • Cleans easily with cleaners and degreasers; stores flat or rolls up to take along in your tool box or glove compartment • Great for draining oil and other fluids from any type of vehicle or equipment, including cars, trucks, motorcycles, aircraft, boats, forklifts, generators, snow blowers, mowers and more.

*14.5"x6.5" Funnel ..... P/N 12-03147 ..... $19.95
29"x5" Funnel ..... P/N 12-03148 ..... $29.95

PIG® UNIVERSAL LIGHT WEIGHT ABSORBENT DRUM-TOP PADS

Eliminate messy drum storage areas without touching a mop or rag! Precut to fit on 55-gallon drums, PIG® Drum-Top Pads quickly absorb drips or overfills to help keep your shop clean and safe, so you can focus on repairing vehicles. • Precut with holes for 3/4" and 2" bungs to provide a perfect fit on steel 55-gallon drum tops • Eight layers of 100% polypropylene are thermally bonded to make PIG® Mat the strongest mat on the market; won't rip, fray or fall apart, even when saturated • Highly absorbent material traps liquids, so it won't drip or leave behind fibers when you pick it up; spend less time collecting used absorbent between jobs.

5 Pads ..... P/N 08-07328 ..... $11.50
20 Pads ..... P/N 08-07329 ..... $37.50

PIG® MAGNETIC ROLL HOLDER

Keep your PIG® Mat within an arm's reach for easy access and hassle-free dispensing. The PIG® Magnetic Roll Holder attaches to any metal surface to keep Mat off the floor and close at hand. • Holds one 15"W x 50'L PIG® Mat Roll (P/N 08-07320 or P/N 08-07315) for easy one-hand dispensing• Durable, powder-coated steel resists chips, rust and corrosion • Powerful magnets keep Roll Holder firmly in place during dispensing; can be removed and relocated in seconds.14.5" Magnetic Roll Holder ..... P/N 08-07331 ..... $29.85

PIG® VERTICAL ROLL HOLDER

Dispense PIG® Mat the convenient way with this handy roll holder! Its free-standing, locking metal frame adjusts to accept a wide variety of rolls and is collapsible for compact storage. • Adjust center bar to change width; choose 16" to save space and keep small rolls from sliding or 33" to maximize PIG® Mat supply • Folds for storage in tight spaces; locks open for hassle-free moving • Tilted design positions Mat roll above rear support for enhanced stability when dispensing • Durable painted steel resists rust and corrosion for long life.

Mat Roll Dispenser ..... P/N 08-07332 ..... $69.85

PIG® UNIVERSAL SPILL KIT

Respond to spills fast so you can get back to work. Our hi-viz Kit has the supplies you need for quick cleanups, and it's so affordable you can stock every spill-prone spot in your shop or stash one in each fleet vehicle for better liability protection! • Moldable Socks surround equipment, drums or tanks and contain spills to keep them from spreading into walkways; also great for catching liquid that seeps under overhead doors • Mat Pads and Socks safely soak up and retain oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids • Bright nylon Bag stands out, so you can find it when you need it; makes a great "insurance policy" and simplifies reg compliance.

Universal Spill Kit ..... P/N 08-07326 ..... $43.75

PIG® TRAFFIC MAT® RUG

Help keep extreme-traffic walkways dry and safe with this highly durable, absorbent Rug. Heat-fused TRAFFIC MAT® Rug won't rip or fray, even under wheeled traffic, so it's perfect for ensuring heavy-use, splash-prone areas stay clean and injury free. • 100% polypropylene material is heat fused and needle punched for incredible durability; won't ball or fray, even under wheeled traffic • Roll out to add traction and absorbency near parts washers, paint areas, work benches, doorways, service bays and other high-wear areas • Safely absorbs and retains oil, coolants, water, grease, gasoline, solvents, auto fluids, paint overspray, battery acid and most other liquids • Self-extinguishing material helps eliminate fire hazards; melts instead of burning if contacted by direct flame.

*36"x150 Ft. Standard Mat ..... P/N 08-07322 ..... $132.95
36"x100 Ft. Polybacked Mat ..... P/N 08-07323 ..... $179.50

ULTRALIGHT ENGINE ACCESSORIES

SPARK PLUG CADDY

Handy case holds (2) 14mm spark plugs. Small enough to fit into your pocket.

P/N 13-03869 ..... $3.35

SPARK PLUG WRENCH

Loosen or tighten your spark plugs with this handy tool.

P/N 13-03921 ..... $2.95

PLASTIC STARTER HANDLE

Black flexible plastic heavy duty handle.Tested to –40°F

P/N 13-03865 ..... $4.95

SPARK PLUG JACK

Rivets or screws to any flat surface and holds two spare 14mm plugs. Tough polycarbonate plastic with spring-loaded plug anchors keeps plugs dry and protects gaps.

P/N 13-03870 ..... $5.50

NYLON STARTER ROPE

The perfect replacement rope for worn-out manual starters.

P/N 13-03922 ..... $0.45 per ft.

SPARK PLUG CAPS

Original NGK. Black. 5000 ohm resistance. P/N 08-00737 is used on threaded type plugs. P/N 08-04960 is used on solid top plugs.

P/N 08-00737 ..... $2.60
P/N 08-04960 ..... $2.60

SPARK PLUG WIRE

High-quality multi-strand copper core unshielded wire. 7mm diameter. For all Rotax® and most other engines. Replaces Rotax® Part No. 965-158.

P/N 11-04105 ..... $0.70 per ft.

FLEXDRIVE

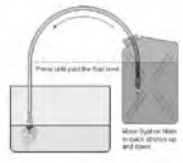
PosiFlex coupler for Quicksilver®

For 377/477 w/o high-thrust mod ..... P/N 05-01985 ..... $249.95
For all high-thrust mods ..... P/N 05-01986 ..... $330.00

RATIO-RITE CUP

Getting the right oil-to-gas ratio is no problem with this tough polypropylene cup. Just fill the cup with oil to the ratio level desired, and mix with gasoline. Ratios from 16:1 to 50:1. Graduated in ounces and CCs for filling chain cases, etc. 18 oz. capacity.

Cup ..... P/N 08-01091 ..... $4.35
Lid ..... P/N 08-03677 ..... $1.80



SYPHON MATE

Here's a safe and easy method of fuel transfer. A simple jiggle of the Syphon Mate establishes the flow, and then air pressure maintains it. Never wears out, and it's guaranteed for three years. The outlet end is 1/2" standard pipe thread for easy attachment to a garden hose, if needed.

P/N 05-01018 ..... $7.95

AIR-TECH ROTAX GEAR BOX CLUTCH RK400

The primary purpose of the clutch is to disengage the prop from the engine allowing it to start and operate at idle without vibration. When the engine is idling (below 2350 RPM) the prop is not turning. Installation of the clutch replaces the gear box flywheel and the hardy disk. Added weight is approx. 3 Lbs.

P/N 10-04811 ..... $519.00

912/914 BILLET FLANGE

This is a 1 piece 304 Stainless Steel CNC billet flange that will be a replacement unit for Rotax 912 & 914. Part numbers 978-252 and 978-243.

P/N 15-08425 ..... $293.00

STAINLESS STEEL FIREWALL SHIELDS

Two piece shields for use over cables or wires with large end-fittings or existing installations. Single piece for use where the cable or wire may pass through the hole. Flat shields designed for use on wooden or composite firewalls using a fire resistant sealant to prevent leaks. Both types of shield available in flat or with dimple to accommodate rubber grommets up to outside diameter.

Actual hole size in 2 piece shields is slightly larger than indicated to prevent chafing cable. Ream pilot hole in single piece shields oversize for the size grommet used. Use grommets that fit tightly around the cable or wire to insure a good seal.

Shields may be installed with screws, bolts and plate nuts or rivnuts. Install cable and grommet in firewall. Locate the shield to insure that it is centered on the cable - then drill attach holes in firewall. Shields pre-drilled with 5/32" mounting holes. If more than one cable passes through grommet fire resistant sealant must be applied to grommet.

Caution: Any holes drilled in the firewall are potential source of carbon monoxide in the cockpit. Extreme caution must be exercised when installing firewall shields in your aircraft. They do not provide the necessary seal around cables or wires to prevent carbon monoxide, smoke or fire from entering the cockpit. The shields are designed only to protect the sealing material (grommets/gaskets) from excessive heat.

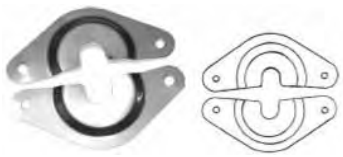
Single Piece 3/16" Hole with Rubber Backing P/N 61-175 ..... $9.50

Single Piece 5/16" Hole 3/4" Dimple For Grommet

P/N 61-225 ..... $9.50

Two Piece 3/8" Hole 1" Dimple For Grommet

P/N 61-375 ..... $11.50

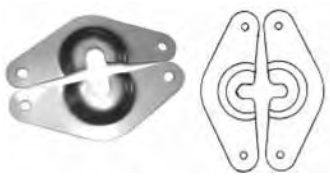


Two Piece 3/8" Hole 1-1/4" Dimple For Grommet

P/N 61-475 ..... $11.50

Two Piece 1/2" Hole 3/4" Dimple For Grommet

P/N 61-300 ..... $11.50



Two Piece 1/4" Hole 3/4" Dimple For Grommet

P/N 61-250 ..... $11.50

Two Piece 3/8" Hole 3/4" Dimple For Grommet

P/N 61-275 ..... $11.50

EP

BARRY ENGINE MOUNTS

Barry Controls has actively supported the general aviation market since 1981 and holds PMA approvals on a wide range of engine mounts. Barry mounts are warranted for 500 hours or 12 months and feature outstanding quality & value. Call for unlisted part numbers.

BEECHCRAFT

Aircraft		P/N	Engine	Price
Common Name	Model			
Skipper	77	94150-40	All	$77.75
Sport	B19, M19A	94150-01	All	$83.75
Musketeer	23	94150-01	All	$83.75
Sundowner	C23	94150-01	All	$83.75
Bonanza	S-35-V35, A, B, C33A, E33A, C, F33A, C, 36	7351231-3	All	$126.85
Bonanza	A36	7351231-3	All	$126.85
Sport (Musketeer)	19A	94150-01	All	
Twin Bonanza	E50, G50, H50, F50, J50	94110-40	All	$83.75
Turbo Baron	56TC, A56TC	94011-04	All	$128.75
Baron	58P	94031-03	All	$171.75
Baron	58TC	94031-03	All	$171.75
Baron	A24, A24R, B24R, C24R, D55, D55A, E55, E55A, 58, 95-C55, 95-C55A	96068-01	All	$387.50
Baron	99-55, 95-A55, 95-B55, 95-B55A	96071-01	All	$344.95
Bonanza	C35-G35	96115-01	All	$255.45
Duke	60, A60, B60	94011-04	All	$128.75
Queen Air	65, A65, 65/80, 65/88, 65-A80, 65-B80, 70	94110-40	All	$83.75
Duchess	76	94011-02(2)	All	$115.75
		94011-20(2)	All	$125.90
Travel Air	95, B95, A, D95A, E95	94150-40	All	$77.75

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

GULFSTREAM

Aircraft		P/N	Engine	Price
Common Name	Model			
	111	94011-02(02)	All	$115.75
		94011-20(02)	All	$125.90
	112, B, T, TC, TCA	94011-02(02)	All	$115.75
		94011-20(02)	All	$125.90
Twin Commanders	500	94110-01	All	$112.85
	500A	94110-40	All	$83.75
	560A, E, F	94110-40	All	$83.75
	680, E, F, FL, FLP	94110-40	All	$83.75
	685	94001-01	All	$169.75
	720	94110-40	All	$83.75
Cougar	GA-7	94011-20	All	$125.90
Tiger	AA5B	94011-20	All	$125.90

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine * AIRCRAFT SERIAL NUMBERS

VANS

Aircraft		P/N	Engine	Price
Common Name	Model			
	RV-3	94011-20	All	$125.90
	RV-4	94011-20	All	$125.90
	RV-6	94011-20	All	$125.90

CIRRUS DESIGN

Aircraft		P/N	Engine	Price
Common Name	Model			
Cirrus	SR20 - PMA Approved	96355-01	All	$318.00
Cirrus	SR22- PMA Approved	96301-01	All	$321.00

CESSNA

Aircraft		P/N	Engine	Price
Common Name	Model			
	152, 152A	94150-40	All	$77.75
Skyhawk	172I, J, K, L, M, N, P	94011-20	All	$125.90
	P172D	94110-40	All	$83.75
	R172E	94017-01	All	$197.75
Skylark	175, A, B, C	94110-40	All	$83.75
Cardinal	177, A, B	94011-20	All	$125.90
	180, A thru H	94110-40	All	$83.75
Skylane	182, A thru R	94110-40	All	$83.75
	R182, TR182, T182	94011-02	All	$115.75
Skywagon	185, A thru F, A185F	94110-40	All	$83.75
	188	94110-40	All	$83.75
Stationair	206, U206, A thru G, P206,A thru E	94030-01	All	$119.75
		94031-01	All	$116.75
	TP206, A thru E, TU206, A thru G	94030-01	All	$119.75
		94031-01	All	$116.75
	207, A, T207, T207A	94030-01	All	$119.75
		94031-01	All	$116.75
Yates Aircraft Conversion	A188B	94007-01	All	$359.00
Centurion	210, A thru C 210, D thru H, J	94110-40	All	$83.75
		94030-01 (2)	All	$119.75
		94031-01 (2)	All	$116.75
Centurion	210K thru N	94030-01 (2)	All	$119.75
		94031-01 (1)	All	$116.75
		94031-02 (1)	All	$229.95
Turbo Centurion	T210F thru H	94030-01 (2)	All	$119.75
		94031-01 (1)	All	$116.75
		94031-02 (1)	All	$229.95
Turbo Centurion	T210J thru N	94030-01 (2)	All	$119.75
		94031-01 (1)	All	$116.75
		94031-02 (1)	All	$229.95
Pressurized Centurion	P210N, R	94030-01 (2)	All	$119.75
		94021-01 (1)	All	$236.95
		94021-02 (1)	All	$357.00

CESSNA TWIN ENGINE

Aircraft		P/N	Engine	Price
Common Name	Model			
	310B, C	94110-40	All	$83.75
Skynight	320, A thru C	94016-03	All	$159.75
	320D, E, F	94006-01	All	$139.85
	ALT.	94017-01	All	$197.75
Skymaster	336	94016-01	All	$169.75
	337, A thru F	94017-01	All	$197.75
	P337H	94017-01	All	$197.75
	T337, B thru F	94017-01	All	$197.75
	340, A	94006-01	All	$139.85
	401, A, B	94006-01	All	$139.85
Business Liner	402, A thru C	94006-01	All	$139.85
Titan	404	94001-01	All	$169.75
	411, A	94001-01	All	$169.75
Chancellor	414, A	94006-01	All	$139.85
Golden Eagle	421, A thru, C	94001-01	All	$169.75

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

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BARRY ENGINE MOUNTS

DEHAVILLAND

Aircraft		P/N	Engine	Price
Common Name	Model			
Beaver	DHC-2 MK1	MB100875	P&W R985	---
Otter	DHC-3	MB4040	P&W R-1340	---

PIPER

Aircraft		P/N	Engine	Price
Common Name	Model			
Cherokee 140	PA28-140	94150-01	*20002-24999	$83.75
	PA28-140	94011-02 (2)	*25000-7125641	$115.75
		94011-20 (2)	*25000-7125641	$125.90
	PA28-140	94011-02 (2)	*7225001 & UP	$115.75
		94011-20 (2)	*7225001 & UP	$125.90
Cherokee 150	PA28-150	94150-01	All	$83.75
Cherokee 160	PA28-160	94150-01	All	$83.75
Warrior	PA28-151	94011-02 (2)	0-320-E3-D	$115.75
		94011-20 (2)	All	$125.90
Warrior	PA28-161	94011-02 (2)	All	$115.75
		94011-20 (2)	All	$125.90
Cherokee180	PA28-180	94150-01	*1761-4377	$83.75
	PA28-180	94150-01	*4378-5149	$83.75
Cherokee Six	PA32-300	94110-02	*32-7240056 & UP	$115.75
Archer	PA28-180	94011-20	*5151 & UP	$125.90
Archer II	PA28-181	94011-20	All	$125.90
Arrow	PA28R-180	94011-20	*3000 & UP	$125.90
	PA28R-200	94011-20	*35001-7135329 IO-360-C1C	$125.90
Arrow II	PA28R-200	94011-20	*7235001 & UP	$125.90
Turbo Arrow II	PA28R-201T	94006-01	TSIO-360-F, FB	$139.85
Arrow III	PA28R-201	94011-20	*7737002 & UP	$125.90
Turbo Arrow III	PA28R-201T	94006-01	All	$139.85
Dakota	PA28-236	94011-02	*0-540-J3A5D	$115.75
Comanche 250	PA25-250	94110-01	0-540-A1A	$112.85
Comanche 260	PA24-260	94110-01	IO-540-E or D4A5	$112.85
Comanche 400	PA24-400	94011-04	IO-720	$128.75
Cherokee Lance	PA32R-300	94110-02	IO-540-K1G5D	$115.75
Lance II	PA32RT-300	94110-02	IO-540-K1G5	$115.75
Saratoga	PA32-301	94011-02 (2)	All	$115.75
		94011-03 (2)	All	$109.75
Saratoga S.P	PA32R-301	94011-02 (2)	All	$115.75
		94011-03 (2)	All	$109.75
Tomahawk	PA38-112	94150-01	0-235	$83.75
Brave	PA36-300	94110-02	All	$115.75
Pawnee 235	PA25-235	94110-01	All	$112.85
Pawnee 260	PA25-260	94110-01	All	$112.85

PIPER TWIN ENGINE

Aircraft		P/N	Engine	Price
Common Name	Model			
Apache 235	PA23-235	94110-01	0-540-B1A5	$112.85
Aztec	PA23-250	94110-01	0-540, IO-540	$112.85
Aztec C, F	PA23-250	94011-02	IO-540-C4B5, CIB5	$115.75
Twin Comanche	PA30	94011-03	All	$109.75
	PA39	94011-03	All	$109.75
Turbo Navajo	PA31	94011-02	All	$115.75
Navajo C/R	PA31-325	94011-02	TIO-540-F2BD(L)	$115.75
Navajo Chieftain	PA31-350	94011-02	TIO-540-J2BD(L)	$115.75
Seneca	PA34-200	94011-20	All	$125.90
Seneca II	PA34-200T	94006-01	All	$139.85
Seneca III	PA34-220T	94006-01	All	$139.85
Seminole	PA44-180	94011-20	All	$125.90
Turbo Seminole	PA44-180T	94011-20	All	$125.90
Aeorstar	PA60-700P	94011-40	All	$339.50
	PA60-600, 601	94011-01	All	$138.75
	PA60-601P,602P	94011-01	All	$138.75

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine * AIRCRAFT SERIAL NUMBERS

MAULE

Aircraft		P/N	Engine	Price
Common Name	Model			
Rocket	M-4-210, C, S, T	94016-01		$169.75
	M-5-210C	94016-01		$169.75
	M-5-235, C	94016-02		$163.75
	M-6-235	94016-02		$163.75
Orion/Super Rocket	M-7-235/260, M-8-235	94016-02	0-540-J/10-540-J	$163.75

MOONEY

Aircraft		P/N	Engine	Price
Common Name	Model			
PFM	M20L	95167-01	Porche	$738.00
Chaparral	M20E 1964 Only	94150-01	0-360-A1A	$83.75
Chaparral(Super 21)	M20E 1965 & Newer	94011-02	IO-360-A1A	$115.75
Executive	M20F	94011-02	IO-360-A1A	$115.75
201	M20J	94011-20		$125.90
231	M20K	94006-01	TSIO-360	$139.85
	CAP231	94016-44	ALL	$479.00
	M20A	94150-40	0-360-A1A, D	$77.75
	M20A	94150-01	0-360-A1A	$83.75
Master	M20D	94150-40	0-360-A1D, A2D	$77.75
Ranger	M20B	94150-40	0-360-A1A, D	$77.75
Ranger Mark 21	M20C	94150-40	0-360-A1A,D	$77.75
Statesmen	M20G	94150-40	IO-360-A1D	$77.75

LANCAIR

Aircraft		P/N	Engine	Price
Common Name	Model			
Lancair	235	94150-41	0-235	$125.75
Lancair	320	94150-41	0-320	$125.75
Lancair	360	94150-41	0-320, 0-360	$125.75
Lancair	4	94001-01, (2)	TIO-550, TIO-520	$169.75
		94011-20, (2)	TIO-550, TIO-520	$125.90
Lancair	ES	94017-01	All	$197.75
Columbia	300	94001-01	IO-550	$169.75

Note: (1) Denotes 1ea. per engine. (2) Denotes 2 ea. per engine. All others require 4 engine

SIAI MARCHETTI

Aircraft		P/N	Engine	Price
Common Name	Model			
	F260	94110-01	All	$112.85
	S208	94110-01	All	$112.85

SOCATA

Aircraft		P/N	Engine	Price
Common Name	Model			
Rallye	235C, E	94011-20	0-540-B4B5	$125.90

PRATT & WHITNEY TURBO PROPS

Aircraft		P/N	Engine	Price
Common Name	Model			
P&W Turbo Prop	5906-25A5	08-10679	PT-6	$717.00

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EP

LORD ENGINE MOUNTS

LORD ELASTOMERIC ENGINE MOUNTS

These compression type couplings consist of bonded rubber joints pressed into the sockets of metal hubs. These dynafocal engine suspensions provide proper flexible support to isolate engine vibrations and reduce noise transmission to airframe structure in all aircraft applications. Careful design assures maximum strength to hold the engine under ultimate load and emergency conditions. Suspensions also distribute loads in most desirable patterns, control engine motions, accommodate thermal expansion and manufacturers' tolerances.

PROMPT SHIPPING GUARANTEED! IF YOU REQUIRE UNLISTED LORD MOUNTS, PLEASE CALL US FOR YOUR BEST PRICE. WE BEAT ALL COMPETITOR'S PRICES! LET US KNOW OF ANY LOWER PRICE AND WE WILL BEAT IT!

Aircraft Model	Application/ Engine	No. per A/C	Part No.	Price Each
AVIAT				
A-1	Lyc. O-360-C1G/A1P	8	J-1552	$47.50
S-1	Lyc. O-320	8	J-7401-2	$53.85
S-1S, -2A	Lyc. O-360-B4A, A1P	8	J-7401-2	$53.85
BEECHCRAFT				
19	Lyc. O-320-E2C	4	J-7402-16	$108.75
B19, M19A	Lyc. O-320-E2D	4	J-7402-16	$108.75
23	Lyc. O-360-A4G	4	J-7402-16	$108.75
23	Cont. IO-346-A	4	J-10778-4	$363.00
A23-24	Lyc. IO-360-A2B	4	J-10778-4	$363.00
C-23	Lyc. O-360-A4K	4	J-7402-16	$108.75
24,A24,A24R,B24R	Lyc. IO-360-A2B	2 ea*	J-10778-14	$442.00
C-24R	Lyc IO-360-A1B6	2 ea*	J-10778-16	$259.95
B33, C33	Cont. IO-470-K	4	J-7518-2	$155.75
C33A	Cont. IO-520-B	4	J-10520-1	$174.75
E33, F33	Cont. IO-470-K	4	J-7518-2	$155.75
E33A/C, F33A/C	Cont. IO-520-BB	4	J-10520-1	$174.75
G33	Cont. IO-470-N	4	J-10520-1	$174.75
35, A35, B35	Cont. E185-8	8	J-2245-1	$124.75
C35, D35, E35, F35	Cont. E185-11	4	J-3804-26	$159.85
E35, F35, G35	Cont. E225-8	4	J-3804-26	$159.85
H35	Cont. O-470-G	4	J-7518-2	$155.75
J35, K35, M35	Cont. IO470-C	4	J-7518-2	$155.75
N35, P35	Cont. IO-470-N or-C	4	J-7518-2	$155.75
S35,T35,V35,V35A,B	Cont. IO-520-BB	4	J-10520-1	$174.75
36, A-36	Cont. IO-520-BB	4	J-10520-1	$174.75
A36TC	Cont. TSIO-520-UB	4	J-10520-1	$174.75
V35A-TC	Cont. TSIO-520-D	4	J-10520-1	$174.75
B50	Lyc. GO-435-C2/C2E	8	J-3804-10	$196.75
C50	Lyc. GO-480-F1A6	8	J-3804-10	$196.75
D50, D50B/C/E	Lyc. GO-480-G2F6	4	J-3804-10	$196.75
E50, F50, G50, H50 G50, G50, J50	Lyc. GSO-480-B1B6 Lyc. IGSO-480-A1B6	4 4	Use J-7525-1 & J-6545-1	$93.95 $119.50
55, A55, B55	Cont. IO-470-L	8	J-7518-2	$155.75
55, A55, B55, B55A	Cont. IO-470-L	8	J-9613-5	$313.00
C55(1967), D55,				
D55A,E55,E55A	Cont. IO-520-CB	8	J-10778-16	$259.95
56TC, A56TC	Lyc. TIO-541-EIB4	8	J-9613-9	$224.95
58	Cont. IO-520-CB	8	J-10778-16	$259.95
58 (1984-on)	Cont. IO-550-C	8	J-10778-16	$259.95
58P	Cont. TSIO-520-L/-LB	8	J-12453-12	$173.75
58P	Cont. TSIO-520-WB	8	J-12453-12	$173.75
58TC	Cont. TSIO-520-L/-LB	8	J-12453-12	$173.75
58TC	Cont. TSIO-520-WB	8	J-12453-12	$173.75
60, B60	Lyc. TIO-541-EIC4	8	J-9613-9	$224.95
65, A65, 70	Lyc. IGSO-480-AIE6	4	J-7525-1	$93.95
		4	J-6545-1	$119.50
76TC	Lyc. TO-360-CIA6D	2 ea*	J-9613-49	$157.85
76	Lyc. O-360-AIG6D	2 ea*	J-9613-50	$121.75
77	Lyc. O-235-L2C	4	J-7402-1	$106.85
80, A80, B80, 88	Lyc. IGSO-540-AID	4	J-7525-1 &	$93.95
		4	J-6545-1	$119.50
C90, C90A	PWC PT6A-21	6	LM427SA7	$1,869.00
E90, F90	PWC PT6A-28,-135,-135A	6	LM427SA7	$1,869.00
H90	PWC PT6A-34B	6	LM427SA7	$1,869.00
95, 95A, 95B	Lyc. IO-360-B1B	8	J-7402-1	$106.85
D95A, E95	Lyc. IO-360-B1B	8	J-7402-1	$106.85
A100	PWC PT6A-28	6	LM427SA7	$1,869.00
B100	GA TPE331-6-252B	4&2*	LM821SA49	$3,456.00
			LM821SA50	$3,456.00
200, 200C, 200CT	PWC PT6A-41	8	LM427SA7	$1,869.00
A200/C/CT	PWC PT6A-41	8	LM427SA7	$1,869.00
B200	PWC PT6A-42	8	LM427SA7	$1,869.00
C90,E90,C99,200/C /CT, A200/C/CT, B200/C/CT/T	Overhaul kit for Barry Controls P/N5906-2SA5	8	LM427SA12	$358.00

Aircraft Model	Application/ Engine	No. per A/C	Part No.	Price Each
BELLANCA				
17-31, 17-31A	Lyc. IO-540-K	4	J-9868-5	$231.95
17-31A	Lyc. IO-540-KIE5	4	J-9868-5	$231.95
17-31TC,17-31ATC	Lyc. IO540-G, K	4	J-9868-5	$231.95
7ACA	Franklin 2A-120A, B	8	J-3608-1	$16.95
7ECA	Cont. O-200-A	8	J-3608-1	$16.95
7ECA	Lyc. O-235-C1	4	J-6230-1	$134.75
7GCAA, 7GCBC	Lyc. O-320-A2B	4	J-6230-1	$134.75
7GCAA, 7GCBC	Lyc. O-320-A2D	4	J-6230-1	$134.75
7KCAB	Lyc. O-320-E2A	4	J-6230-1	$134.75
7KCA	Franklin 2A-120A, B	8	J-3608-1	$16.95
8GCBC-CS	Lyc. O-360-C1E	4	J-6230-1	$134.75
8GCBC-FP	Lyc. O-360-C2E	4	J-6230-1	$134.75
8GCBC	Lyc. O-360-C2E	4	J-6230-1	$134.75
8KCAB	Lyc.IO-320-E1A	4	J-6230-1	$134.75
8KCAB-CS	Lyc. AEIO-320-E1B	4	J-6230-1	$134.75
8KCAB-FP	Lyc. AEIO-320-E2B	4	J-6230-1	$134.75
8KCAB-180	Lyc. AEIO-360-H1A	4	J-6230-1	$134.75
CESSNA				
120-140	Cont. C-85	8	J-3608-1	$16.95
140A	Cont. C-90	8	J-3608-1	$16.95
150, 150A-L	Cont. O-200-A	8	J-3608-1	$16.95
152, 152 Aerobat	Lyc. O-235-L2C	4	J-7402-1	$106.85
172 I-P	Lyc. O-320-E2D	4	J-9613-49	$157.85
172P	Cowl Mount	--	J-7444-14	$19.85
F172P	Cowl Mount	--	J-7444-14	$19.85
F172P	Cowl Mount	--	J-7444-24	$29.95
F172	Cowl Mount	--	J-7444-36	$53.75
172	Lyc. O-320-D2J	4	J-9613-49	$157.85
172N	Lyc. O-320-H2AD	4	J-9613-49	$157.85
172	Cont. IO-360-K	4	J-9613-42	$145.75
172RG	Lyc. O-360-A1F6	2 ea*	J-9613-49	$157.85
			J-9613-72	$224.95
172Q	Lyc. O-360-AL/N	2 ea*	J-9613-49	$157.85
			J-9613-72	$224.95
172P,Q	Cowl Mount	--	J-7444-24	$29.95
172	Cowl Mount	--	J-7444-36	$53.75
P172	Cont. GO-300-E	4	J-6545-1	$119.50
R172E,K	Cont. IO-360-D	4	J-9613-42	$145.75
175	Cont. GO-300-A	4	J-6545-1	$119.50
175A, B	Cont. GO-300-C, D	4	J-6545-1	$119.50
175C	Cont. GO-300-E	4	J-6545-1	$119.50
177	Lyc. O-320-E2D	4	J-9613-49	$157.85
177A	Lyc. O-360-A2F	4	J-9613-49	$157.85
177B	Lyc. O-360-A1F6D	4	J-9613-49	$157.85
177RG	Lyc. IO-360-A1B6	4	J-9613-59	$237.95
180	Cont. O-470-A, J	2 ea*	J-3804-14	$184.75
			J-3804-15	$212.95
180	Cont. O-470-K	4	J-6545-1	$119.50
180A-H	Cont. 0-470-K, R	4	J-6545-1	$119.50
180H, J	Cont. O-470-R, U	4	J-6545-1	$119.50
182, 182A-R	Cont. O-470-R, U	4	J-6545-1	$119.50
182, 182A-N	Accessory Mount	--	J-14290-4	$33.85
182H-N	Panel Mount	--	J-6984-64	$12.90
T182	Lyc. O-540-L3C5D	4	J-9613-12	$146.85
TR182	Lyc. O-540-L3C5D	4	J-9613-12	$146.85
185, 185A-E	Cont. IO-470-F	4	J-6545-1	$119.50
185	Cont. IO-520-D	4	J-6545-1	$119.50
A185F	Cont. IO-520-D	4	J-6545-1	$119.50
188	Cont. O-470-R	4	J-6545-1	$119.50
188	Cont. IO-520-D	4	J-6545-1	$119.50

NOTE: * indicates more than one Lord Part No. needed

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

LORD ENGINE MOUNTS

Aircraft Model	Application / Engine	No. per A/C	Part No.	Price Ea.
CESSNA cont.				
188	Cont. IO-520-D	2 ea*	J15198-1	$415.00
188A, 188B	Cont. IO-520-D	2 ea*	J15198-2	$470.00
205, 205A	Cont. O-360-B4A	4	J-6545-1	$119.50
206, 206A	Cont. IO-520A	2 ea*		
206B	Cont. IO-520F	2 ea*	J12453-1	$173.75
U206T	Cont. TSIO-520C	2 ea*	J12453-2	$184.95
U206	Cont. IO-520F	2 ea*		
U206,A,E	Panel Mount	--	J-6984-64	$12.90
U206G	Cont. IO-520-F	2 ea*		
TU206A-F	Cont. TSIO-520-C	2 ea*		
T206G	Cont. TSIO-520-M	2 ea*		
P206, P206A-E	Cont. IO-520-A	2 ea*		
P206T, P206T A-E	Cont. TSIO-520-C	2 ea*	J12453-1	$173.75
207, 207A	Cont. IO-520-F	2 ea*	J12453-2	$184.95
207A II	Cont. IO-520-F	2 ea*		
207T	Cont. TSIO-520-G	2 ea*		
T207A, T20A II	Cont. TSIO-520-M	2 ea*		
210, 210A-C	Cont. IO-470-E, S	4	J-6545-1	$119.50
210 D-J	Cont. IO-520-A, J	2 ea.*	J-12453-1	$158.75
210 K-R	Cont. IO-520-L	2 ea*	J-12453-2	$184.95
210 K, L	Panel Mount	--	J-6984-64	$12.90
T210M, N	Cont. TSIO-520-R	2/1/1*		
T210 F-L	Cont. TSIO-520-C, H	2 ea.*	J-12453-1	$158.75
P210M, N	Cont. TSIO-520-AF, P	2/1/1*	J-12453-2	$184.95
T210R (1985-86)	Cont. TSIO-520-CE	4/2*		
P210 R (1985-86)	Cont. TSIO-520-CE	4/2*		
310B	Cont. O-470-M	8	J-6545-1	$119.50
310C-H	Cont. IO-470-D	8	J-12390-1	$176.85
310JQ	Cont. IO-470-U, V, VO	8	J-12390-1	$176.85
310R	Cont. IO-520-M, MB	8	J-9613-58	$228.75
T310 P, Q, R	Cont. TSIO-520-B, BB	8	J-9613-58	$228.75
320, 320A-C	Cont. TSIO-470-B, D	8	J-7764-4	$172.95
320 D-F	Cont. TSIO-520-B, BB	8	J-9613-58	$228.75
337, 337A-H	Cont. IO-360-C, D, G	8	J-9613-31	$219.95
T337B-G	Cont. TSIO-360-A, H	8	J-9613-31	$219.95
P337H	Cont. TSIO-360-C, CB	8	J-9613-31	$219.95
340	Cont. TSIO-520-K, KB	8	J-9613-58	$228.75
340A	Cont. TSIO-520-NB	8	J-9613-58	$228.75
401, 401A,B	Cont. TSIO-520-E, EB	8	J-9613-58	$228.75
402, 402A,B	Cont. TSIO-520-E, EB	8	J-9613-58	$228.75
402C	Cont. TSIO-520-VB	8	J-9613-58	$228.75
404	Cont. GTSIO-520-M	8	J-9613-54	$229.95
411, 411A	Cont. GTSIO-520-C	8	J-9613-54	$229.95
414, 414A	Cont. TSIO-520-J, NB	8	J-9613-58	$228.75
421, A, B	Cont. GTSIO-520-D, H	8	J-9613-54	$229.95
421C	Cont. GTSIO-520-L, N	8	J-9613-54	$229.95
COMMANDER AIRCRAFT CO.				
112, 112B	Lyc. O-360-C1D6	2 ea.*	J-9613-40	$148.80
112T, TCA	Lyc. IO-360-C1A6D	2 ea.*	J-9613-53	$148.75
114	Lyc. IO-540-T4A5D	4	J-3804-28	$234.95
GRUMMAN AMERICAN				
AA-1	Lyc. O-235-C2C	8	J-6113-5	$52.75
AA-1A, B	Lyc. O-235-C2C	8	J-6113-5	$52.75
AA-1C (Tomcat)	Lyc. O-235-L2C	4	J-7402-24	$121.75
AA-1C (Lynx)	Lyc. O-235-L2C	4	J-7402-24	$121.75
AA-5	Lyc. O-320-32G	4	J-7402-24	$121.75
AA-5A	Lyc. O-320-32G	4	J-7402-24	$121.75
AA-5B (S/N 1-399)	Lyc. O-360-A4K	4	J-9613-49	$157.85
AA-5B, AG-5B	Lyc. O-360-A4K	4	J-9613-59	$237.95
MOONEY AIRCRAFT				
M20	Lyc. O-320	4	J-6230-1	$134.75
M20A (1958-1960)	Lyc. O-360	4	J-7402-16	$108.75
M20B (S/N1701-1939)	Lyc. O-360-A1D	4	J-7402-1	$106.85
M20C(S/ N1940-20-1258)	Lyc. O-360-A1D	4	J-7402-1	$106.85
M20D (S/N101-260)	Lyc. O-360-A2D	4	J-7402-1	$106.85
M20E (S/N101-470)	Lyc. O-360-A1A	4	J-7402-16	$108.75
M20E (1969-75)	Lyc. O-360-A1A	4	J-9613-12	$146.85
M20F (1966-77)	Lyc. O-360-A1A	4	J-9613-12	$146.85
M20G (1968-70)	Lyc. O-360-A1D	4	J-7402-1	$106.85
M22 (1966-70)	Lyc. TIO-541-A1A	4	J-10520-1	$174.75
M20J (1976-up)	Lyc. IO-360-A3B6D	4	J-9613-40	$148.80
M20K (1979-85)	Cont. TSIO-360-GB1	4	J-9613-58	$228.75
M20K (1979-85)	Cont. TSIO-360-GB3	1/3*	J-9613-75	$445.00
M20K (1979-85)	Cont. TSIO-360-GB4	1/3*	and	
M20K (1979-85)	Cont. TSIO-360-LB1B	1/3*	J-9613-76	$365.00
M20K (1986-up)	Cont. TSIO-360-MB1	1/3*		
NAVION AIRCRAFT				
G, H	Cont IO-470-H or IO-520-B	4	J-7518-4	$331.00
PIPER				
PA-23	Lyc. O-320-D2	8	J-6230-1	$134.75
PA-23-160	Lyc. 0-320-B	8	J-6230-1	$134.75
PA-23-235	Lyc. OI-540-B1A5	8	J-3804-20	$159.75
PA-23-250	Lyc. O-540-A1B5, A1D5	8	J-3804-20	$159.75
PA-23-250 (6)	Lyc. IO-540-C1B5, A1D5	8	J-3804-20	$159.75
PA-23-250 (6)	Lyc. IO-540-C4B5	8	J-9613-12	$146.85
PA-23-250 (6)	Lyc. IO-540-J4A5	8	J-9613-12	$146.85
PA-23-250	Lyc. IO-540-C4B5	8	J-9613-12	$146.85
PA-23-250T	Lyc. TIO-540-C1A	8	J-9613-12	$146.85
PA-24-250	Lyc. O-540-C1B5, A1A	4	J-3804-20	$159.75
PA-24-260	Lyc. IO-540-E4A5, D4A5	4	J-3804-20	$159.75
PA-24-400	Lyc. IO-720-A1A, A1B	2 ea.	J-9613-9	$224.95
PA-25-235	Lyc. O-540-B2C5,B2B5	4	J-3804-20	$159.75
PA-25-260	Lyc. O-540-E4	4	J-3804-20	$159.75
PA-28-140	Lyc. O-320-E2A	4	J-7402-16	$108.75
PA-28-140	Lyc. O-320-E2A	2	J-9613-40	$148.80
PA-28-140	Lyc. O-320-E3D	2 ea.*	J-9613-40 J-9613-53	$148.80 $148.75
PA-28-150	Lyc. O-320-A2B	4	J-7402-16	$108.75
PA-28-150	Lyc. O-320-A2B*	4	J-7402-24	$121.75
PA-28-150	Lyc. O-320-E2A	4	J-7402-16	$108.75
PA-28-151	Lyc. O-320-E3D	2 ea.*	J-9613-40 J-9613-53	$148.80 $148.75
PA-28-160	Lyc. O-320-B2B	4	J-7402-16	$108.75
PA-28-160	Lyc. O-320-D2A**	4	J-7402-16	$108.75
PA-28-160	Lyc. O-320-D2A	4	J-7402-24	$121.75
PA-28-161	Lyc. O-320-D3G	2 ea.*	J-9613-40 J-9613-53	$148.80 $148.75
PA-28-180	Lyc. O-360-A3A	4	J-7402-24	$121.75
PA-28-180	Lyc. O-360-A4A	4	J-7402-24	$121.75
PA-28-180	Lyc. O-360-A4A, M***	4	J-9613-40	$148.80
PA-28R-180	Lyc. O-360-B1E	4	J-9613-40	$148.80
PA-28-181	Lyc. O-360-A4M	4	J-9613-40	$148.80
PA-28R-200	Lyc. IO-360-C1C	4	J-9613-40	$148.80
PA-28R-201	Lyc. IO-360-C1C, C1C6	4	J-9613-40	$148.80
PA-28R-201T	Cont. TSIO-360-F, FB	4	J-9613-58	$228.75
PA-28-235	Lyc. O-540-B2B5	4	J-3804-20	$159.75
PA-28-235	Lyc. O-540-B1B5	4	J-7402-20	$125.75
PA-28-235	Lyc. O-540-B4B5	4	J-7402-20	$125.75
PA-28-235	Lyc. O-540-B4B5****	4	J-3804-27	$156.00
PA-28-236	Lyc. O-540-J3A5D	4	J-9613-12	$146.85
PA-30	Lyc. IO-320-B1A1C1A	8	J-9613-19	$152.75
PA-31	Lyc. TIO-540-A1A, or A1B, A2C, A2B	8	J-9613-12	$146.85
PA-31-310	Lyc. TIO-540-A2C	8	J-9613-12	$146.85
PA-31-325	Lyc. L/ TIO-540-F2BD	8	J-9613-12	$146.85
PA-31-350	Lyc. L/ TIO-540-J2BD	8	J-9613-29	$158.75
PA-31P-350	Lyc. TIO-540-V2AD	--	J-9613-53	$148.75
PA-31T-1, -500	PWC PT6A-11	6	LM-423-SA1	$889.00
PA-31T-620	PWC PT6A-28, 135	4	LM-423-SA1	$889.00
PA-31T-620XL,-31T2		2	LM-423-SAI2	$806.50
PA-32-260	Lyc. O-540-E4B5	4	J-7402-20	$125.75
PA-32-260 (s/n 570-up)	Lyc. O-540-E4B5	4	J-3804-27	$156.00
PA-32-300	Lyc. IO-540-K1A5	4	J-3804-27	$156.00
PA-32-300	Lyc. IO-540-K1G5, K1A5	4	J-3804-40	$148.75
PA-32R-300	Lyc. IO-540-K1G5D	4	J-3804-31	$208.95
PA-32R-300 (s/n 141-up)	Lyc. IO-540-K1G5D	4	J-3804-40	$148.75
PA-32RT-300	Lyc. IO-540-K1G5	2 ea.	J-3804-40	$148.75
PA-32RT-300T	Lyc. TIO-540-51AD	2 ea.	J-3804-37& J-3804-39	$192.75 $335.00
PA-32-301	Lyc. IO-540-K1G5D	2 ea.	J-9613-19 &	$152.75
PA-32R-301	Lyc. IO-540-K1G5D	2 ea.	J-9613-12	$146.85
PA-32-301T	Lyc. TIO-540-S1AD	2 ea.	J-9613-19 &	$152.75
PA-32R-301T	Lyc. TIO-540-S1AD	2 ea.	J-9613-55	$299.95
PA-34-200	Lyc. L/ IO-360-C1E6	8	J-9613-40	$148.80
PA-34-200, 200T	Cont. TSIO-360-E, EB	8	J-9613-58	$228.75
PA-34-220T	Cont. L/ TSIO-360-KB	4	J-9613-58	$228.75
PA-36-285	Cont. 6-285	4	J-14090-7	$499.50
PA-36-300	Lyc. IO-540-K1G5	4	J-3804-31	$208.95
PA-38-112	Lyc. O-235L2C	4	J-7402-16	$108.75
PA39	Lyc. IO-320-B1AC1A	8	J-9613-19	$152.75
PA-44-180	Lyc. 0-360-E1A6D	8	J-9613-40	$148.80
PA-44-180T	Lyc. T0-360-E1A6D	8	J-9613-40	$148.80
PA-46-310P	Cont. TSIO-520-BE	4	J-9613-55	$299.95
PA-46-350P	Lyc. TIO-540-AE2A	8	J-9613-55	$299.95
PA-60-360	Lyc. IO-360-E1A	8	J-9613-12	$152.75
PA-60-600A	Lyc. IO-540-K1F5	8	J-9613-9	$224.95
PA-60-600B	Lyc. IO-540S1A5	8	J-9613-9	$224.95
PA-60-601P	Lyc. IO-540S1A5	8	J-9613-9	$224.95

NOTE: * indicates more than one Lord Part No. needed

LOCKING TAB WASHER - Used to lock mounting bolts to Lord Mounts. This Continental P/N 501867 is similar to Cessna P/N 08-51559-1.
P/N 08-50186-7 ..... $1.10 ea.

COWL MOUNTS

Cessna150,172,177 ..... P/N J-7444-14 ..... $19.85
Cessna 182 ..... P/N J-7444-24 ..... $29.95

EP

DYNAFOCAL ENGINE MOUNT RINGS & KITS

Standard rings furnished with 2-3/4" I.D. retainers, completely welded, ready for mount assembly. The Dynafocal ring kits contain all tubing cut and bent, with 2-3/4" I.D. retainers, ready to weld.

Dynafocal Ring for Lyc. 0-235 to I0-360 (200 HP)..... P/N 33521 .....$197.75
Dynafocal Ring for Lycoming 0-320B..... P/N 33521-B.....$308.95
Dynafocal Ring Kit for Lyc. 0-235 to I0-360 (200 HP) ..... P/N 33522.....$154.75
Retainer Cups & Rings Kit..... P/N 33253.....$101.75
(includes 8 cups & 4 rings - everything in #33522 kit above except the tubing)

VIP ENGINE MOUNTS FOR EXPERIMENTAL AIRCRAFT

Spruce P/N	Lord Equiv.	Barry Equiv	Price ea.
08-00774	J9613-49	94110-20	$88.75

SANDWICH MOUNTS FOR HOMEBUILT AIRCRAFT

Sandwich assemblies of natural rubber and specially blended synthetic compounds bonded to 2 metal plates. Normal installation requires 4 assemblies, each consisting of 2 sandwich mountings and 1 spacer. Satisfactory performance requires that the spacer be designed to the correct length to precompress each mounting to guarantee proper positioning of the mountings. Set consists of eight bonded sandwich mountings equivalent to Lord Mount No. J-7402-5 (2" Dia.) and four 4130 steel spacers with mounted rubber shoulder. Use with dynafocal engine mount rings using 2-3/4" I.D. retainer cups. Used on many homebuilts including the Defiant and Long-EZ..... P/N 08-03500 .....$449.00

SPECIAL HEAVY DUTY MOUNT SETS

Designed for use on aerobatic aircraft such as Christen Eagle and Acro. Same style as homebuilt type but inner core has been "beefed up" and elastomers added to encapsulate the spacer. 2-inch diameter. Includes a set of 8 Mounts and 4 spacers to make one complete engine set of 4.

Note: Mounting hole is 7/16" and requires AN7 bolts for installation.
50401-300 w/4 Spacers..... P/N 08-03600 .....$247.00
DISCOUNT: LESS 10% ON 6 SETS, 15% ON 10 SETS, 20% ON 20 SETS

LORD MOUNTS FOR COZY ENGINE MOUNT

These Lord J-7402-24 mounts fit the engine mount for Lyc. 0-360 manufactured by CG Parts.

P/N 07-01115 .....$121.75

SKYBOLT PLATEMOUNTS

The SK2003A Series Mounts were specifically designed around the latest generation Cessna/Lord J7444-42 Series Mount. The SK2003-14A, -24A, and -42A all have the same flex feature as the J7444-42. They look and install exactly the same as the Cessna/Lord part it replaces using the same fastener length. The SK2003-14A, -24A, and -42A are fixed depth, Non-Adjustable Platemounts. The 50ADJ is adjustable and can be adjusted without removing the cowling for an exact fit.

Model	Application	Part No.	Price
SK2003-14A	Cessna PN J7444-14. Used On - 67-On C150 (10ea), 67-86 C172 (11ea), C172XP (13ea) 68-78 C177 (14ea)	08-07222	$19.75
SK2003-24A	Cessna PN J7444-24. Used On - 73-86 C182 (14ea)	08-07223	$22.50
SK2003-42A	Cessna PN J7444-36 and -42. Used on -97, C172 R & S (14ea)	08-07208	$31.50
SK2003-50ADJ	Designed to replace the Cessna/Lord J7444 Series Platemount	08-07460	$34.80

SK-SP5 SKYBOLT CLOC TOOL - Adjust CLoc® 4000 Series Adjustable Receptacle and Mounts. .....P/N 08-07210 ..... $31.00

SMALL URETHANE EAR STYLE ENGINE MOUNT BUSHINGS

These engine mount bushings are made of a special urethane formula which outlasts most other mounts. They have been in use on O-540, IO-540 and TI-540 series engines for years, and are now available to the experimental aircraft market. Includes two bushings, one spacer and two washers. Specifications: These small ear type bushings are applicable to the following engine models: O-540-A1A, -A1A5, -A1B5, -A1C5, -A1D, -A1D5, -A2B, -A3D5, -B1A5, -B1B5, -B2B5, -B2C5, -B4B5, -C1B5, -E4A5, -E4B5, -E4C5, -G1A5, G2A5, -F1A5, -F1B5
IO-540-A1A5, -B1A, -B1A5, B1C5, -C1B5, C4C5, -D4A5, -E1A, -E1A5, -E1B5, -E4A5, -G1A5, -G1B5, -G1C5, -G1D5, -G1E5, -G1F5, -D4A5, -K1A5, -K1A5D, -K1B5, -K1C5, -K1d5, -K1E5, -K1F5, -K1G5, -K1G5D, -K1J5D, -T4A5D, -T4B5D, -N1A5, -R1A5, -S1A5, -C4D5D
TIO-540-A2C, -S1AD P/N 08-07393 ..... $29.95

BARRY MOUNT FOR VANS AEROBATIC AIRCRAFT

Barry Controls is a manufacturer of many aircraft engine mounts of both experimental and certified types. They also manufacture engine mounts for experimental and kit airplanes of various makes and models. Please call or visit our website for application information.

P/N 94016-08.....$418.00

HOMEBUILDERS CONICAL LYCOMING ENGINE MOUNT BUSHINGS

These new bushings offer superior damping qualities and do not harden over time as original mounts can do. They are molded from hi-tech silicone rubber which offering a much lower compression set which reduces engine sagging over time. Silicone also withstands a very wide temperature range and is compatible with grease and oil. These mounts are not PMA'd or FAA approved and are for use on experimental aircraft only. Not an approved replacement for Lycoming 71032 bushings. Sold in set of 8 bushings. P/N 08-00662 ..... $42.80 /Set

J7402-5 LORD ENGINE MOUNT (NON PMA)

The J7402-5 Mount Kit is NOT FAA PMA approved for installation on any aircraft. It can only be used on Experimental aircraft. Weight: 0.564 lb Dimensions (W,L,H): 3.063 in x 3.063 in x 3.063 in.

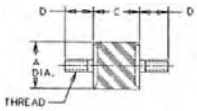
P/N 07-02595 .....$128.75

LORD ENGINE MOUNTS FOR ULTRALIGHTS

All altitude mounts for vibration isolation and shock prevention in all directions. Available in soft, medium, or hard rubber.

Soft..... P/N 08-07049 ..... $21.50
Medium..... P/N 08-01013 ..... $20.95
Hard..... P/N 08-07050 ..... $15.50
Snubbing Washer..... P/N 9810145-01804.....$1.42

LORD RUBBER ENGINE MOUNT



LORD Flex-Bolt™ Sandwich Mounts are designed to protect equipment and machinery against damaging vibration. These mounts provide high load-carrying capacity and assure long life. Provide lowcost mounting systems which are compact, lightweight, easy to install and maintenance-free.

Model	C	D	Thread	Part No.	Price
J-4624-45	.75	.75	5/16-18	10-01557	$7.90
J-4624-57	.75	.62	5/16-18	08-07196	$6.95

LORD PLATEFORM MOUNT

Lord Plateform Mounts provide effective isolation against vibration. The contour of the flexing element was developed to provide uniform stress distribution. This, plus high strength bonding and the use of specially compounded elastomers, provides maximum service life.

150 Steel Square 24 lb..... P/N 08-07183.....$11.90
150 Steel Square 30 lb..... P/N 15-05391.....$15.55
200 Steel Holder 45 lb..... P/N 15-05499.....$81.75

URETHANE CONE STYLE ENGINE MOUNT BUSHINGS

These engine mount bushings are made of a special urethane formula which outlasts most other mounts. They have been in use on smaller 4 cylinder Lycoming engines from the 0-235 series to the GO-480 series for years, and are now available to the experimental aircraft market.

Specifications: These cone type mounts are applicable to the following engine models: O-235-C1, -C1B, -C2A, -C2C, -F, -F1B, -G2A, O-290-D, -D2, -D2B, -D2C, O-340-A, O-340-B, O-320-A2A, -A2B, -A2C, -A3A, -A3B, -A3C, -B2A, -B3A, -B3B, -B3C, -E1A, -E2A, IO-320-E2A, O-435-A, -A2
GO-480-B, -B1A6, -B1B, -B1C, -B1D, -C1B6, -D1A, -F6, -F1A6, -F2A6, -F4A6, -G1A6, -G1D6, -G2D6, -G2F6, -G1H6, -G1J6.

P/N 08-07392 .....$5.95

STAINLESS STEEL FIREWALL PENETRATION KIT 3/4

During the testing phase of our all stainless steel heater bypass box, we were astounded at the affects of a simulated engine fire on aluminum firewall components. Watching how fast the aluminum melted away (only 16 seconds) took us by surprise. It became very apparent that fireproofing the firewall was more important than most people realize.
After many months of trial and error, a fireproof pass through was designed. The firewall Penetration Kits offer a fireproof method of getting wires and cables trough the firewall in a clean, professional looking manner that allows easy removal for replacement if necessary.
Testing was initiated on most common methods of wire and cable penetrations available on the market. Simulated engine fire was directed at the stainless shields with rubber grommets, high temperature silicone, eyeball fittings, plain rubber grommets and several untried methods. All failed the fire test with the exception of the steel eyeball, and it only accepts one cable.
The kit comes complete with stainless steel fabricated fitting, fire sleeve tubing, two ALL stainless steel hose clamps and a tube of fire block sealant to seal the ends from moisture and gasses. Includes installation instructions.
• Fireproof seal of the firewall for penetration of wires and cables.
• Seals out moisture and gasses.
• Easy replacement of wires and cables if necessary.
• Very clean looking installation.
• Available in three sizes.
To determine the size you need, plan where you want to run your wire and cable bundles. Use a tie strap or twist tie to bundle the wires and cables. Measure what size holes the bundle will fit through and choose the NEXT LARGER size (see installation instructions.) You need enough clearance between the bundle and stainless fitting to push the second fire sleeve into the fitting creating the fireproof, chafe proof seal.
Typical installation. Wires can be run straight out or turned back to attach on firewall reducing vibration.
There are so effective that they received an STC under Advisory Circular AC 20-135 Power plant Installation and Propulsion Systems Component Fire Protection Test Methods, Standards and Criteria.
Firewall Penetration Kit 3/4".....P/N 09-00978.....$44.50
Firewall Penetration Kit 1/2".....P/N 09-02601.....$59.85
Firewall Penetration Kit 1".....P/N 09-00979.....$76.75

HEATER BYPASS VALVES

Three models of the all stainless steel heater bypass boxes are offered. The engine side control lever comes with a backing plate that attaches to the cabin side of the firewall and has a 2 inch scat tube outlet so a tube can be attached in the cabin that directs air where wanted.
All stainless steel construction offers a fireproof closure in case of an engine fire.
New flapper design offers better seal to keep out hot air when closed.

HEATER BYPASS VALVE FOR RV-10
P/N 08-06230.....$188.00

HEATER BYPASS VALVE WITH CABIN SIDE CONTROL LEVER FOR RV-7, RV-8 AND RV-9
P/N 08-01311.....$96.00

HEATER BYPASS VALVE WITH ENGINE SIDE CONTROL LEVEL
P/N 08-01311-1.....$134.85

T TUBE CONNECTOR
Expanded on short leg to slip over a 2" O.D. tube to divert air in two directions. Especially handy for close to the firewall applications. Also available with non-expanded short leg. Weight is 1.7 ounces.
P/N 08-07304.....$31.75

2-1/2 INCH Y TUBE CONNECTOR
With 2" offshoot. If you are running 2.5" tubing in one area and 2" to another, this is your part. Weight is 1.8 ounces.
P/N 08-07303.....$30.75

2 INCH DIAMETER Y TUBE WITH SHUT-OFF VALVE
This is a DL-010 "Y" Tube, modified with a shut-off valve in the straight run tube. The shut-off valve enables the builder to divert the flow of air from the straight tube and direct all or part of the air flow to the angled tube. Furnished with one stainless steel hose clamp. Weight is 2.9 ounces.
P/N 08-07296.....$63.75

EP

MODIFIED VA175 TUBE CONNECTOR

This is a direct replacement for the VA175 (Van's part number). The VA175 directs warm air in the RV-10 tunnel to both sides equally.
With the Modified VA175, air can be directed all to one side, partially to one side, or both sides, through the controllable (cable actuated) flapper on the inside of the unit.
P/N 08-07306.....$64.75

SHUT OFF VALVE TUBE CONNECTOR
Expanded on one end to 2" I.D. to slip over a 2" O.D. tube to regulate or shut off air. Also available non-expanded for in-line applications. Weight is 2 ounces. P/N 08-07305.....$71.80

EXHAUST SHIELDS
Over the years we have seen failure of the rivets that hold the exhaust heat shield to the mounting bracket. The solution was to spot weld the stainless steel mounting bracket to the stainless steel heat shield thus eliminating the possibility of rivet failure. Adding additional spot welds insures reliability. They are offered in two sizes, 2 inch and 4 inch to cover most applications.
Exhaust Shield 2"
P/N 08-07351.....$11.50
Exhaust Shield 4"
P/N 08-07352.....$12.95

ALL STAINLESS STEEL TRI-BOX

These boxes were developed for builders who want a simple, light, all stainless box that will fit in tight places, as it does not extend forward of the firewall as far as a standard box. Shown in the photo is a left unit. The box is available in both left and right units. The hole spacing is correct for the pre-punched holes in the RV-10 firewall, but they can be mounted on any firewall. For ease in cable routing, the arm on the box is adjustable using the provided lock nuts. Everything in the unit is stainless steel, including bushings and rivets. It is furnished with a closed-cell silicone gasket. Weight is 9.8 ounces and has a 2" inlet/outlet port. Please note that these boxes are a direct replacement for the aluminum box available from Vans. The RV-10 uses both a left and a right unit, and they also can be ordered separately. If you are not sure which one(s) you need, refer to your firewall plans drawings.

Right..... P/N 08-04958..... $139.75

Left unit is a special order part. Please contact us to order.

2 1/2" INLET AND 2" OUTLET HOMEBUILDERS CABIN HEAT BOX

This box is identical to the deluxe stainless steel cabin heat box, except that the inlet is 2 ½" OD so that it can be used on larger heat muff applications where the builder is using 2 ½" scat tubing. This box is currently being used on the MICCO certified aircraft. Weight is 7.2 ounces.

P/N 08-04013 ..... $150.00

SIDE INTAKE HOMEBUILDERS CABIN HEAT BOX

P/N DL-015 - This box is identical to the standard cabin heat box, P/N DL-001, except that the air intake is parallel to the firewall rather than coming straight in from the heat muff. This gives the builder the option of running scat tube parallel to the firewall. Total weight is 5.2 ounces and has a 2" inlet/outlet port. Furnished with a flange gasket and four mounting rivets. Can also be bolted to firewall. P/N 08-04957 ..... $109.50

GPL STAINLESS STEEL EXHAUST SPRING

Winding Length: 26mm. Overall Length: 58.3mm. Hook Distance: 66mm(2.90"). Wire Diameter: .2. O.D.: 13mm. Number of Rolls: 13. GPL Part Number: EXH-2S. Replaces Rotax Part Number 938-795. P/N 08-07632 ..... $4.00

GPL STAINLESS STEEL EXHAUST SPRING FOR 2 STROKES

Winding Length: 32mm. Overall Length: 64mm. Hook Distance: 75mm. Wire Diameter: 2.0mm. O.D.: 16mm. Number of Rolls: 9.5. GPL Part Number: EXH-4S. Replaces Rotax Part Number 938-790

P/N 08-12235 ..... $8.00

CESSNA RISER HALF CLAMP 0750161-25

Cessna Riser Half Clamp 0750161-25, for Cessna 172R and 172S.

P/N 05-04890 ..... $105.75

AERONCA HEAT MUFF

Aluminum muffs for models 7AC and 11AC exhaust stacks. Fit either left or right side.

P/N 05-08715 ..... $224.95

2" DIAMETER 90° TUBE

This unit is designed to slide over the end of the 2" O.D. tube protruding from a cabin heat box that extends through the firewall. The short end of this unit is expanded to 2" I.D. Two stainless steel clamps are furnished with the unit. If you use scat tube, the 90° angle allows you to run the scat tube parallel to the firewall and away from undesirable areas (brake pedals, etc.) Constructed of seamless 6061T4 .028 wall tube. Weight: 1.4 oz.

P/N 08-00863 ..... $29.50

2" DIAMETER "Y" TUBE

"Y" tube is designed to be used with the Homebuilders cabin heat box to make warm air available to 2 or more locations in the aircraft. Constructed of seamless 2024T6 tube, it weighs only 2 oz. These tubes are expanded to 2" I.D. on the inlet end to slip over and clamp to the 2" O.D. tube of the cabin heat box. Due to the very light weight, "Y" tubes can be installed in scat tubing as well as attaching directly to cabin heat boxes. One stainless steel clamp is included with "Y" tube. Due to the light weight of only 1.7 oz., the non-expanded Y-tube can be placed anywhere in a run of tubing to give more options for heating additional areas of the aircraft. Furnished w/2 stainless steel hose clamps

Standard "Y" tube..... P/N 08-04100 ..... $31.85

Non-expanded "Y" tube..... P/N 08-04130 ..... $29.85

IN-LINE HEATER/ DEFROSTER VALVE

This in-line valve connects to 2" SCAT ducting. It comes complete with cable end and can be hooked up in any combination to direct air to either heater outlets or defrost outlets. Actuating lever is adjustable to any position. Very popular on RV's & other homebuilt aircraft.

P/N 08-00053 ..... $107.95

P/N 08-03900

P/N 08-00473

HOMEBUILDER'S HEAT MUFFS

These superior quality heat muffs are made entirely of 6061 and 5052 aircraft grade aluminum, offset from the center to clear the close cowling of most homebuilts. The muff can be installed anywhere on the exhaust system where there is 12" of straight pipe, baffle, or even on an aft vertical baffle. The reason for using forced air through the muffs rather than just taking warm air from the low pressure plenum is that in order to have cabin heat you have to have forced air. The muff is constructed so that it can be used for either cabin heat or carb heat, or both, as there is 1 outlet & 1 inlet. The muff is split and piano-hinged to "clam-shell" over the exhaust pipe. This is necessary if you have downturns on your exhaust pipes and do not want to cut off the downturns should you later want to remove the muff. Stainless steel clamps are furnished with the muff. Inlet and outlets are 2" dia. and will fit 1.75" dia. pipes. The standard 9" body has 1 inlet & 1 outlet and generally used for cabin heat (wt:10.4 oz.). The shorter 6.5" body 1 inlet & 1 outlet and generally used on the front crossover section of the exhaust to duct heat to the carburetor box (wt: 8.9oz.).

Standard 9" body..... P/N 08-03900..... $126.95

Standard 6.5" body..... P/N 08-00473..... $126.95

CESSNA TYPE HEAT MUFF

Heli-arc welded aluminum muff with rustproof stainless steel fins for clamping to stack. Similar in design to the new Cessna type. Furnished with attaching clamps.

Muff w/2" Outlet ..... P/N 08-02400..... $82.50

Muff w/ 2.5" Outlet..... P/N 08-02500..... $82.65

DELUXE HOMEBUILDER'S CABIN HEAT BOX

P/N DL-002 - This cabin box is our first modification to our standard heat box. The only difference between this and the standard is that the deluxe cabin heat box has one inlet and two outlets; the second outlet must be used to dump and route, via 2" scat tube, the warm air away from the low plenum area when heat is not being used in the cabin. (It is very important not to run the dump tube to another box on the other side of the firewall, because a constant flow of air is necessary to ensure that the heat muff does not overheat.) The weight on this unit is 5.5 ounces. P/N 08-04005 ..... $119.85

DELUXE HOMEBUILDERS CABIN HEAT BOX STAINLESS STEEL

P/N DL-003 - This box is identical to the Deluxe Homebuilders Cabin Heat Box except the tubing that goes through the firewall and the mounting flange are also stainless steel for extra protection from fire. Weight is 7.1 ounces. ..... P/N 08-04010 ..... $117.85

2 ½" OD INLET AND 2 ½" OD OUTLET HOMEBUILDERS CABIN HEAT BOX

P/N DL-005 - This box is identical to the deluxe stainless steel cabin heat box, except that the inlet and outlet are 2 ½" OD so that this box can be used when the builder wants to use 2 ½" scat tubing throughout the project. (This box was used on the Cirrus SR20 certified aircraft. The SR20 now uses the DL-008 box listed below.) Weight is 6.3 ounces.

P/N 08-04015 ..... $129.50

DELUXE HOMEBUILDERS CABIN HEAT BOX, ALL STAINLESS STEEL

P/N DL-006 - This box was recently developed in response to customer requests. With the exception of brass shaft bushings, this box is constructed entirely of stainless steel, including all SS blind rivets. Like the deluxe boxes, this unit has a 2" inlet and 2" outlets. For the added durability of all stainless steel, the box still only weighs 10 ounces.

P/N 08-04025 ..... $139.50 ea.

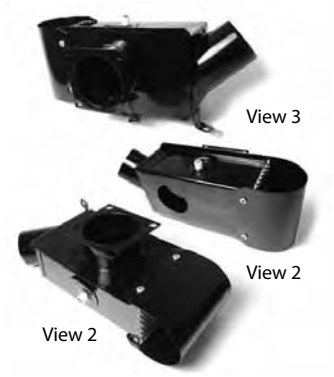
CARBURETOR HEAT BOX FOR ELLISON TBI

The carburetor heat box and air grid are designed specifically for the Ellison TBI to eliminate carburetor icing problems. There must always be a constant flow of air through a heat muff. The carburetor heat box has an automatic dump of hot air when carb heat is not being used, thereby eliminating the chance of heat muff burnout. The box has a 2.5" inlet for ram air and a 2" inlet for carb heat. The box is made of 5052 aluminum, stainless steel and 6061-T4 tube. The mounting surfaces, shaft, flapper, arm and rivets are stainless. In addition, the box is strengthened in the mounting hole area to eliminate the possibility of metal fatigue. A 4" inspection/ mounting hole with a cover plate secured by nut plates and screws is locate on the bottom of the box (not visible in the photo.) The purpose of the air grid is to eliminate air flow turbulence. The 1/2" stainless steel vanes straighten the air before it reaches the throat of the carburetor and achieves better air/fuel distribution. This is a proven performance enhancement technique.

Carburetor Heat Box ..... P/N 08-00813 ..... $214.50
Air Grid ..... P/N 08-00814 ..... $94.75
Extra Gaskets ..... P/N 08-00815 ..... $8.75

STANDARD HOMEBUILDERS CABIN HEAT BOX

P/N DL-001 - This cabin heat box has been engineered to be the smoothest, most efficient and lightest heat box built. Fabricated from aircraft-grade aluminum with stainless steel shaft, arm and flapper. Originally designed for use on the popular RV-4 homebuilt, but is applicable to most other designs. Total weight is only 5.2 ounces. Furnished with a gasket flange for the forward side of the firewall for leak-free ducting of warm air to anywhere the builder wants it. Inlet and outlet are 2 inch OD 6061-T4 seamless alum. The body of the box is constructed of 5052-032 alum. The outlet tube extends through the firewall so that scat tubing can be attached to route the warm air. Superior craftsmanship and quality. Over 4,000 sold to date. P/N 08-04000 ..... $112.75 ea.



VAGABOND CARB HEAT BOX

This air grid carburetor heat box designed to fit the Piper PA-15 Vagabond. Dimension: 11" x 3-1/2" x 4"

P/N 08-06290 ..... $175.95

TUBING CONNECTORS

2" ALUMINUM FLANGE - Accepts 2" scat tube. Flange allows riveting to firewall, baffles, etc. Wt: 0.2 oz.

P/N 08-04135 ..... $12.50

CARB HEAT CONNECTOR - Mounts on FAB airbox or similar airbox. Flange accepts 2" scat tube from muff. Standoff design allows hot air to escape when carb heat is not selected. Weight: 0.9 oz.

P/N 08-04145 ..... $20.85

FLANGED DUCT - Accepts 2" ducting on both ends. Helps route ducting through bulkheads, firewalls, etc. Especially useful for getting heat to the back seat of the aircraft. 3" square plate with 2" tubing projecting 1" from each side. Wt:0.7 oz. P/N 08-04140 ..... $18.65

CABIN HEAT BOX

Custom built aluminum box mounts to firewall. Lever on butterfly may be attached to push-pull control for close adjustment of cabin air flow. Two 2" intake ports, one 2" outlet. Wt. 1 lb. 7-1/2" long. Fine quality construction. P/N 08-01500 ..... $125.75

HOMEBUILDERS CABIN HEAT SHUTTLE KIT

Easily assembled and designed so that it can be modified for custom applications. Kit includes construction plans and directions along with installation hints for the popular Vans RV series of homebuilt aircraft. Controlled by ratchet type control cable such as ACS model A740 (P/N 05-12500). Order control cable separately.

P/N 08-04460 ..... $64.95

EP

AWI
AEROSPACE WELDING MINNEAPOLIS, INC.

EXHAUST SYSTEMS BY AEROSPACE WELDING MINNEAPOLIS, INC.

Aerospace Welding, Inc. has earned a reputation for its uncompromising commitment to quality exhaust systems and components. Aircraft Spruce is an authorized distributor of AWI products, and as such can assure our customers of minimal down time and fast shipment through the Priority Service Proram at AWI. All exhaust systems are built in fixtures for precise fit and are FAA approved for the listed aircraft. Available in factory new (N) and overhauled (OH) condition as noted.

* NOTE: *= 0550157-7 has been consolidated under PMA part number A0450338-14

Aircraft	OEM Part No.	Description	Our Part No.	Price
C-150	0450400-3	LH Muffler (N)	08-00061	$342.00
	0450400-26	RH Muffler (N)	08-00062	$342.00
	0450338-70	RH Riser (N)	08-00063	$63.99
	0450338-69	LH Riser (N)	08-00064	$82.75
	0450338-66	RH Tailpipe (N)	08-00065	$86.75
	0450338-67	LH Tailpipe (N)	08-00066	$95.75
C-152	0454009-5	Muffler (OH)	08-00067	$401.00
	0454009-6	Muffler (OH)	08-00068	$343.00
	EL0099001-716	Muffler (OH)	08-00069	$679.00
C-170B/172	0550157-9	LH Muffler (OH)	08-00070	$431.00
	A0450338-14*	RH Muffler (OH)	08-00071	$421.00
	0550157-7	Riser (N)	08-00072	$67.75
	0550157-8	Curved Riser(OH)	08-00073	$103.75
	A9954100-9	Muffler (N)	08-07517	$798.00
	A99541005	Riser (N) LR	08-07520	$164.75
	A99541005	Riser (N) LF	08-07521	$164.75
C-172 Cont.	0550176-59	Muffler (N)	08-00074	$396.00
	0550176-13	Riser (N)	08-00076	$390.00
C-172	1754001-25	Muffler (N)	08-00077	$429.00
	1754007-1	Riser (OH) RR	08-00079	$171.75
	1754008-1	Riser (OH) LR	08-00080	$174.00
	1754009-1	Riser (OH) LF	08-00081	$174.00
	1754010-1	Riser (OH) RF	08-00082	$171.75
C172R/172S	A9954100-9	Muffler (N)	08-07517	$798.00
C-177	1754001-25	Muffler No flm tube	08-00083	$447.00
	1754001-9	Muffler w/ flm tube	08-00084	$524.00
C-177RG	2054000-42	LH Muffler (OH)	08-00085	$394.00
	2054000-40	LH Muffler (OH)	08-00086	$392.00
	2054000-31	LH Muffler (OH)	08-00087	$394.00
	2054000-39	RH Muffler (OH)	08-00088	$394.00
C-180	0750290-3	Muffler OH Dual exh.	08-00089	$356.00
C-180/182	0750130-9	Muffler (OH)	08-00090	$345.00
	0750130-12	Muffler (OH)	08-00091	$345.00
	0750130-44	Muffler (OH)	08-00092	$345.00
	0750130-48			
C-180/182/185	A0750161-28	Muffler (N)	08-07514	$575.00
C-182/185	0750161-89	Muffler (N)	08-00094	$392.00
	0750238-20	15 inch Stack (N)	08-00095	$647.00
C-182RG	1250251-12	Muffler (OH) w/ ringe	08-00107	$313.00
C-206/210	1250263-2A	LH Collector (OH)	08-00103	$515.00
	1250264-2A	RH Collector (OH)	08-00104	$515.00
	1250250-5	Heat Exchanger	08-00105	$394.00
	650-43	LH Muffler (OH)	08-00106	$363.95
	1250251-13	RH Muffler OH w/ rings	08-00107	$313.00
	1250251-16	RH Muffler (OH)	08-00108	$256.95
	1250256-7	LH Tailpipe (N)	08-00109	$109.75
	12502646-6	RH Tailpipe (N)	08-00111	$109.75
C-T206/T210	1250860-110	Tailpipe (OH)	08-00112	$445.00
	1250860-104	RF Stack (OH)	08-00113	$472.00
	1250860-105	Turbo Inlet (OH)	08-00114	$473.00
	1250860-203	Heat Exchanger (OH)	08-00115	$1,121.00
	1250860-90	Crossover (OH)	08-00116	$219.95
	1250860-100	Riser (N)	08-00117	$59.75
C-T206/T210	1250860-07	Tailpipe Adapter(OH)	08-00119	$88.75
C-337	1250250-5	Muffler (OH)	08-00120	$394.00
	1555001-1	Muffler (OH)	08-00121	$1,514.00
Piper J-3	71053-02	Muffler (OH)	08-00122	$335.00
PA18	12433-014	Muffler (OH)	08-00123	$335.00
	12457-002	Stack (OH)	08-00124	$385.00
PA22	A10308-003	Muffler (N)	08-13103	$404.00
	12043-22	Stack (OH)	08-00127	$527.00
	12043-23	Stack (OH)	08-00128	$515.00
PA28-140/-180	99482-00	Muffler (OH)	08-00129	$328.00
	A99482-02	Muffler (N)	08-13105	$346.00
	99044-02	Stack (OH)	08-00131	$187.75
	99044-04	Stack (OH)	08-00132	$254.95
	99044-05	Stack (OH)	08-00133	$345.00
	99044-03	Stack (OH)	08-00134	$177.99
PA28-10/180/ 151/ 494/ 191	AWI 63666-002	Tailpipe (N)	08-07515	$138.85
	AWI 63723-001	Carb. Heat Shroud	08-07516	$627.00

Aircraft	OEM Part No.	Description	Our Part No.	Price
PA28-151/161/ 180/191	66894-03	Muffler (N)	08-00135	$268.95
PA28R-180/200	67517-00	Muffler (N)	08-00136	$277.95
PA28-235	65012-00	Muffler (OH)	08-00137	$381.00
	65813-00	Muffler (OH)	08-00138	$381.00
	68718-03	Muffler (OH)	08-00139	$381.00
	65038-00	LH Stack (OH)	08-00140	$447.00
	65039-00	RH Stack (OH)	08-00141	$447.00
PA28-236	67517-00	Muffler (N)	08-00136	$277.95
	LW12127	Transition (N)	08-00145	$1,769.00
	LW12437	Transition (N)	08-00146	$1,832.00
	40310-09	Lower Tailpipe (OH)	08-00147	$411.00
	40310-08	Upper Tailpipe (OH)	08-00148	$293.95
	40310-10	Upper Tailpipe (OH)	08-00149	$389.00
PA32-260	68718-00	Muffler (OH)	08-00150	$385.00
	65038-00	LH Stack (OH)	08-00151	$445.00
	65039-00	RH Stack (OH)	08-00152	$445.00
PA32-300	68796-00	Muffler (OH)	08-00153	$381.00
	68793-00	Stack (OH)	08-00154	$446.00
PA32R-301-T	W15859	Westgate (OH)	08-00156	$1,164.00
PA34-200-I	78463-10	LH Tailpipe (OH)	08-00158	$511.00
	78463-10	RH Tailpipe (OH)	08-00159	$511.00
PA38-112	77669-02	Muffler (OH)	08-00160	$237.95
PA44-180	86299-07	Muffler (OH)	08-00161	$237.95
B-33 & 35A-G	186	LH Muffler (OH)	08-00162	$354.00
	189	RH Muffler (OH)	08-00163	$168.00
B-V35/A36	35-950005-1	LH Stack (OH)	08-00164	$473.00
	35-950005-3	RH Stack (OH)	08-00165	$445.00
	701-4	LH Muffler (N)	08-00166	$227.95
	701-20	LH Muffler (N)	08-00167	$278.95
	701-5	RH Muffler (OH)	08-00168	$394.00
	701-19	RH Muffler (OH)	08-00169	$426.00
	35-950004-9	RH Tailpipe (OH)	08-00171	$148.00
	35-950005-61	LH Tailpipe (N)	08-00172	$146.95
	35-950005-57	RH Tailpipe (N)	08-00173	$146.95
	35-950004-7	LH Tailpipe (N)	08-00176	$146.95
	A35-950005-37	LH Collector (N)	08-13108	$1,043.00
	A35-95000539	RH Collector (N)	08-13109	$1,043.00
B-35H-P	492-27	RH Muffler (OH)	08-00174	$240.95
	35-950005-61	LH Tailpipe (N)	08-00178	$113.00
	35-950005-57	RH Tailpipe (N)	08-00179	$136.00
B-55/58	96-950002-55	LE OTNBD Tailpipe (OH)	08-00180	$565.00
	96-950002-57	RE INBD Tailpipe (OH)	08-00181	$550.00
	96-950002-59	LE INBD Tailpipe (OH)	08-00200	$550.00
	96-950002-61	RE OTNBD Tailpipe (OH)	08-00201	$550.00
	96-950002-31	Riser Cyl. #3 (OH)	08-00202	$321.00
	96-950002-7	Riser Cyl. #4 (OH)	08-00203	$319.00
	96-950002-33	Riser Cyl. #5 (OH)	08-00204	$202.95
	96-950002-9	Riser Cyl. #6 (OH)	08-00205	$201.95
B-Sundowner	099001-127	Muffler (OH)	08-00206	$684.00
B-Sport	099001-126	Muffler (OH)	08-00207	$684.00
B-Sierra	099001-131	Muffler (OH)	08-00208	$891.00
Bellanca Citabria	3-1493R	Muffler (OH)	08-00209	$253.95
	3-1493L	Muffler (OH)	08-00210	$253.95
Bellanca 8KCAB	099001-046	Muffler (OH)	08-00213	$561.00
Bellanca 8GCBC	099001-046	Muffler (N)	08-13106	$719.00
Bellanca 7GCAA	099001-050	Muffler (N)	08-13104	$719.00
Bellanca 7ECA	099001-049	Muffler (OH)	08-00217	$689.00
Cirrus	A21892-001	Heat Exchanger	08-12152	$798.00
Grumann AA1 Yankee	099001-113	Muffler (OH)	08-00218	$789.00
Grumann AA1 A&B	099001-137	Muffler (OH)	08-00219	$749.00
Grumman AA1/ AA5/ AA5A/ AA5B	AWI099001-102	Straight Riser (N)	08-07523	$76.75
Grumann AA5 Traveler	099005-148	Muffler (OH)	08-00220	$684.00
Grumann AA5A Cheetah	099005-195	Muffler (OH)	08-00221	$681.00
Grumann AA5B Tiger	099001-191	Muffler (OH)	08-00222	$721.00
Mooney M20	630060-501	180 Muffler (OH)	08-00223	$675.00
	630060-503	200 Muffler (OH)	08-00224	$693.00
Musketeer	AWI099001-120	Straight Riser (N)	08-13107	$81.75
American Champiom	A099005-190	O-320 Muffler	08-10701	$677.00
American Champiom	A099005-193	O-360 Muffler	08-10702	$677.00

08-01305

EP

Note: (N) or (OH) after description indicates New (N) or Overhauled (OH) condition. All overhauled parts carry a care charge. Please Order according to "Our Part No."

AIRCRAFT SPRUCE WEST
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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

NICROCRAFT EXHAUST PARTS

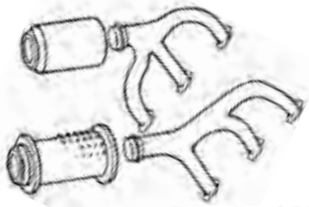
NICROCRAFT EXHAUST PARTS BUILT TO TAKE THE HEAT

Aircraft Spruce & Specialty Co. offers fully overhauled and factory new exhaust components for use in most general aviation aircraft. Manufactured by Wall Colmonoy Corp. Nicrocraft exhaust parts are built to the latest original equipment specifications. Heat-resistant 321 stainless steel is used in the construction of all new p arts. Bellows are made of Inconel alloy for superior heat resistance. Individual exhaust components and complete systems are available for virtually all single and twin engine Cessna, Piper, Beech, Bellanca, Grumman, Mooney, and Rockwell aircraft. (Please provide your complete aircraft and engine model and serial numbers, year of aircraft, and exact components required.) Most components are available for immediate shipment.

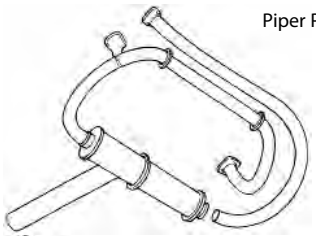
FACTORY NEW EXHAUST PARTS

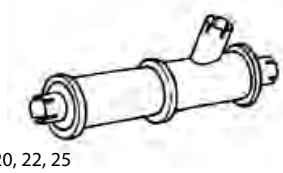
Cessna 180/182/185

Beechcraft 33/A33/B33/35

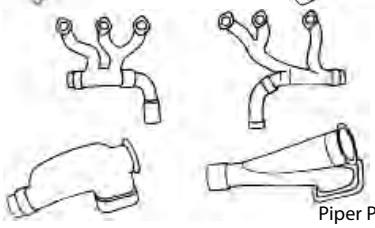


Piper PA-18





Piper PA-12, 14, 16, 20, 22, 25



Piper PA-23 Turbo

CESSNA 150 (MODELS G-L)

Aircraft	Description / OEM #	Part No.	Price
Cessna 150	Muffler RH / #0450400-26	8300-4	$309.00
Cessna 150	Muffler LH / #0450400-3	8300-3	$309.00

CESSNA 152/A152

Aircraft	Description/OEM #	Part No.	Price
Cessna 152 (S/N 735-975)	Muffler/#454009-5	CEM0025	$309.00
& A152 (S/N 978 & up)	Muffler/#454009-6	CEM0024	$319.00

CESSNA 170/172

Aircraft	Description / OEM #	Part No.	Price
C170,172, A	Muffler LH / #0550157-9	221-9	$477.95
Cont 0-300/C145	MufflerRH / #0550157-32	221-32	$477.95

CESSNA 172B-H/175

Aircraft	Description / OEM #	Part No.	Price
Cessna C172B-H & 175 B-D	Muffler LH&RH / #	568-110	$324.95
Cessna R172	Muffler / #1455009-3	CEM0023	$385.95

CESSNA 172

Aircraft	Description/OEM #	Part No.	Price
C172 O-320	Stack/#1754007-1	W1754007-1	$145.75
C172 O-320	Stack/#1754008-1	W1754008-1	$145.95
C172 O-320	Stack/#1754009-1	W1754009-1	$145.95
C172 O-320	Stack/#1754010-1	W175010-1	$158.00

CESSNA 180/182/185

Aircraft	Description / OEM #	Part No.	Price
Cessna C180,C182, & 185 late model	Muffler/#0750161-28/89	CEM0002	$332.95
180B,C,D,E,F	Heat Muffler 0750130-44	CEM0001	$345.00
182B,C,D,E,F	Heat Muffler 0750130-9	CEM0006	$403.95
	Heat Muffler 0750130-12	CEM0009	$345.00
210B s/n58086&up to M	Heat Muffler LH/#1250250-5	650-43	$404.00
C210B	Muffler RH 1250251-16	650-92	$309.95
C210B	Collector LH 1250263-2	650-25	$429.95
C210B	Collector RH 1250264-2	650-36	$429.95

BEECHCRAFT 33/A33/B33/35

Aircraft	Description / OEM #	Part No.	Price
Beechcraft 33, A33, B33, 35	Heat Muffler RH/#186-30	186-30	$479.00
	Muffler RH / #189	189	$237.95
	Stack Assy RH/#35-950116	BES-0001	$470.00
	Stack Assy LH/#35-950118	BES-0002	$445.95

BEECHCRAFT C33A/36/A36

Aircraft	Description / OEM #	Part No.	Price
C33A,E33A,F33A	Muffler LH/#701-20	701-20	$234.95
C, S35, 36, A36	Heat Muffler RH/#701-19	701-19	$368.95
C33A, 36, A56	Collector LH / #35-9016-1S	08-00853	$453.95
C33A, 36, A36	Collector RH / #35-9016-3/5S	08-00854	$472.95

BEECHCRAFT H35/P35 THRU S/N D-7108

Aircraft	Description / OEM #	Part No.	Price
Beechcraft H35,	Heat Muffler LH/492-43	492-43	$434.95
J, K, M, N, P35	Muffler RH/#492-27	492-27	$240.95

PIPER PA-12, 14, 16, 20, 22, 25

Aircraft	Description / OEM #	Part No.	Price
PA-12, 14,16, 20, 22, 25	Muffler / #10308-03	PIM0003	$419.95

PIPER PA-18

Aircraft	Description / OEM #	Part No.	Price
Piper PA18	Muffler / #12433-15	PIM0006-100	$419.95

PIPER PA-28

Aircraft	Description / OEM #	Part No.	Price
PA-28-140, 150, 160	-140 Muffler w/o shroud / #99482-00	PIM0001	$359.00
PA-28-151,161,180,181	Muffler (2 req.)/#66894-03	PIM0007	$268.95
PA-28R,180, 200, 201, 236	Muffler (2 req.)/#67517-00 3 req. for 236	PIM0004	$283.00
PA32-300,32-760001 & up, PA32-R300	Muffler (3 req.) 67517-00	PIM0004	$283.00

PIPER34-200 SENECA I

Item	OEM No.	Part No.	Price
Left hand Tailpipe Core	78463-10	08-05885	$800.00
Right hand Tailpipe Core	78-463-18	08-05886	$800.00

OVERHAULED EXHAUST PARTS

Aircraft	Description / OEM#	Part No.	Price
Beechcraft C33A, E33A, F33A, C, S35, 36, A36	Heater Muffler RH w/o shroud / #701-19	701-19R	$276.95
Cessna 210B	Heater Muffler LH / #1250250-15	1250250-5R	$239.00
Piper PA-18	Muffler / #12433-15	12433-15R	$329.00

PIPER EXHAUST CLAMP

This clamp is used on the exhaust system. The spot weld on the V Band is failing. The failure could result in the release of high-temperature gasses inside the engine compartment and possibly cause an in flight fire according to the published AD.

P/N 05-04866 ..... $583.50

EP

FAA/PMA EXHAUST COMPONENTS

CESSNA & BEECH FAA / PMA REPLACEMENT MUFFLERS & EXHAUST COMPONENTS

FAA/PMA approved equivalents.
Cessna 120, 140, 150 Exhaust Systems: Include one left and one right muffler, shroud, tailpipe and clamps.
Cessna 120, 140, 150, 150A thru H, J, K, A150K, L & M Muffler Systems: Muffler with attached stacks. Original Cessna 120 & 140 shrouds will not fit the mufflers below.
Cessna 152 & 152A STC'D Exhaust System: For Cessna 152 S/N 15279406-15283591; F15201429-F15201673; A1520735-1520878; FA1520337-FA1520357. Ideal for homebuilts using 0-235, L2C, N2C and 0-320 Lycoming Engines.
Cessna Tailpipe Extensions: Cessna 150, 170 and early model 172 replaces original exhaust pipe Cessna P/N 0450338-66, 0550157-3 and 055015733. Extends 2" past original tailpipe, 2" OD stainless steel, Bolt-on, End cowling smudges and Reduces cabin noise.

Description	Part No.	Price
Cessna 120/140 Exhaust System	05-05279	$1,552.00
Cessna 150 Exhaust System	05-05280	$1,164.00
Cessna 120, 140, 150 Muffler Lh	05-05271	$538.00
Cessna 120, 140, 150 Muffler Rh	05-05272	$515.00
Cessna 120, 140, 150 Lh Shroud	05-05281	$194.80
Cessna 120, 140, 150 Rh Shroud	05-05282	$194.80
Cessna 150 Tailpipe, Lh	05-05273	$87.99
Cessna 150 Tailpipe Rh	05-05274	$131.99
Muffler To Tailpipe Clamp	05-05275	$33.50
Cessna 120, 140 Tailpipe, Lh	05-05276	$87.95
Cessan 120, 140 Tailpipe, Rh	05-05277	$111.75
Cessna 150 Exhaust System	05-05278	$36.65
S/s Lycoming Flange	05-05292	$6.60
Riser, #4 Cylinder	05-05294	$79.75
Riser, #1 Cylinder	05-05295	$79.75
Riser, #3 Cylinder	05-05296	$79.75
Clamp Assy	05-05297	$13.50
Muffler Shroud	05-05298	$355.00
Cessna 152 Muffler Only	05-05299	$468.00
Cessna 172 Muffler, S/n 17259224 And On	05-05249	$637.00
Cessna 172 Muffler, S/n 17259224 To 59223	05-05250	$509.00
Cessna 172 Muffler, S/n 17265375 To 68582	05-05251	$554.00
Cessna 180 Muffler	05-05262	$665.00
Cessna Extension Tailpipe	05-05269	$198.75
Extended Tailpipe	05-05302	$118.75
Cessna 180 Tailpipe Extension	05-05270	$84.75
Musketeer Muffler	05-05263	$478.00
Musketeer Muffler Shroud	05-05264	$218.95

AERONCA FAA/PMA STACKS & HEAT MUFFS

Aeronca 7AC & 11AC stacks, fits Continental 65 thru O-200 engines.

Description	Part No.	Price
Type Or Paste Your Content Hereaeronca Exhaust Stacks Aluminized Mild-steel Pair	05-05236	$372.00
Aeronca Lh Exhaust Stack Aluminized Mild-steel	05-05237	$259.95
Aeronca Rh Exhaust Stack Aluminized Mild-steel	05-05238	$223.95
Aeronca Heat Muff Aluminized Mild-steel Set Of 2 (1 Pair Needed Per Stack)	05-05247	$145.75
Aeronca Exhaust Stacks Lh Mild Steel	05-08067	$195.75
Aeronca Exhaust Stacks Rh Mild Steel	05-08068	$195.75

TAYLORCRAFT FAA / PMA DESIGN B THRU BC12D MUFFLER

A-65, A-75 and C85-8 engines only. Fits B-through BC12D series. 1020 Mild Steel and cold galvanized spray finish (for corrosion protection).
Replaces OEM part BC-A6031. This system is compatible only with OEM shrouds. Not compatible with Univair shrouds.
Note: Exhaust system installation on Taylorcraft is unique in that it requires either the removal of the engine or the loosening of engine bolts. This is the original design.

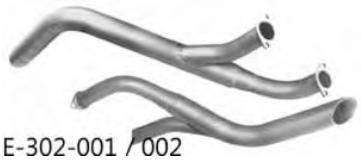
P/N 05-05246 .....$747.00

PIPER FAA / PMA REPLACEMENT MUFFLERS & EXHAUST COMPONENTS

Replacement mufflers & exhaust components for Piper Aircraft, all are FAA/PMA approved equivalents.
Note: Bale Assembly, complies with Service Bulletin No. 759 and is manufactured in accordance with FAA specifications. Wire bale is installed into tailpipe to avoid blockage of the tailpipe, should a baffle failure occur.
Requires Welding

Description	Part No.	Price
Pa-18 Super Cub Muffler	05-05256	$590.00
Piper Tailpipe Clamp	05-05253	$31.70
Piper Muffler Clamp With Pin 2-1/4 Id	05-04985	$31.80
Piper Pa-22 Tri-pacer / Colt Muffler	05-05254	$685.00
Piper Pa-22 Tri-pacer / Colt Tailpipe	05-05255	$168.75
Piper Pa-24-250 Comanche Muffler No Center Baffles	05-05307	$523.00
Piper Pa-24-250 Comanche Tailpipe	05-05303	$131.99
Piper Muffler Clamp 2-1/2 Id	05-05305	$57.75
Piper Pa-28 140 Cherokee Muffler	05-05257	$649.00
Piper Pa-28 140 Cherokee Muffler Shroud	05-05258	$362.00
Piper Pa-28 140 Cherokee Tailpipe With Bale Assembly	05-05259	$179.90
Piper Pa-28 28-180 Cherokee Dual Mufflers	05-05261	$447.00
Piper Pa-28r-180 200 Cherokee Arrow Muffler	05-05260	$306.00
Bale Assembly For Piper Exhaust Systems	05-05300	$53.75

LUSCOMBE & ERCOUPE FAA / PMA REPLACEMENT MUFFLERS & EXHAUST COMPONENTS



Replacement mufflers & exhaust components for Luscombe/Ercoupe Aircraft, all are FAA/PMA approved equivalents.

Note: Luscombe 8A, 8C, 8E &8F:
Replaces early style crossover.
Luscombe 8A, 8C, 8E &8F, Crossover 65 HP & Ercoupe stacks Model 415C series all have the extended-life hot aluminized mild-steel.

Description	Part No.	Price
Luscombe Exhaust Stack	05-05239	$624.00
Luscombe Lh Stack 65 Hp	05-05240	$359.00
Luscombe Rh Stack 65 Hp	05-05241	$305.00
Luscombe Cabin Heat Muff	05-05248	$240.95
Ercoupe Exhaust Stack	05-05242	$596.00
Ercoupe Lh Exhaust Stack	05-05243	$283.95
Ercoupe Rh Exhaust Stack	05-05244	$331.00
Luscombe Crossover System	05-05268	$667.00
Luscombe Crossover Rear	05-05265	$233.95
Luscombe Crossover Stack, Lh	05-05267	$268.95
Luscombe Crossover Stack, Rh	05-05266	$216.95
Continental 200 J-3 Exhaust Stacks	05-05283	$482.00
Continental 200 J-3 Exhaust Stack - Lh	05-05284	$254.95
Continental 200 J-3 Exhaust Stack - Rh	05-05285	$254.95
C85/c90 - 12 Exhaust Stacks	05-05286	$539.00
C85/c90 Exhaust Stack Lh	05-05287	$282.95
C85/c90 Exhaust Stack, Rh	05-05288	$282.95

EP

VHT FLAMEPROOF COATINGS

Originally designed for NASA's reentry spacecraft. Designed to withstand temps. up to 1500°F (816°C) VHT FlameProof coatings are capable of withstanding extreme environments of spacecraft, satellites, military aircraft, and motor sports. It survives where other paints can't, shields & protects, maintains the finish, prevents rust & corrosion, and resists oils & solvents. For aircraft applications the typical use is on high temperature steel components such as exhaust & turbocharging systems.Excellent for use as a heat resistant and anti-corrosion coating on exhaust manifolds and turbine casings. Both the Flat Aluminum and Flat Black are non-facing colors.

Flat Aluminum 16 oz. aerosol spray ..... P/N 08-00713 ..... $11.75
Flat Black 16 oz. aerosol spray ..... P/N 08-00714 ..... $11.75

THERMO-TEC HEAVY-DUTY SPRAY ADHESIVE

Thermo-Tec's new Heavy-Duty Spray Adhesive is a fast-drying, quick-bonding, high temperature contact adhesive. Use it wherever you need a secure, long-lasting, easy-to-apply bond. It is available in a generous 16.75 oz. can.

P/N 08-01026 ..... $14.60

HI-HEAT COATING

Finish off a clean and well-protected Exhaust Insulating Wrap application. Will protect the wrap from abrasion and harmful liquid spills. Extra resins and binders toughen the surface, extend the life of wrap by protecting it from friction, and seal the pores to minimize the penetration of harmful liquids. The 11 oz. coating comes in black and aluminum colors.

Black ..... P/N 08-06725 ..... $10.50
Aluminum ..... P/N 08-06730 ..... $10.50

BLACK SATIN COATING

The easiest to apply, Black Satin also requires bead or sand-blasting of all parts. It does not, however, require oven curing or burnishing. One 4oz bottle will cover one average exhaust system and will provide a long-lasting flat black finish.

4 oz. ..... P/N 13-01024 ..... $21.75

EXHAUST HEAT SHIELD

This heat shield is placed on exhaust where fuel lines, cable, etc. are close to exhaust and where heat may be a problem. Mounts with stainless radiator type clamp (not included). Fits exhaust pipes up to 2.5" diameter. Very popular on RV's and other homebuilt aircraft.

Single Unit ..... P/N 08-00050 ..... $14.75
Double Unit ..... P/N 08-00051 ..... $21.75

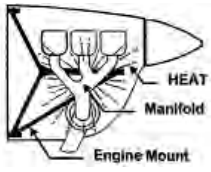
VARIEZE / LONG EZ CARBURETOR HEAT BOX

This box is an improved redesign of the original heat box. It eliminates the possibility of engine stoppage caused by worn parts plugging the carburetor intake.

Without Filter ..... P/N 08-01600 ..... $194.50
VE/LE Heat Box Repair Kit ..... P/N 08-01610 ..... $17.75
VE/LE Filter Only ..... P/N 08-01615 ..... $39.85
VE/LE Filter Cleaner Kit (cleaner & oil)
P/N 08-01620 ..... $12.95

ENGINE MOUNT HEAT SHIELDS

Heat damaged O-470 & O-520 engine mounts are a definite problem area. You can easily protect these engine mounts from further damage with these heat shields The aircraft manufacturers overlook providing heat protection in these areas when they designed and produced the aircraft. INSPECT ENGINE MOUNTS. Flaking paint, deterioration or pitting leads to cracking, and breakage – in other words, an UNSAFE CONDITION. If you want long-lasting protection from corrosion damage, the solution is install custom engine mount heat shields that are FAA & STC/PMA approved.



Avoid downtime and save money on airplane maintenance with this practical new device. The heat shields are built from an extremely durable 6061-T6 aluminum alloy and install in minutes. The complete kit includes installation hardware, instructions & copy of the Supplemental Type Certificate.

For Cessnas: Heat shield kit for 180, 180A-H, 180J, 180K, 182, 182A-R
P/N 08-01660 ..... $169.85

Heat shield kit 185A-E,A185F. Fits Standard and 3 bladed mounts.
..... P/N 08-00767 ..... $206.95

Replace. Intake Shields (heavy duty) PMA'd ..... P/N 08-00769 ..... $29.25

CARBURETOR INTAKE ASSEMBLIES (HEAT BOXES)

50256

P/N A40522 for Continental A-65 through C-125.
Also fits Lyc. 0-235, 0-290, 0-320 engines with MA3SPA, MA4SPA carburetors.
Complete assembly includes heat box, filter, gaskets. studs and pins.
Not for Certified Aircraft, Homebuilts Only.

Component	Part No.	Price
Heat Box	50256	$173.85
Filter	A40599	$79.75
Gasket	35923	$8.80
Studs (4 required)	24306	$38.95
Pins (4required)	24308	$19.90
Bottom Carb. Gasket	21323	$1.26
A40522 Assembly	08-01300	$498.95

CONT. 0-200 HEAT BOX CESSNA 150 STYLE HEAT BOX

For Cont. 0-200 engine as used on Cessna 150. Also fits Cessna 120, 140, and PA-22 Tripacer. Order filter, gaskets, studs & pins separately. Not FAA/PMA Approved.

P/N 641534 ..... $173.95
Cable 'B' Nut ..... P/N 05-16245 ..... $7.95

Heat Box for Cessna 170 - Similar to P/N 641534 above, but larger
P/N 08-01625 ..... $227.95

Similar to Cessna 170 box. Fits Lyc. 0-360, 0-470, etc. Uses brackett BA-5110 filter. ..... P/N 08-01630 ..... $268.95

LYCOMING AND CONTINENTAL CARBURETOR HEAT BOXES

Lycoming O-320 and Continental A65-100 Carb Heat Boxes. The 100-320 is 2-1/2" diameter height is 1" smaller flange.

Lycoming O-320 Carb Heat Box w/Tube ..... P/N 05-01388 ..... $224.95
Lycoming O-320 Carb Heat Box w/o Tube ..... P/N 05-06841 ..... $236.95
Lycoming A65-100 Carb Heat Box w/Tube ..... P/N 05-01387 ..... $246.95
Lycoming A65-100 Carb Heat Box w/o Tube ..... P/N 05-06840 ..... $237.95

CARB HEAT BOXES FOR PUSHER AIRCRAFT

Designed for airplanes and rotorwing aircraft with engines in pusher configuration using MA3/MA4 carburetors (not MA4-5). Uses same baskets as J-3 & C-150 boxes. ..... P/N 08-00855 ..... $208.50

USHER CARBURETOR HEAT BOXES

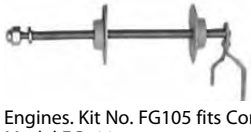
These high quality carburetor heat boxes are available for most common Lycoming & Continental engines. Not FAA approved. (Shown here with tube)

K1F Heat Box w/o tube ..... P/N 08-01601 ..... $163.80
K1M Heat Box with tube ..... P/N 08-01602 ..... $167.75
KO320 Heat Box with tube ..... P/N 08-01603 ..... $173.75
KO360 Heat Box with tube ..... P/N 08-01604 ..... $173.75

CARBURETOR INTAKE BOX BRACKET FOR CESSNAS

This carburetor intake box bracket mounts on top of the heat box and attaches to the engine to provide support for the heat box. Fits Cessna 150. P/N 08-01305 ..... $43.85

CARBURETOR HEAT BOX REPAIR KITS



Prevent carburetor heat box cracking - a common problem on Cessna 150 aircraft and Cont. O-200 engine. Kit consists of actuating shaft, 2 bearing assemblies and arm. Kit no. FG100 fits Cont. 0-200-A, B, C Engines. Kit No. FG105 fits Cont. 0-300-A, B, C, D, E engines.

Model FG100 ..... Kit No. 08-01309 ..... $68.75
ModelFG105 ..... Kit No. 08-01310 ..... $68.75

ECONOMY CARB HEAT BOX REPAIR KITS

These kits include new shaft & bearings.

Kit for Cont. C-85, C-90, 0-200 Engine
P/N 07-00110 ..... $42.75

Kit for Cont. C-145, 0-300 Engine
P/N 07-00120 ..... $43.50

Requires FAA form 337 for installation on certified aircraft

CARB HEAT BOX ARM HOLE REPAIR KIT

Use this kit to repair an elongated hole in the carburetor heat box actuating arm. Kit comes complete with new bolt and attaching hardware made of stainless steel. P/N 07-00130 ..... $13.75

CARBURETOR INDUCTION MANIFOLD (INTAKE SPIDER)

For O-200 engine ..... P/N 35145A-1 ..... $394.00
For A-65,C-75,C-85 & C-90 engines.
P/N 35145 ..... $324.00

EP

RAPCO REPLACEMENT EXHAUST GASKETS

High quality, economical stainless and copper beaded gaskets. Extra thick spiral woundstyle available "Blow Proof"

	Style	RAPCO P/N	Use As Replacement For: OEM P/N	Airborne P/N	Superior P/N	Use on These Engine Models	Our P/N	Price Each
CONTINENTAL	Solid	RA-630365	630365	N/A	SA630365	IO-360-A, C, D, G, H, J, K	08-05215	$1.70
	Spiral Wound	RA-970	N/A	970	N/A	IO-360-A, C, D, G, H,J, K TSIO-360-A, B	08-05270	$7.50
	Solid	RA-632837	632837 21493	157	SA 632837	A-65, A-75,C-85-12F, C-90-8F,12F, 14F, -16F,E-165,E-185,E-225,O-200-A,B,O-300-A,C,D,O-470-A,E,J E-165, E-185, E-225O-200-A, B, O-300-A, C, DO-470-A, E, J	08-05237	$1.65
	Spiral Wound	RA-627429	627429	999	SA 627429		08-05229	$8.65
	Solid	RA-631544	631544 537379	158	SA631544	O-470-B, G, K, L, M,P, R, S, U	08-05244	$1.67
	Spiral Wound	RA-628260	628260	972	SA628260	O-470-B, G, K, L, M,P, R, S, U,IO-470-D, U, V, TSIO-470-B TSIO-520-B, C, D GTSIO-520-C, D	08-05260	$7.85
LYCOMING	Solid	RA-75118	75118 73720 67196 77611	160	N/A	0-290,0-320,IO-320,0-340,0-360,HO-260-B,IO-360-A,-B,-C,HIO-360-A,-B-C,V0-435,TVO-435,G0-480,GSO-480,ISGO-480,O-540-A,-B,-E,-G,IO-540-A,-C,-D,-G,-J,-K,IG0-540-A,IGS0-540-A,10-720-A	08-05218	$2.35
	Spiral Wound	RA-77611	77611	1000	SL77611		08-05211	$7.50
	Solid	RA-LW15619	LW15619 74756	161	SL15619	TIO-541	08-05219	$3.35
	Spiral Wound	RA-LW15486	LW15486	971	N/A		08-05286	$11.65
	Solid	RA985	3503			R-985-AN-1,-3,-4,-6,-6B,-10,12,-12B,-14B	08-64452	$7.95

EP

REPLACEMENT GASKET FOR WOODWARD GOVERNORS

Part Name	Approved Replacement for Part No.	Model Eligibility	Part No.	Price
Engine Accessory Drive Gasket	Woodward Gov. 206684 Pratt & Whitney 3039526	PT6A-20/20A/-20B/-21/-25C/-27/-28/-34/-34AG/-34B/-36/-38/-41/-42/-42A/-60A/-60AG/-61/-67A/-67AF/-67AG/-67B/-67D/-67R/-67T PT6A-45A/-45B/-45R/-65B/-65AG -65AR/-65R/-114/-114A/-135/-135A	08-06264	$146.95
Governor Gasket	Woodward Gov. 206685 Pratt & Whitney 3118953-01	PT6A-6/-6A/-6B/-11/-11AG/-15AG/-20/-20A/-20B/-34/-34AG/-34B/-36/-38/-41/-42/-42A/-45/-45A/-45B/-45R/-60A/-60AG/-61/-65B/-65R/-65AG/-65AR/-67/-67A/-67AF/-67AG/-67B/-67D/-67R/-67T/-110/-112/-121	08-07154	$84.75

LYCOMING ASSEMBLY DRIVE GASKET SL73818

Lycoming Assembly Drive Gasket SL73818. Replacement for Textron Lycoming P/N 73818.

P/N 08-00306 ..... $5.35

2577256 PRECISION AIRMOTIVE GASKET PEX-1

Gasket part number 365533 is no longer available from Precision Airmotive. The new gasket, part number 2577258 is available and should be used in place of 365533.

P/N 07-01312 ..... $0.66

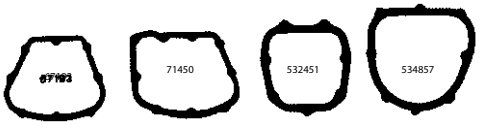
TCM VACUUM PUMP GASKET 653487

TCM vacuum pump gasket 653487. This is for the Continental 0200 and the 0470.

P/N 08-00297 ..... $1.85

REAL PREMIUM SILICONE VALVE COVER GASKETS

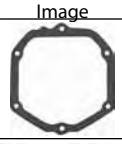
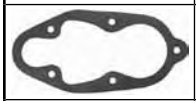
REAL are twice as thick as typical gaskets and have been hot oil and dry heat tested at 300°F. Only REAL gaskets seal uneven surfaces, eliminate corrosion, and reduce maintenance costs. They may be reused, are installed dry, and maintain screw torque. Indefinite shelf life. Highly recommended by Rutan Aircraft Factory.



Part No.	Application	Price Ea.	Part No.	Applicaion	Price Ea.	Part No.	Application	Price Ea.
RG-75906	0-235; 0-290; O,IO,LIO-320; O-340;O-360-A,B,C,D; IO-360-B; HO-360-A,B;HIO-360-B; VO,IVO-360;O-540-A,B,E,F,G; IO-540-C,D,J,N,R. (6 holes)	$8.65	RG-71450	IO-540-B, E, M SERIES; TIO/LTIO-540-A (9 holes)	$8.75	RG-534857	O-470;IO,TSIO-470;IO,TSIO-520	$9.65
						RG-632310	IO, TIO, TSIO-360.	$4.25
			RG-530162	A-65; C-75, 85, 90, 145, 175; O-200; O-300.	$7.85	RG-632459	GTSIO-520; TSIO-520-BE.	$4.35
RG-67193	IO-360, VO/GO-435, GO-480, IO-540, VO-540, TIVO-540, IO-720 (8 holes)	$7.75	RG-532451	E-185; E-225; IO-346; O-470-A,E,J; IO-470-J,K	$7.95	RG-17727	4A-235, 6A-335, 6A4-150, 6A4-165, 6A4-200, 6A5-335, 6A5-350.	$7.65

1/8 INCH SILICONE VALVE COVER GASKETS

Valve cover gaskets are manufactured from a silicone rubber compounded especially for lubricating oil resistance and low compression set. It has a recommended temp. operating range of –67 to 446 F and will remain flexible while operating in the noted temp. range. One of the biggest benefits of replacing the factory cork gaskets with the Silicone rubber gaskets is that they are reusable and are easy to work with and are 1/8" thick silicone rubber.

Image	OEM Part No.	Application	PN	Price
	75906-SP	Lycoming O-235, O-290, O-320, IO320, O-360, IO-360, HIO-360, O-480, O-540, IO-540	05-11181	$8.75
	71450	Lycoming IO-540-B, E, M series, TIO/LTIO-540-A	05-11182	$10.94
	67193	Lycoming IO-360, VO/GO-435, GO-480, IO-540, VO-540, TIVO-540, IO-720	05-11183	$8.75
	632310	Continental IO-360, TSIO-360, LTSIO-360	05-11184	$5.96
	632459	Continental GTSIO-520 series, IO-550-G, TSIO-520-BE	05-11185	$5.96
	530162	Continental A-65, C-75, C-85, C-90, C-125, C-145, O-200, O-300, GO-300	05-11186	$8.75

REAL GASKET LYCOMING ENGINE PARTS

LYCOMING TO-360-C,F, TIO/TIGO-541 - Valve Cover Gasket (8 holes) ..... P/N 08-07384 ..... $9.75

"O" SERIES LYCOMING VALVE COVER GASKETS

Note: 08-05882 is similar to 67193 and RG-67193 but not FAA Approved for Certified Aircraft. 08-01187 is similar to 75906 and RG-75906 but not FAA Approved for Certified Aircraft.

These homebuilder's Lycoming valve cover gaskets replace the original cork gaskets which come standard on Lycoming 0-235, 0-320 and 0-360 engines. These new gaskets are molded from high temperature silicone rubber and do not harden over time so they can be re-used again and again. This hi-tech silicone rubber offers a much lower compression set, so it is superior at maintaining an oil-tight seal for the life of the engine. NOT FAA approved. For experimental aircraft only. P/N 08-01187 ..... $4.85

ANGLED VALVE "IO" SERIES LYCOMING VALVE COVER GASKETS

These gaskets are for the fuel injected "IO" series, sometimes referred to as the Angle Valve cylinder Lycoming, as well. these gaskets are molded from the same high-temperature silicone rubber as the "O" series gaskets above, and do not harden over time, so they can be reused again and again.This hi-tech silicone rubber offers a much lower compression set, so it is superior at maintaining an oil-tight seal for the life of the engine. They are not FAA approved and are not manufactured under a PMA. These are similar to Lycoming part number 67193 used on Angled valve Lycoming engines IO-360, IO-540, IO-720. P/N 08-05882 ..... $6.70

EP

EXHAUST GASKETS

EXHAUST MANIFOLD NUTS

Part No.	Thread Size	Type	Engine Application	Price Each
21247	1/4-28	Brass	Cont., O-470	$3.35
22022	5/16-24	Brass	Cont. A-65, C-75 thru C-90, O-200, O-300	$0.86
STD1410	5/16-18	Steel	Lycoming	$1.79

EXHAUST STUDS FOR CONTINENTAL ENGINES

This high quality exhast/engine studs produced from corrosion resistant 321 stainless steel in 5/16" X 18"-5/16" X 24" standard thread size are a direct replacement for the TCM Continental part number 402-151 stud. FAA/PMA approved for the Continental engines C-75, C-85, C-90, O-200 series engines, and o-300 (early) series engines.

P/N 08-07282 ..... $9.85

Stud for Continental Engines O-470, IO-470 (1/4"x20-1/4"x28)

P/N 08-07281 ..... $8.85

STAINLESS STEEL EXHAUST STUDS FOR LYCOMING ENGINES

Produced from corrosion resistant 321 in 5/16 x 18 standard thread size and are a direct replacement for the Lycoming part number 31C12 stud. Stop stud corrosion and rust out problems, stop expensive cylinder repair costs cause by broken studs, allow easy removal of exhaust systems for gasket replacement or inspection, but does not feature a safety wire hole (refer to p/n 08-06780 for safety wire hole feature). FAA approved for all Lycoming engines from 0-235 through 0-540.

CAD Plated Steel with out Safety Wire Hole..... P/N 08-06279..... $4.70

Stainless Steel With safety wire hole feature..... P/N 08-06780.....$11.50

BLO-PROOF EXHAUST GASKETS

These gaskets are manufactured in a 1-piece design in 7/64" thick steel. They have a split metal inner ring which provides an absolute seal and they are guaranteed not to blow off. Engine manufacturer's parts.

Continental P/N 627429 for all A, C and E Series .....$13.50 Ea

Continental.....P/N 628260 for 0-470-R..... $8.65 Ea

Lycoming P/N 77611 for 4 & 6 Cylinder Engines..... $7.85 Ea

COPPER EXHAUST GASKETS

Continental P/N 21493 (now P/N 632837 stainless steel)

Cont.#21493 for A-65 to 0-300 (4) ..... P/N 08-05237 .....$1.65 Ea

Cont. #632837 Stainless Steel..... P/N 08-13232 .....$1.63 Ea

Lycoming 0-320 except h series..... P/N 77611 ..... $7.85 Ea

Side view
Cross Section

AIRBORNE SOLID COPPER BLO-PROOF GASKETS

2 gaskets used per cylinder, with raised beads interlocked facing the exhaust stack flange. Eight required for 4 cyl. engine, 12 for 6 cyl. engine.

Engine Model Number	Airborne P/N (Use 2/ Cyl.)	Price Each
All Lycoming Engines except IO-540-B,-E,-M,-WD,IGO-540-B,IGSO-540-B,TIO-540 series,TIO-541 series TIGO-541 series, IO-540-B,-E,-M,-WD,IGO-540-B,IGSO-540-B	160	$14.75
TIO-540 Series, TIO-541 Series, TIGO-541 Series	161	$13.30
A-65 Series, C-85 Series, C-90 Series,)-200 Series,O-300 Series, GO-300 Series, E-185 Series,E-225 Series, O-470-A, -E, -J, IO-470-J, -K	157	$9.90

STEEL EXHAUST STACK FLANGES

MILD STEEL

Cont. A&C Series,0-200,0-300 ..... P/N 33011 ..... $9.85 Ea

Lycoming 0-235 to 0-540 ..... P/N 33021 ..... $9.90 Ea

STAINLESS STEEL

Continental A & C Series..... P/N 33101 .....$12.75 Ea

Continental IO-470 thru IO-520 ..... P/N 33103.....$12.65 Ea

Lycoming 0-235 thru IO-360..... P/N 33102.....$12.50 Ea

Lycoming IO-540..... P/N 33104.....$12.75 Ea

CONTINENTAL W-670 GASKETS

The following gaskets are FAA-PMA approved for use on the following engines: W-670-6A, -6N, -16, -K, -M, -23, -24.

Part No.	Model	Description	Price
08-07232	TA22075	COMPLETE OVERHAUL GASKET SET	$452.00
08-07233	TA22065	TOP OVERHAUL GASKET SET	$271.95
08-07234	YA22055	CYLINDER REPLACEMENT SET	$51.90
08-07235	YA2096-1	INTAKE PIPE SEAL AT CASE	$6.80
08-07236	YA2247-1	MAGNETO MOUNT GASKET (VMN TYPE)	$6.60
08-07237	YA2249-1	STARTER MOUNT GASKET	$6.50
08-07238	YA2589-1	OIL SCREEN HOUSING GASKET	$3.85
08-07239	YA2827-1	GASKET INTAKE PIPE AT CYL.	$13.90
08-07240	YA2845-1	CYL. BASE SEAL	$4.90
08-07241	YA3112-1	ACCESSORY CASE GASKET	$28.80
08-07242	YA3710-1	DUPLEX PUMP MOUNT GASKET	$7.50
08-07243	YA3939-1	DUPLEX INTERNAL GASKET	$7.50
08-07244	YA20254-1	ROCKER COVER	$4.40
08-07245	YA20254-R	ROCKER COVER RUBBER TYPE BLACK	$7.80
08-07246	YA20266-1	SEAL PUSH ROD TUBE	$4.55
08-07247	YA20268-1	LIFTER GUIDE GASKET	$3.90
08-07248	YA20268-R	LIFTER GUIDE GASKET RUBBER TYPE	$5.35
08-07249	YA20275-1	ROCKER HOSE .	$6.85
08-07250	YA20421-1	SEAL SCAVAGE OIL LINE BETWEEN CASES	$3.80
08-07251	YA20423-1	FUEL PUMP MOUNT GASKET	$4.40
08-07252	YA20467-1	ROCKER ELBOW GASKET	$2.23
08-07253	YA20532-1	SCAVAGE PUMP LEAD GASKET	$7.50
08-07254	YA20748-1	OIL OUTLET GASKET	$2.90
08-07255	YA20889-1	MAGNETO DRIVE GEAR SEAL	$21.50
08-07256	YA20951-1	FRONT SUMP GASKET	$5.35
08-07257	YA20952-1	REAR SUMP GASKET	$5.35
08-07258	YA20977-1	DUPLEX OIL PUMP SEAL	$12.70
08-07259	YA22142-1	SCAVAGE PUMP SEAL	$13.75
08-07260	YA22143-1	FUEL PUMP GASKET	$4.40
08-07261	YA22442-1	GENERATOR MOUNT GASKET	$5.25
08-07262	YA22443-1	TACH DRIVE GASKET	$3.85
08-07263	YA22446-1	SCAVAGE PUMP MOUNT GASKET	$6.50
08-07264	YA22453-1	AIR HORN TO CARB. GASKET	$6.50
08-07265	YA22803-1	CARBURATOR MOUNT GASKET	$4.40
08-07266	YA22931-1	MAGNETO MOUNT GASKET (SF7 TYPE)	$6.60
08-07267	YA24335-1	PUSH ROD TUBE GASKET	$3.35
08-07268	YA24355-R	PUSH ROD TUBE GASKET RUBBER TYPE	$5.35
08-07269	YA500060-1	STEP DRIVE TO CASE GASKET	$3.90
08-07270	YA500062-1	STEP DRIVE GASKET	$5.35
08-07271	YA531090-1	STARTER MOUNT GASKET (Thick)	$11.75

EP

EXHAUST INSULATING PRODUCTS

HIGH VELOCITY EXHAUST JACKET

An innovative way to insulate and block radiant heat. Cover the tubes vertically allowing for a consistent fit. The fit allows the exhaust system to expand as it comes up to operating temperatures without restrictions and provides air space for added insulation. Uses Thermal Conduction Technology (TCT), developed by Thermo-Tec, and can be applied with the headers in the vehicle.

4–6 cyl. kit ..... P/N 08-00597 ..... $72.75
8 cyl. kit ..... P/N 08-00598 ..... $94.80

SPARK PLUG WIRE HEAT SHIELD

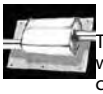
The ultimate protection for spark plug wires and boots from conductive and radiant heat. The dual-purpose sleeve has a surface that reflects over 90% of radiant heat, while the inside silica-based fabric prevents conductive heat from penetrating. P/N 08-00612 ..... $17.50

TURBO KIT

Designed to protect, improve performance, and eliminate turbo lag of a turbo charger. Fits a wide variety of turbines. The custom cut-to-fit kit comes with an excessive amount of material to cover turbos from the smallest automotive application to heavy-duty truck applications.

4 cyl. kit ..... P/N 08-00613 ..... $98.75
6–8 cyl. kit ..... P/N 08-00614 ..... $118.95

MUFFLER/CAT HEAT SHIELD KIT



The 40"x 24" mylar Heat Shield is made up of woven silica with a flexible mylar finish. Can be installed between the catalytic converter, muffler, or any other component to reflect radiant heat away from the undercarriage of the car. The kit includes all necessary fasteners. P/N 08-00616 ..... $64.85

HEAT TERMINATOR ULTRA-LITE

Made of the highest-quality insulating materials available today. The material is made of a highly-textured aluminum composite surface on one side, with a high-temperature silica felt center and a durable mylar composite facing. Uses Thermal Conduction Technology (TCT), developed by Thermo-Tec.

8"x 12" ..... P/N 08-00617 ..... $67.95
10"x 18" ..... P/N 08-00618 ..... $96.80
18"x 18" ..... P/N 08-00619 ..... $117.75
18"x 24" ..... P/N 08-00620 ..... $124.75
24"x 24" ..... P/N 08-00621 ..... $132.85
24"x 36" ..... P/N 08-00622 ..... $140.80

STARTER HEAT SHIELD

Starters take in a lot of damaging heat that destroys the windings of the starter & solenoid. The Starter Heat Shield will reflect over 90% of radiant heat, adding life to the starter and assuring reliable starts. The Starter Heat Shield is a universal kit that fits all starters. P/N 08-00611 ..... $27.75

THERMO SHIELD

Thermo-Shield protects hoses & wires from radiant heat. Used in applications where it is difficult or not practical to disconnect one end of the hose or wire. The adhesive-backed composite construction tape can easily be wrapped around the hose or wire to make a clean, professional appearance. 15"x 1.5" roll.

P/N 08-00602 ..... $17.85

THERMO–FLEX

Thermo-Flex Aluminum is a composite heat shield material with unlimited uses. The material is manufactured with a combination of materials to provide abrasion-resistance, thermal insulation, and physical containment of hoses and wiring. The combination of aluminum, silica, and stainless steel is combined to produce a sleeving that is flexible, lightweight, and strong. The aluminum-silica combination can be slit for applications such as wire looms or hose covering without disconnecting the ends of the wire or hoses. Thermo-Flex Aluminum can withstand extreme temperatures of up to 750°F. Packaged in 10 ft. lengths.

5/8" ..... P/N 08-00623 ..... $46.50
1.25" ..... P/N 08-00626 ..... $64.75
0.75" ..... P/N 08-00624 ..... $49.50
1.5" ..... P/N 08-00627 ..... $75.75
1" ..... P/N 08-00625 ..... $58.75
3" ..... P/N 08-00628 ..... $126.75

FIREPROOF SHIFTER BOOT

The Fireproof Shifter Boot is made up of woven silica with a flexible Mylar finish. The shifter boot was developed as a fire barrier for high speed engine fires, which can burn away rubber boots in seconds.

P/N 08-00615 ..... $30.50

COOL-IT PLUG WIRE SLEEVES

This unique spark plug & ignition wire protector comes in five sporty colors; red, orange, blue, black & natural.These dual-purpose sleeves enhance performance, reduce misfires, extend plug wire life and will not react with petroleum products. The double-wall construction keeps the wire and boot cooler in a high-temperature engine. Its universal size fits most boots, is easy to install & non-flammable.

4-Pack ..... P/N 08-01027 ..... $27.90
6-Pack ..... P/N 08-01030 ..... $41.60

COOL-IT MAT

Use the Cool-It Mat to battle excessive heat and noise that penetrate the driver compartment through the firewalls and floorboards. It is also perfect in doors, under hoods, and above transmission housings. Cool-It Mat is composed of resin-bonded silica blanketing insulation sandwiched between a mylar facing on one side and a foil facing on the other. The highly-reflective mylar reflects heat away from surfaces, while the foil side is orientated away from the heat source to conduct any penetrating heat across its surface thus providing the ultimate in heat protection. The silica blanketing is a duel-density composite and is the main sound insulator. It is easy to trim and can be applied with the push-in fasteners provided or any weather strip adhesive. P/N 08-00610 ..... $35.90

THERMO–SLEEVE

Lamination of a high-temperature fabric to a highly-reflective foil is the makeup of Thermo-Sleeve, which provides protection from radiant heat for hoses and wires. Thermo-Sleeve's ultra light-weight construction provides more insulating than traditional bulky rubber-coated fiberglass. The aluminized sleeving reflects over 90% of radiant heat, and is fireproof & oil resistant. Comes packaged in 12-ft lengths, and sold in 5 different inside diameter sizes.

12' 1/2" ID ..... P/N 08-00605 ..... $51.50
12' 1" ID ..... P/N 08-00606 ..... $70.75
12" 1-1/2' ID ..... P/N 08-00607 ..... $87.95
12' 2" ID ..... P/N 08-00608 ..... $104.95
12" 2-1/2" ID ..... P/N 08-00609 ..... $123.75

HEAT BARRIER - ADHESIVE BACKED

Aluminized Heat Barrier is made up of woven silica with a flexible aluminized finish. The highly reflective surface of the material is capable of withstanding radiant temperatures in excess of 2000°F. The adhesive backed composite construction material can easily be applied to any surface or wrapped around a hose or wire to make a clean professional appearance. Note: Clean surface before applying. Adhesive is rated up to 300° F. Don't apply to any parts of exhaust system. This product is designed to block radiant heat only!

12" x 12" ..... P/N 08-00630 ..... $12.50
12" x 24" ..... P/N 08-00600 ..... $20.75
24" x 50 foot Roll ..... P/N 08-07660 ..... $654.00

HEADER MANIFOLD BLANKET

The Header Manifold Blanket provides excellent heat-retention for exhaust headers and manifolds. This flexible heat shield simply clips into place on the upper portion of the header. The fabric side of the material should be facing the heat source, and the aluminized side facing away, offering protection from abrasion and harmful liquid spills. Available in two sizes: (2) 20" by 24" blankets for V6 & V8 applications, and (1) 36" x 40" blanket for straight 6 & 4 cylinder engines.

20"x24" ..... P/N 08-00603 ..... $89.75
36"x40" ..... P/N 08-00604 ..... $84.75

GRAPHITE BLACK WRAP

Graphite Black Wrap offers the same unrivaled performance and insulating properties as our original exhaust wrap and more. Traditionally, high-heat coating spray had to be applied to the exhaust wrap to color it black. Now new Graphite Black Wrap eliminates the process of coating the wrap with its patented Thermal Conduction Technology (TCT) high-heat color pigment. Graphite Black Wrap is available in 2" widths, in 50-ft rolls.

P/N 08-00596 ..... $49.75

GENERATION II COPPER HEADER WRAP

Generation II Copper Header Wrap improves heat resistance up to 30% more than current technology, by utilizing a new proprietary coating developed by Thermo-Tec; improved Thermal-Conduction-Technology (T-C-T). Creates more horsepower & reduces underhood temps, increases exhaust scavenging, withstands continuous heat up to 2000ºF, contains no asbestos. Sold in 1" or 2" wide, 50 ft rolls with low profile 1/16" thickness.

1"X50 ..... P/N 08-11031 ..... $29.75
2"X50 ..... P/N 08-11032 ..... $49.65

MICRO LOUVER AIR SHIELD

Lightweight yet durable, the aluminum Micro Louver Air Shield features micro air louvers, which allow air to flow through the metal shield. The movement of the vehicle creates dynamic air flow, cooling by natural convection. The textured surface created by the micro air louvers creates more area for heat dissipation. The Micro Louver Air Shield is flexible yet durable; it bends and flexes easily by hand, making a custom fit trouble-free.

12"X24" ..... P/N 08-11710 ..... $33.50
24"X24" ..... P/N 08-11720 ..... $51.00
48"X24" ..... P/N 08-11740 ..... $88.50

EP

EXHAUST PRODUCTS - PT6 100 HOUR KIT

EXHAUST INSULATING WRAP

The original Exhaust Insulating Wrap was developed over 14 years ago by Thermo-Tec. Exhaust Insulating Wrap is an innovative way to create more horsepower and reduce under-hood temperatures.Wrapping headers maintains hotter exhaust gases that exit the system faster through decreased density. Increased exhaust scavenging is produced, along with lower intake temperatures. Exhaust Insulating Wrap withstands continuous heat up to 2000°F, and contains no asbestos. Thermo-Tec exhaust wrap will not over-insulate a system when properly installed due to a proprietary coating developed by Thermo-Tec -- Thermal Conduction Technology (TCT) -- that conducts heat across the wrap's surface. This coating controls heat build-up and dissipation. The Header Wrap is sold in 2" wide, 50'rolls with a low profile 1/6" thick. P/N 09-41600.....$47.75

EXHAUST WRAP KITS

Now you can get everything you need for a complete, professional installation of our Exhaust Insulating Wrap, all in one package.Kits include Exhaust Insulating Wrap, Hi-Heat Coating and Snap Strap; available in Black and Original.

2" Original, 1 Roll ..... P/N 08-07204..... $56.75
2" Original, 2 Rolls ..... P/N 08-07205..... $119.50
2" Black, 1 Roll..... P/N 08-07206..... $61.75
2" Black, 2 Rolls..... P/N 08-07207..... $142.75

CLAMP ON HEAT SHIELDS

Flexible clamp on pipe heat shield blocks over 95% of the damaging radiant heat of the exhaust.Provides the ultimate in protection. The kits come complete with all clamps and new stainless stand offs. Installs in minutes. Incorporate Thermo-Tec's proprietary coating technology developed by Thermo-Tec, Thermal Conduction Technology.

6"X 1'..... P/N 08-07073 ..... $25.85
6" X 2'..... P/N 08-07074 ..... $38.50

SNAP STRAPS

The multi-purpose stainless steel Snap Straps are used to secure the Exhaust Insulating Wrap -- and more. The high-temperature stainless steel straps have a narrow profile to fit tight spots, and can be cut to the exact length needed. Snap Straps secure with easy-to-use slide-through fasteners.....

9" 12 pack ..... P/N 08-13150..... $27.50
18" 6 pack..... P/N 08-13160..... $18.65

ALUMINIZED HEAT BARRIER STOPS UNWANTED HEAT TRANSFER

Keep heat where you want it with this hi-tech aluminized heat blanket. Thickness, 0.060". Furnished in 36"x40". Sheets (10 Sq. Ft.) P/N 08-06735..... $85.85 ea.

KEVLAR HEAT SHIELD

* Can be used for various uses* Can be used as a header blanket* Improve driver comfort* Protect engines components* Continuous heat up to 1100 degrees F* Reflects 90% of radiant heat up to 3000 degrees F. * Size: 26" x 40" Sheet P/N 08-07162 .....$104.75

KEVLAR MUFFLER COVER

Handles continuous temperatures up to 1100deg F. Reduces radiant heat inside vehicle. Dampens muffler noise and vibration. Includes stainless steel straps for installation. Neat attractive appearance and is abrasion resistant. P/N 08-07201 .....$136.75

EXPRESS SLEEVES

Express Sleeves are just the thing that our customers have been looking for. An new easy to use sleeving which is a combination of a high temperature insulation material to a highly reflective mylar foil with a Velcro closure. The sleeving is designed to provide maximum protection for wires, hoses, and cables from the very damaging effect of radiant heat with an easy application. Simply pull apart the material, wrap around the wire, and reclose the sleeving. Express Sleeves reflect over 90% of radiant heat, is fireproof and fire resistant, and just looks good. Express Sleeves come in 1 1/2" diameter in 3', & 12' lengths.

Size	Part No.	Price	Size	Part No.	Price
1-1/2" X 3"	09-02060	$29.50	1/2" x 3	08-07202	$24.50
1-1/2" X 12"	09-02061	$114.75	1/2" x 12	08-07203	$98.75

THERMO-GUARD FR

Thermo-Guard FR offers the best in head and sound insulation. This lightweight, durable shield does everything: reduces sound, absorbs vibration, protects from radiant heat and provides an extra layer of insulating padding. The product features 100% synthetic fiber felt that provides sound and comfort control and high-tech foil heat barrier that blocks more than 90% of radiant heat. 48"x72" 1-Sided ..... P/N 08-01028 ..... $45.50
48"x72" 2-Sided ..... P/N 08-01029 ..... $61.75

ZIRCOFLEX™ FLEXIBLE CERAMIC HEATSHIELD

A flexible ceramic heat shield material that offers superb thermal barrier performance at minimal weight and minimal thickness. A thin aluminum backed foil, it is lightweight at only 460g/m(2) and only 0.25mm thick. It is however, robust and easy to handle. It can be cut and installed by hand or machine, and is easily fixed in place using mechanical fasteners or high temperature adhesives. Each piece is 35.4" X 21.5" (900mm x 550mm.)

Ceramic Heatshield..... P/N 08-07214..... $121.75
Double sided adhesive tape attachment kit ..... P/N 08-07215..... $9.95
Stainless Steel Strapping kit ..... P/N 08-07216..... $9.95

ZIRCOFLEX I (SINGLE THICKNESS)

This is ZircoFlex® I in its single thickness (original) format. The material offers superb thermal barrier performance at minimal weight and minimal thickness. It is produced as a thin aluminum backed foil.

Description	Size	Part No.	Price
Zircoflex I Mini Roll	400mm x 100mm (Approx. 16" x 4")	08-07635	$15.95
Zircoflex I Small Sheet	297mm x 210mm (Approx. 12" x 8")	08-07636	$23.95
Zircoflex I Meduim Sheet	550mm x 450mm (Approx. 22" x 18")	08-07637	$62.60
Zircoflex I Small Sheet with Adhesive	297mm x 210mm (Approx. 12" x 8")	08-07646	$28.85
Zircoflex I Medium Sheet with Adhesive	550mm x 450mm (Approx. 22" x 18")	08-07647	$68.75
Zircoflex I Large Sheet with Adhesive	900mm x 550mm (Approx. 35" x 22")	08-07648	$111.95

ZIRCOFLEX II (DOUBLE THICKNESS)

This is an engineered double thickness ZircoFlex® format that offers additional thermal barrier performance and a little more rigidity compared to ZircoFlex I® material. It is produced as a thin aluminum backed matrix.

Description	Size	Part No.	Price
ZircoFlex II Small Sheet	297mm x 210mm (Approx. 12" x 8")	08-07640	$35.50
ZircoFlex II Medium Sheet	550mm x 450mm (Approx. 22" x 18")	08-07641	$81.55
ZircoFlex II Large Sheet	900mm x 550mm (Approx. 35" x 22")	08-07642	$145.55
ZircoFlex II Small Sheet with Adhesive	297mm x 210mm (Approx. 12" x 8")	08-07649	$31.95
ZircoFlex II Medium Sheet with Adhesive	550mm x 450mm (Approx. 22" x 18")	08-07651	$84.75
ZircoFlex II Large Sheet with Adhesive	900mm x 550mm (Approx. 35" x 22")	08-07652	$151.95

ZIRCOFLEX III (TRIPLE THICKNESS)

This is an engineered triple thickness ZircoFlex® format that offers yet more thermal performance coupled with significant rigidity when compared to the original ZircoFlex I® material. It is produced as an aluminium backed matrix.

Description	Size	Part No.	Price
Zircoflex III Small Sheet	297mm x 210mm (Approx. 12" x 8")	08-07643	$39.95
Zircoflex III Medium Sheet	550mm x 450mm (Approx. 22" x 18")	08-07644	$107.50
Zircoflex III Large Sheet	900mm x 550mm (Approx. 35" x 22")	08-07645	$194.75
Zircoflex III Small Sheet with Adhesive	297mm x 210mm (Approx. 12" x 8")	08-07653	$41.55
Zircoflex III Medium Sheet with Adhesive	550mm x 450mm (Approx. 22" x 18")	08-07654	$110.35
Zircoflex III Large Sheet with Adhesive	900mm x 550mm (Approx. 35" x 22")	08-07655	$198.75

ZIRCOFLEX ACCESSORIES

Double Sided Adhesive Tape..... P/N 08-07215..... $9.95
Stainless Steel Attachment Kit..... P/N 08-07216..... $9.95

ZIRCOFLEX GOLD HEATSHIELD

High performance heatshield material offering exceptional levels of protection against both radiant and conductive heat in a single easy to use product. Its real gold backing provides maximum levels of heat reflectivity. Ceramic layers provide a highly efficient barrier against conductive heat transfer. Supplied as a standard sized sheet 300mm x 400mm (~12" x ~16"). Each retail pack also contains a high temperature adhesive attachment kit. ..... P/N 08-07658 ..... $254.00

PT6 100 HOUR KIT

Contains all the necessary "O" rings for chip detector, fuel pump, P3 filter & oil filter. Also, contains "O" rings for Airmaze and Purolator firewall fuel strainers. This is a Universal Kit for the PT-6 engine. Depending on the application, not all "O" rings will be needed. The black "O" ring in the AN6235-3A filter should be replaced, as directed by the aircraft maintenance manual, with the kit "O" ring M25988/1-212 which is blue in color. Application: • Aircraft with PT6 engines: • Beech King Air 90 • Beech King Air 100 • Beech King Air 200 • Beech B1900 • Cessna 208 Caravan • Cessna 425 • DeHavilland Dash 7 • DeHavilland Twin Otter • Embraer EMB 110 • Piper PA31T, -1, PA42 • Short Bros. SD330/SD360 Check Aircraft Manufacturers IPC for installation eligibility. P/N 08-07532 ..... $22.50

EP

POWER FLOW SYSTEMS INC. EXHAUST SYSTEMS

Power Flow Systems, Inc., the world leader in designing, manufacturing, and retailing of FAA Certified High Performance aircraft tuned exhaust systems.

Their Tuned Exhaust System is totally different. When you break down their exhaust system, you have two "sets" of pipes; the primary (header/collector combination) and the secondary (pipe after the collector). The primary contains four independent tubes that all join at the "4-1 Collector". As each "exhaust puff" of spent fuel travels through the primaries, it leaves a vacuum behind. In their tuned exhaust system, they have adjusted the length of each tube so that the vacuum reaches the collector just in time to "suck out" the exhaust from the next cylinder. The exhaust gases are not only being pushed out by the cylinder, but "extracted" by the vacuum, so a bigger, fresher charge will enter the cylinder during the next cycle. A tuned exhaust system really promotes a smoother, cooler, and finally more powerful running engine.

Benefits with Power Flow Systems:
- Shorter Take Off Roll
- Greatly Improves Rates of Climb
- More Usable Power
- Fuel Savings at Current Speeds
- Smoother Running Engine
- Runs cooler at Current Speeds
- Go up to 8 knots faster
- Mandrel Bent Tubes to maintain consistant interior dimension

Kit Contents:
- Kit includes everything to "bolt on" a Complete Replacement Exhaust System
- New Headers, Heater, & Muffler
- No blow gaskets, Nuts, Lock washers, Flat washers, Cotter pins etc.
- Stainless Steel Construction
- Up to 40% thicker than stock
- New Improved Heating System

Airplane	Type of System	Power Flow P/N	Our P/N	Price
Aviat Husky A1B, A1C-180 with Lyc., O-360	Classic Polished	PFS-18101	08-07279	$5,500.00
	Ceramic Upgrade	PFS-18101 Upgrade	08-07280	$200.00
Cessna 172 C-172 w/ O-320	Classic Polished	PFS-13204	08-00358	$4,025.00
	Classic Ceramic	PFS-13204-Ceramic	08-05957	$4,225.00
	Short Stack Polished	PFS-13204-InternalC	08-05958	$4,025.00
	Short Stack Ceramic	PFS-13204-Internal-CCER	08-05959	$4,225.00
Cessna 172 or 175 C-172 w/ O-360	Classic Polished	PFS-13204-O360	08-00359	$4,225.00
	Clssic Ceramic	PFS-13204-O360-Ceramic	08-05960	$4,425.00
	Short Stack Polished	PFS-13204-O360-InternalC	08-05961	$4,225.00
	Short Stack Ceramic	PFS-13204-Internal-CCER	08-05962	$4,425.00
Cessna 177 C-177 w/ O-320	Classic Polished	PFS-13704	08-00360	$4,025.00
	Clssic Ceramic	PFS-13704-Ceramic	08-05963	$4,225.00
	Short Stack Polished	PFS-13704-InternalC	08-05964	$4,025.00
	Short Stack Ceramic	PFS-13704-Internal-CCER	08-05965	$4,225.00
Cessna 177A C-177 w/ O-360	Classic Polished	PFS-13704-O360	08-00361	$4,225.00
	Clssic Ceramic	PFS-13704-0360-Ceramic	08-05966	$4,425.00
	Short Stack Polished	PFS-13704-0360-InternalC	08-05967	$4,225.00
	Short Stack Ceramic	PFS-13704-0360-InternalCCER	08-05968	$4,425.00
Cessna 177B (0-360)	Classic Polished	PFS-13705	08-00880	$4,225.00
	Clssic Ceramic	PFS-13705-Ceramic	08-05969	$4,425.00
	Short Stack Polished	PFS-13704-InternalC	08-05970	$4,225.00
	Short Stack Ceramic	PFS-13705-Internal-CCER	08-05971	$4,425.00
Cessna 177RG (IO-360)	Clssic Ceramic	PFS-15102-CERAMIC	08-07165	$5,190.00
	Short Stack Polished	PFS-13706	08-07163	$5,400.00
	Short Stack Ceramic	PFS-13706-CERAMIC	08-07164	$5,600.00
Grumman AA-5 (below serial #640)	Classic Polished	PFS-13801	08-00635	$3,990.00
	Short Stack Polished	PFS-13801-InternalC	08-05973	$3,990.00
	Short Stack Ceramic	PFS-13801-Internal-CCER	08-05974	$4,190.00
Grumman AA-5 (above Serial #640) & Grumman AA-5A	Classic Polished	PFS-13802	08-00636	$4,290.00
	Short Stack Polished	PFS-13802-InternalC	08-05976	$4,290.00
	Short Stack Ceramic	PFS-13802-Internal-CCER	08-05977	$4,490.00
Grumman AA-5B & AA-5B	Classic Polished	PFS-13803	08-00637	$4,290.00
	Clssic Ceramic	PFS-13803-Ceramic	08-05978	$4,490.00
	Short Stack Polished	PFS-13803-InternalC	08-05979	$4,290.00
	Short Stack Ceramic	PFS-13803-Internal-CCER	08-05980	$4,490.00
Glastar & Sportsman 2+2 Experimental/ Homebuil	Polished	PFS-16104	08-04986	$2,695.00
	Ceramic	PFS-16104-Ceramic	08-05981	$2,895.00
Piper PA-28-140	Classic Polished	PFS-14150	08-05924	$4,075.00
	Short Stack Polished	PFS-14150-InternalC	08-05983	$4,075.00
	Short Stack Ceramic	PFS-14150 - Internal-CCER	08-05984	$4,275.00
	Short Stack Polished	PFS-14150-Internal-InternalP	08-05987	$4,075.00
	Short Stack Ceramic	PFS-14150-InternalP-CER	08-05988	$4,275.00
Piper PA-28-150, 160 w/ Conical Mounts (Below Serial #1761)	Classic Polished	PFS-14151	08-04985	$4,075.00
	Short Stack Polished	PFS-14151-InternalP	08-05990	$4,075.00
	Short Stack Ceramic	PFS14151-InternalPCER	08-05991	$4,275.00
	Short Stack Polished	PFS-14150-InternalP	08-05994	$4,075.00
	Short Stack Ceramic	PFS-14150-InternalP-CER	08-05995	$4,275.00
Mooney M20 (B,C,D,G) w/ O-360	Polished	PFS-16101	08-00694	$4,190.00
	Ceramic	PFS-16101-Ceramic	08-05996	$4,390.00
Mooney M20 (E,F,J) w/ IO-360	Polished	PFS-16201	08-01219	$4,590.00
	Ceramic	PFS-16201-Ceramic	08-05997	$4,790.00
Diamond DA 40	Polished	PFS-15102	08-05949	$4,990.00
Raytheon Beechcraft 23 (O-360)	Ceramic	PFS14152-Ceramic	08-05998	$4,490.00
	Polished	PFS-14152	08-05950	$4,290.00
	Ceramic	PFS-13804-Ceramic	08-06000	$4,490.00
	Polished	PFS-113804	08-05999	$4,290.00

CERAMIC UPGRADE - Hides discoloration that occurs when the stainless steel is heated. Retains silver finish and requires no maintenance or polishing..... P/N 08-05945 .....$550.00

EP

EXHAUST SYSTEMS

All exhaust stacks are heli-arc welded using Type 321 stainless steel tubing for light weight and long service life. Stainless steel stacks weight 50% less than a set in mild steel. All stacks are custom made and the workmanship is consistently of exceptional quality.

WHEN ORDERING, SPECIFY COMPLETE MODEL NUMBER AND HP OF ENGINE AND AIRCRAFT TYPE.

STRAIGHT STAINLESS STEEL EXHAUST STACKS

Basic exhaust pipes for Pitts Special, Smith Miniplane, Acro Sport, Starduster and many other homebuilts with Lycoming engines O-235 through O-360. This exhaust system fits under the intake tubes, starting at the rear cylinders, around the front intake tube, then points aft. Two mufflers (P/N 33205) or two tail pipes (P/N 33204) can be used with this system. With stainless swivel joints for vibration dampening and for positioning of tail pipes through 25° range. Wt. 7-1/4 lbs.

SYSTEM FOR LYCOMING ENGINES THRU 180 HP
Set of two basic stacks only, consisting of:
Right Hand, P/N 33202 & Left Hand, P/N 33203
Set of Two..... P/N 33202/33203 ..... $779.00
(Tail Pipes not included.)

System for Lyc. O-320B (Fuel-Injected)
Tightest system for this engine.
P/N 33270-1 ..... $845.00
(Tail Pipes not included.)

ADD OPTIONS:

STRAIGHT TAILPIPES

P/N 33204 (14") .....$192.75 Pr. P/N 33204-24 (24").....$246.95 Pr.
P/N 33204-18 (18").....$213.95 Pr. P/N 33204-28 (28").....$272.95 Pr.
P/N 33204-20 (20").....$244.95 Pr. P/N 33204-36 (36").....$264.95 Pr.

MUFFLER WITH 8" TAILPIPE (NO HEAT EXCHANGER)

P/N 33205 .....$349.85 Ea.

MUFFLER WITH 8" TAILPIPE & HEAT EXCHANGER

2" Dia. Inlet & Outlet..... P/N 33206-1 .....$398.00 Ea.
2-1/2" Dia. Inlet & Outlet..... P/N 33206-2 .....$419.00 Ea.
When ordering muffler with heat exchanger, advise if inlet & outlet pipe diameter other than 2" or 2-1/2" is preferred.
When ordering muffler with heat exchanger, advise diameter of inlet and outlet pipe preferred (2", 2-1/2" or other).

HOMEBUILDERS SPECIAL STACKS

Designed to fit Lycoming engines 0-235 to 0-360. Mild steel. These stacks do not fit Pitts Special. Applicable to many home builts. Wt. 7.25 lbs.
P/N 08-01900..... $624.00

STAINLESS STEEL CROSSOVER EXHAUST SYSTEMS

A exhaust system allows your engine to breathe properly by reducing back pressure and by picking up the correct firing order of the cylinders. This results in increased HP compared to an untuned exhaust. The added HP will be evident as higher takeoff RPM, higher cruise speed and lower fuel consumption.
This crossover system fits all Lycoming engines from O-235 to IO-360 (180 HP) with bottom or aft mounted carburetors or fuel injection controllers. It is designed for tight cowling and in most cases no cowling modification will be necessary. If fit is the problem, custome tighter crossover systems are available by special order (Additional charges may apply). The system has slip joints between cylinders and ball joints where tail pipes or mufflers connect to collector tubes to prevent cracking due to expansion and vibration and to allow for positioning of the tail pipes. The exhaust system can be ordered in the following combinations:

1. With straight tail pipes
2. With two mufflers (no heat exchangers)
3. With two mufflers (one heat exchanger)
4. With two mufflers, both with heat exchangers.

All mufflers include removable 8" tail pipes. Heat shrouds have one inlet and one outlet for 2" or 2-1/2" flex tubing
Compression Springs - used on Exhaust System Ball Joints. 6 required per system. P/N 33703..... $5.80

STANDARD CROSSOVER SYSTEM

Basic system with all Collector Tubes (Without Tail Pipes)
P/N 33251 ..... $927.00
ADD OPTIONS:
Straight Tailpipes (14").....P/N 33204.....$192.75 Pr.
Muffler w/8" Tailpipe (no heat exchanger).....P/N 33205..... $349.85 ea
Muffler w/8" Tailpipe & Heat Exchanger. .....P/N 33206-1 ..... $398.00 ea

COMPLETE STANDARD CROSSOVER SYSTEM PRICES

Basic System with Two Straight 14" Tailpipes.
Ass'y # 33270.....$1,098.00
Basic System for 0-320B w/o Tailpipes.....Ass'y # 33270-1 ..... $845.00
System with 2 Mufflers, Removable 8" Tailpipes & No Heat Srouds.
Ass'y # 33272.....$1,222.00
System w/2 Mufflers, 1 Heat Shroud for either Cabin heat or Carb. heat.....Ass'y # 33274..... $1,550.00
System w/2 Mufflers, Both w/ Heat Shrouds for Cabin heat &C arb. heat.....Ass'y # 33276..... $1,746.00
Stainless Crossover Systems for IO-360 (200HP)
Please specify front (35), bottom (40), or rear injector (45)
P/N 08-057--..... $998.00
(Does not include tailpipes or heat muffs)

SPECIAL CROSSOVER SYSTEM FOR VERY TIGHTLY COWLED AIRCRAFT

Designed for the Thorpe T-18, RV-6, 7 7 8, Mustang II, and others using Lyc 0-320 to 0-360 engines

Basic System with all Collector Tubes — Please furnish exact engine designation to insure proper fit. P/N 33250.....$875.00

Special Mufflers for the T-18 with Heat Shrouds for Cabin Heat and Carb. Heat. P/N 33250-1 .....$395.95 Ea.

Special Tailpipes for the T-18 (to be used when mufflers are not used). Comes with same ball joint as the mufflers and an attaching bracket.
P/N 33250-2 ..... $274.95 Pr.

NOTE: PRODUCTS ON THIS PAGE ARE FOR EXPERIMENTAL AIRCRAFT AND ARE NOT FAA APPROVED. ALL EXHAUST SYSTEMS ARE SPECIAL ORDER AND ARE NON RETURNABLE

EXHAUST SYSTEM FOR OSPREY AIRCRAFT

This stainless steel exhaust system is specifically designed for the Osprey Aircraft. Ideal for amphibians as the tailpipe exits vertically upward. Fits aircraft using the following engines: O-235 thru O-360.
RH & LH Stacks Only
P/N 33420 ..... $675.00
ADD OPTIONS:
Muffler Only..... P/N 33422 ..... $236.95
Muffler with Heat Exchanger ..... P/N 33424..... $417.00

EXHAUST SYSTEM FOR CONTINENTAL 0-200

This universal stainless steel exhaust system is designed for experimental aircraft using Continental A65 thru O-200 engines. Consists of 2 manifolds, left hand manifold has heat shroud with 2-1/2" connection for carb heat. Muffler outlet are 3" long. Tailpipe extensions may be required, sold separately
Mufflers ..... P/N 33401 ..... $898.00
8" Tailpipe Extensions. Furnished with slip joint and pin clamp.
P/N 33402 ..... $121.75
THIS SYSTEM IS PATTERNED AFTER A CESSNA 150 SYSTEM, BUT WILL NOT FIT A CESSNA 150 OR 152.

EXPRESS AIRCRAFT EXHAUST MANIFOLDS Y-STYLE

Fits Lycoming IO-540 (Angle Valve Engine) (Includes Custom 2-1/4" Tailpipes With Cabin heat shroud) (Optional studding to increase cabin heat available)
P/N 08-02105 ..... $1,456.00

WHEN ORDERING EXHAUST SYSTEMS, PLEASE SPECIFY COMPLETE MODEL NUMBER & HP OF ENGINE AND AIRCRAFT TYPE

STAINLESS STEEL STACKS FOR PUSHER TYPE AIRCRAFT

PN 33601 - Designed specifically for "Pusher Style Aircraft". Exhaust fits inside of intake tubes.

For Continental C-85 thru O-200 ..... P/N 33601 ..... $837.00
For Lycoming O-235 thru O-360 ..... P/N 33602 ..... $843.00

COZY MARK IV PUSHER EXHAUST SYSTEM

This custom stainless exhaust system was designed specifically for the Cozy Mark IV aircraft.
For Lycoming O-235 to O-360 (180 HP or less)
P/N 33702 ..... $859.00
For Lycoming IO-360 (200 HP) Angle Valve Engine
P/N 33702-1 ..... $879.00

Replacement Cozy Extension Spring
P/N 33704 ..... $7.85 ea
Cozy Inside Cowl Exhaust ..... P/N 08-07342 ..... $960.00

NOTE: PRODUCTS ON THIS PAGE ARE FOR EXPERIMENTAL AIRCRAFT AND ARE NOT FAA APPROVED. ALL EXHAUST SYSTEMS ARE SPECIAL ORDER AND ARE NON RETURNABLE

EXHAUST SYSTEM COMPONENTS

Fabricate your own exhaust system with these precision-formed type 321 stainless steel components.

STAINLESS STEEL 45° & 90° BENDS

Tubing Size	P/N	Radius	Angle	Price
1-1/2" X .035	33241	2-1/2"	90°	$49.85
1-1/2" X .035	33241-4	4-12"	90°	$46.50
1-1/2" X .035	33242	2-1/2"	45°	$48.50
1-3/4" X .049	33236	1-3/4"	90°	$49.85
1-3/4" X .035	33243	2-7/8"	90°	$51.85
1-3/4" X .049	33243	2-1/2-12"	90°	$54.75
1-3/4" X .035	33245	4"	90°	$53.75
1-3/4" X .049	33245	4-12"	90°	$56.80
1-3/4" X .035	33237	5-1/2"	90°	$61.75
1-3/4" X .035	33244	2-7/8"	45°	$48.50
2" X .049	33238	2-1/2"	90°	$78.75
2" X .035	33246	4"	90°	$63.75
2" X .049	33246	4-12"	90°	$65.75
2-1/4" X .049	33240	2-3/4"	90°	$67.80
2-1/2" X .049	33247	4"	90°	$88.75
2-3/4" X .049	34001	3"	90°	$93.75

STAINLESS STEEL 180° "U" BENDS

180° "U" Bends w/ odd or even leg lengths.

Tubing Size	P/N	Radius	Angle	Leg Length	Price Each
1-1/2" X .035	33260	2-1/2"	180	6"/6"	$58.65
1-1/2" X .035	33262	2-1/2"	180	10"/10"	$73.80
1-1/2" X .035	33261	2-1/2"	180	11"/14"	$72.65
1-3/4" X .035	33265	2-7/8"	180	6"/6"	$58.75
1-3/4" X .035	33264	2-7/8"	180	10"/10"	$74.95
1-3/4" X .049	33264	2-7/8"	180	10"/10"	$69.75
1-3/4" X .035	33263	2-7/8"	180	11"/14"	$79.90

STAINLESS SWIVEL BALL JOINTS - CLAMP TYPE

Tubing I.D.	P/N	Male Sz	Female Sz	Price
1-3/4"X 1-3/4"	33231	1-3/4"	1-3/4"	$73.50
1-3/4"X 2"	33232	1-3/4"	2"	$72.75
2"X 2"	33233	2"	2"	$83.75
2-1/2"X 2-1/2"	33234	2-1/2"	2-1/2"	$79.85
2-3/4"X 2-3/4"	33235	2-3/4"	2-3/4"	$79.95

CUSTOM AIRCRAFT HARDWARE KIT - Ball Joint Hardware Kit. Kit Includes: (3) Nuts (3) Bolts (3) Washers (3) springs Fits 33231 thru 33234 P/N 08-07168..... $17.75

HYDRO-FORMED SLIP JOINTS - TWO PIECE UNIT 4" LONG

Slip Joint Size	P/N	Expanded Length	Price
1-1/2"	33221	2-3/4"	$49.50
1-5/8	33226	2-5/8"	$44.50
1-3/4	33222	2-5/8"	$51.65
2"	33223	2"	$52.25
2-1/4"	33227	2"	$58.85
2-1/2"	33224	2-3/8"	$59.75
3"	33225	2-1/4"	$61.99

STUB EXHAUST STACKS

Stainless tubing 6"L welded onto stainless exhaust flange.

1-1/2"x .035 for Continental (doesn't fit 0-240)
P/N 13352..... $66.50

1-3/4"x .035 for Lyc..... P/N 13354..... $69.50

STAINLESS TUBING FOR EXHAUST STACKS

Stainless type 321 welded tubing for exhaust stacks.

Tubing Size (O.D. x Wall)	P/N	Price per Ft.
1-1/2" x .035	03-16300	$20.90

Tubing Size (O.D. x Wall)	P/N	Price per Ft.
1-3/4" x .035	03-16400	$22.93
2" x .035	03-16500	$24.85

EP

EXHAUST SYSTEMS

LONG-EZ EXHAUST SYSTEM

Long-EZ exhaust system fits all Lycoming 4 cylinder engines.
P/N 08-00832 ..... $850.00

LONG-EZ EXHAUST SYSTEM INSIDE THE COWL

With this configuration the exhaust tips are located where the cooling air exits. This design eliminates cutting the cowling for exhaust exit and improves propeller efficiency by moving the exhaust pulses inboard, closer to the center of the prop hub. Fits Lycoming O-320 & O-360 parallel valve engines. P/N 08-00833..... $899.00

BERKUT 4 PIPE EXHAUST SYSTEM

Fits all Lycoming 4 cylinder engines.
P/N 08-00834 ..... $896.00

BERKUT 6 PIPE EXHAUST SYSTEM

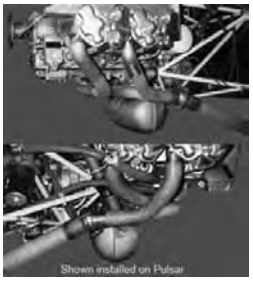
Fits 6 cylinder Berkut only. P/N 08-00835 .....$1,073.00

VELOCITY EXHAUST SYSTEM

Velocity exhaust system fits 6 cylinder Lycoming parallel valve and angle valve engines.
Parallel ..... P/N 08-00836 ..... $796.00
Angled..... P/N 08-00837 ..... $773.00

MUSTANG II CROSSOVER EXHAUST SYSTEM

Mustang II Crossover Exhaust System Lycoming O-235 through O-360 (Comes with Custom Tailpipes) (Vertical Induction Intake)
P/N 08-07337.....$1,294.00



CONTINENTAL IO-240 CROSSOVER SYSTEM

Crossover exhaust system Continental IO-240 (Tailpipe Not included)
P/N 08-07338.....$837.00

STAINLESS STEEL EXHAUST STACKS

Manufactured from aircraft quality 321 stainless steel tubing. Set of two stacks or purchase each side individually. Patterned after Aeronca style exhaust. Fits Continental C90 Thru 0-200. Not FAA approved. Wt. 3-1/4 lbs.
Set of two
P/N 08-02001.....$658.00
Right side
P/N 08-02101.....$329.00
Left side
P/N 08-02201.....$329.00

LANCAIR LEGACY EXHAUST SYSTEM

Lancair legacy exhaust system, left & right hand manifolds with tailpipes and cabin heat shroud. Fits IO-550 Continental.
Exh. Sys. 33805-1..... P/N 08-00838 .....$1,753.00
Exh. Sys. 470-550..... P/N 08-02103 .....$1,753.00
Legacy Exhaust .....P/N 08-02104 ..... $1,757.00

6 Cylinder Continental O-470 to IO-520 Stacks - Exhaust Manifolds Y-Style L/H & R/H Continental 0-470 through IO-550 ..... P/N 08-07344 ..... $933.00

GLASAIR I & II CROSSOVER EXHAUST SYSTEMS

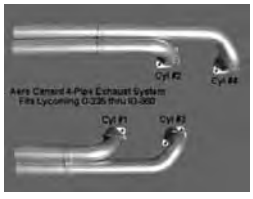
Fits Lyc. O-320 to O-360 with vertical induction.
P/N 08-00839 .....$1,624.00
Fits Lyc. engines w/ horizontal induction up to 180HP P/N 08-00840 .....$1,622.00

GLASTAR CROSSOVER EXHAUST SYSTEM

Includes exhaust system with (1) heater muffler, (1) non-heater muffler and tailpipes. Fits Lycoming O-235 and O-360 with vertical induction. P/N 08-00842.....$1,411.00

EXPERIMENTAL SUPER CUB CROSSOVER EXHAUST SYSTEM

PN 08-02100-Fits Lycoming O-320 (Vertical Induction Intake) (Must use "short" miniature light weight Sky Tec starter for clearance) (Optional studding to increase cabin heat available)
PN 08-02102-Fits Lycoming O-360 (Vertical Induction Intake) (Must use "short" miniature light weight Sky Tec starter for clearance) (Optional studding to increase cabin heat available)
P/N 08-02100 ..... $1,675.00
P/N 08-02102 ..... $1,675.00



4 CYLINDER AERO CAD 4 PIPE STACKS

Aero-Cad 4-Pipe Exhaust Manifolds Lycoming 0-235 through IO-360 200 HP
P/N 08-07343.....$896.00

4 CYL LYCOMING CROSSOVER EXHAUST 200HP

Crossover Exhaust System Lycoming IO-360 200 HP & IO-390 210 HP Angle valve engine.
NOTE: Photo shows optional tailpipes,P/N 33204-18 (08-00827) tailpipes are not included, but can be purchased seperately.
4 Cyl. Lyc. Croosover Exhaust 200HP.....P/N 08-07341 .....$987.00
18" Tailpipes 33204-18.....P/N 08-00827 .....$213.95

EP

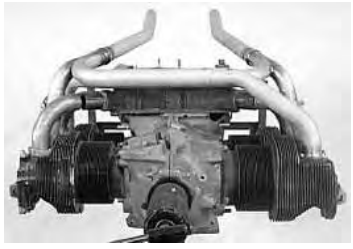
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

EXHAUST SYSTEMS

VETTERMAN RV EXHAUST SYSTEM

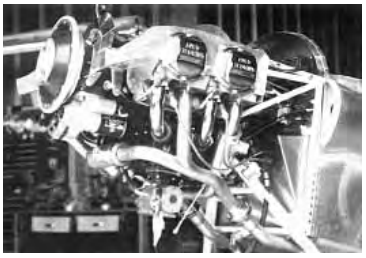


Vetterman Exhaust has been manufacturing exhaust systems for the Van's Aircraft RV series since 1990. Exhaust systems for all RV models & Van's approved engine models are available. All systems are manufactured from MIL Spec 321 stainless steel, which is mandrel bent, trimmed to length and tack welded on a Lycoming engine. This method assures the best fit possible. All systems incororate ample slip & ball joints which greatly reduces breaking potential. All systems include blow proof gaskets, stainless exhaust nuts & washers for installation. Also include tail pipe mounting kits or pipe support brackets. Some systems also include a cabin heat muff.

AIRCRAFT	DESCRIPTION	P/N	PRICE
RV-3	O-320 Conical Mount 4 pipe sys.	08-00583	$737.00
RV-3	O-320 Dynofocal Mnt. 4 pipe sys.	08-00584	$742.00
RV-3	O-360 Dynofocal Mnt. 4 pipe sys.	08-00585	$732.00
RV-4	O-320 Conical Mount 4 pipe sys.	08-00586	$732.00
RV-4	O-320 Dynofocal Mnt. 4 pipe sys.	08-00587	$733.00
RV-4	O-360 Dynofocal Mnt. 4 pipe sys.	08-00588	$733.00
RV-4	O-320 Dynofocal Mnt. X-over sys.	08-00589	$763.00
RV-4	O-360 Dynofocal Mnt. X-over sys.	08-00590	$767.00
7-7A,8-8A, (O-360/320)	*Includes tail pipe mounting kit	08-00591	$946.00
RV-6,7,8,9A (O-320-H2AD)	*Includes tail pipe mounting kit	08-00592	$945.00
RV 7-7A (IO-360 AIA 200)	*Includes tail pipe mounting kit	08-00593	$929.00
RV8 (IO-360)	*Includes tail pipe mounting kit	08-00594	$1,024.00
RV 8A (IO-360)	*Includes tail pipe mounting kit	08-00595	$1,017.00

NOTE: EACH OF THESE SYSTEMS WILL NOT INTERCHANGE BETWEEN AIRCRAFT AND ENGINE MODELS. THESE SYSTEMS ARE DESIGNED AND INTENDED FOR USE ON RV AIRCRAFT ONLY. PRICES DO NOT INCLUDE SHIPPING CHARGES.

SNOWLINE RV-4 CROSSOVER EXHAUST SYSTEM



The material used on this System is 1-3/4" O.D. x .035 wall 321 stainless steel. This system is designed for use with Lycoming engines up to 180 H.P. Bending is performed using an inside mandrel which the tube is drawn over during bending to maintain the inside diameter. Flanges are made from 1/4" Stainless Steel. This heavy material greatly reduces warping and cracking. Tail pipes are fitted with a stainless steel spring-type swivel ball joint. This flexible joint not only allows for easy alignment of the tail pipes through the opening in the bottom cowling; but most important, this joint allows the engine and tail pipes to move independently, and greatly reduces the chance of cracking. One heat muff has been provided on the front cross-tube. This muff is intended for carburetor heat. If an injection system is being used, this muff can be used for cabin heat. An optional cabin heat muff can be ordered when carburetor heat requires the use of the standard heat muff. All hardware is provided to install the system. Stainless steel nuts, bolts, washers, blow-proof exhaust gaskets, two stainless clamps for attaching tail pipes to the firewall or engine mount. Building brackets and positioning mixture and throttle cables is always a hassle. A bracket which simply bolts to the engine case and positions the cables in front of the mixture and throttle arms for easy attachment is available as an option. A U-type clamp attaches cable housing securely in place

RV-4 Crossover Exhaust System P/N 08-05785 $934.00

NOTE: THIS SYSTEM WILL NOT FIT LYCOMING, 0-320-H2AD OR H3AD ENGINES

SNOWLINE RV-6 & RV-6A CROSSOVER EXHAUST SYSTEM

The material used on these systems is 1-3/4" O.D. x .035 wall 321 stainless steel tubing. 2 models are available; one for Lycoming engines up to 180 H.P. and the other for the Lycoming IO-360 (200 H.P. engine). Bending is performed using an inside mandrel which the tube is drawn over during bending to maintain the inside diameter. Flanges are made from 1/4" stainless steel. This heavy materialgreatly reduces warping & cracking. Tail pipes are attached to the header with a slip joint. Simply slide the tail pipes onto the header, position the end of the pipe as desired in the bottom opening, and attach with the stainless steel retaining clamp. One heat muff has been provided on the front cross-tube. This muff is intended for carburetor heat. If an injection system is being used, this muff can be used for cabin heat. An optional cabin heat muff can be ordered when carburetor heat requires the use of the standard heat muff. All hardware is provided to install the system. Stainless Steel nuts, bolts, washers, blow-proof gaskets, 2 stainless clamps for attaching tail pipes to the firewall or engine mount. U-type clamp attaches the cable housing securely in place.

RV-6/RV-6A Crossover Exhaust Sys. (To 180 H.P.)
P/N 08-05790..... $898.00

RV-6/RV-6A Crossover Exhaust Sys.* (To 200 H.P.)
P/N 08-05795.....$1,048.00

Optinoal Cabin Heat Muff.....P/N 08-00679.....$92.50

*Will not work with front mounted injectors

The RV-6/RV-6A exhaust systems are recommended for these aircraft only. For other expermentals, the RV-4 system may fit better under cowls as it is built tighter to the engine.

EP

POLY-FIBER AIRCRAFT COATINGS

AIRCRAFT SPRUCE - WORLD'S LARGEST DISTRIBUTOR OF POLY-FIBER PRODUCTS

This FAA approved process utilizing Poly-Fiber Dacron polyester and the unique "Poly" line of finishes assures a beautiful, durable, weather-resistant cover job every time. Documented time tested results by the professionals. The Poly-Fiber Covering Process was issued Supplemental Type Certificate No. SA-1008-WE in 1965 and this number will apply to all aircraft.

Note: Formerly known as Stits covering process. Only Poly-Fiber materials may be used through the topcoat paint to comply with STC requirements. Poly-Fiber finishes are required for approval. Poly-Fiber is approved for use on most certified aircraft. To be sure, check the Master Eligibility List in the latest revision of Poly-Fiber Procedure Manual No. 1.

POLY-FIBER FABRIC

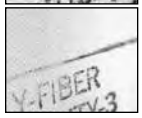
UNCERTIFIED LIGHT

1.87 oz/sq. yard. Lightweight fabric recommended for covering ultralight aircraft. This fabric will be unstamped. It is not approved for certified aircraft except on plywood surface. 72" Width P/N 09-02001 ..... $8.40 /Lineal Yd.

MEDIUM WEIGHT

2.79 oz/sq. yard. Standard fabric recommended for normal service on all types of aircraft regardless of speed, wing loading or horsepower. 73"x65".

P/N 09-01600 ..... $11.95 /Lineal Yd.



HEAVY DUTY

3.40 oz/sq. yard. Recommended for severe operating conditions and very high wing loading aircraft where a very tough, durable, low elongation, high tension fabric is required and weight is not critical. Great for agricultural, aerobatic and bush planes. 72" Width. P/N 09-01700 ..... $13.30 /Lineal

POLYESTER PADDING

Non -woven, 45" wide, 3 oz. per yard. Used under fabric on wing leading edge and turtle deck to smooth rough surfaces.

P/N 09-01750..... $7.90

POLY-FIBER POLYESTER FINISHING TAPES

Part No.	Style #	Roll Width	Roll Length	Price.
09-02200	Med.	1"	25 yds.	$16.05
09-02400	Med.	1-1/2"	25 yds.	$17.65
09-02450	Med.	2"	25 yds.	$23.20
09-02500	Med.	2"	50 yds.	$30.20
09-02900	Med.	3"	25 yds.	$27.80
09-03300	Med.	4"	25 yds.	$32.40
09-03350	Med.	6"	25 yds.	$45.00
09-02300	Light	1"	25 yds.	$16.05
09-02350	Light	1-1/2"	25 yds.	$17.65
09-02705	Light	2"	25 yds.	$23.20
09-02700	Light	2"	50 yds.	$30.20
09-03100	Light	3"	25 yds.	$27.80
09-03400	Light	4"	25 yds.	$32.40
09-03545	Light	6"	25 yds.	$45.00
09-03565	Bias	2"	25 yds.	$32.45
09-03570	Bias	3"	25 yds.	$46.15
09-03580	Bias	4"	25 yds.	$57.35

POLY-FIBER TAPES, CORD & THREAD

	Item	P/N	Yds. Spool	Price
Reinforcing Tape	1/4" Wide	09-03500	60	$55.00
	3/8" Wide	09-03600	60	$56.60
	1/2" Wide	09-03700	60	$57.95
Rib Lacing Cord	(Std. Round)	09-03800	296	$45.25
	Rib Cord, Flat	09-03810	500	$45.25
Sewing Thread	Machine	09-03900	500	$15.25
	Hand	09-04000	250	$11.75

HEAVY INTER-RIB BRACING TAPE

Non-adhesive polyester twill tape for inter-rib bracing. Twice as strong as cotton tape. 36 yd. rolls.`1/2" Wide P/N 09-40912 ..... $16.70

AIRCRAFT FABRIC COVERING

Aircraft Fabric Covering is a must for anyone who wants to cover their own airplane. This 2-hour comprehensive DVD presents every aspect of the Poly-Fiber™ fabric covering process in detail, and in easy-to-understand language. From preparing the airplane for covering to spraying on the colors, you are guided step by step through the entire process by a professional EAA SportAir fabric instructor. When used in conjunction with the Poly-Fiber manual, Aircraft Fabric Covering removes the mystery surrounding this important process in the construction or restoration of your airplane. Information covered includes: • Preparing surfaces • Attaching the fabric •Tightening the fabric • Applying the first coat of Poly-Brush •Tying rib-lacing knots • Applying finishing tapes • Spraying UV-blocking chemical • Poly-Spray •Applying the color coats.

DVD..... P/N 13-40428 ..... $39.95

THE POLY-FIBER PRACTICE KIT

If you're thinking of building a fabric-covered airplane but are wondering what the covering process is like, this is the perfect answer. You get a practice frame, fabric, tapes, needles, rib lacing cord, thermometer, instructions, and all the coatings you need to work through the Poly-Spray stage. There's enough of everything to do the entire process twice. You'll see how easy and enjoyable fabric covering really is.

P/N 09-06220 ..... $50.00

'HOW TO COVER AN AIRCRAFT USING THE POLYFIBER SYSTEM'

The Official Poly-Fiber how-to manual. It's a whole covering course in a book. A spiral-bound classroom, as the ads say. 151 pages of clear, non-jargon, step-by-step instruction, the entire Poly-Fiber system, from basic materials to blue ribbon. In plain language & has a sense of humor all its own. Entire Poly-Fiber catalog of products is included.

P/N 09-06000 ..... $10.00

Poly-Fiber Color Card #50 ..... P/N 09-00234 ..... FREE

POLY-FIBER SOLVENTS & CLEANERS

METL-SOL C-2200 METAL SURFACE CLEANER

A strong solvent blend formulated to remove oil, silicone, wax and other contaminants from all metal surfaces before priming. Not for painted surfaces.

Qt. ..... P/N 09-40710 ..... $18.90

Gal..... P/N 09-40720 ..... $60.70

C-2210 PAINT SURFACE CLEANER

A mild solvent blend formulated to remove oil, silicone, wax and other contaminants from all painted or primed surfaces. Also removes tape gum from painted surfaces and acrylic windshield materials.

Qt. ..... P/N 09-40810 ..... $11.95

Gal..... P/N 09-40820 ..... $45.00

310 ALKALINE DETERGENT CLEANER

Highly recommended as an alkaline metal cleaner for removing greases and oils. Also a very good cleaner for interior cabins and vinyl upholstery, as well as a wide variety of household applications to remove waxes, dirt, and stains. Furnished as a concentrate for 32:1 dilution with water. Lemon scented and not harmful to your hands.

Qt. ..... P/N 310-QT $11.80

Gal..... P/N 310-1G $32.10

POLY-FIBER MEK

Solvent used to remove coatings for repairs, for clean up, and to release cemented seams. NOT used to thin or reduce any products.

Qt. ..... P/N 09-40835 ..... $14.30

Gallon ..... P/N 09-40845 ..... $41.25

CS

POLY-FIBER AIRCRAFT COATINGS

POLY-BRUSH

FLAMMABLE

A pink translucent, 1 part air drying resin used for the first 2 or 3 coats to penetrate and seal the fabric weave and assure good adhesion. Also used to attach the finishing tapes and reinforcing patches. Brush on initial coat thinned 3:1 with reducer. Subsequent coats are thinned 3:1 with reducer and applied with a spray gun to avoid brush marks & cut application time.

Tinted			Untinted		
Quart	P/N 09-04100	$25.55	Quart	P/N 09-04110	$25.55
Gallon	P/N 09-04200	$85.00	Gallon	P/N 09-04210	$85.00
5 Gal.	P/N 09-04300	$420.00	5 Gal.	P/N 09-04350	$420.00

POLY-SPRAY

FLAMMABLE

A high-solids aluminum-pigmented, 1 part, air drying resin used after the Poly-Brush preliminary coating to protect fabric from UV and prepare for a smooth finish. Thin 4:1.

Poly Spray (Qt.)	P/N 09-04400	$25.20
Poly Spray (Gal.)	P/N 09-04500	$83.60
Poly Spray (5 Gal.)	P/N 09-04600	$413.10

POLY-FIBER REDUCERS

FLAMMABLE

A blend of solvents used for viscosity and drying control of Poly-Brush, Poly-Spray and Poly-Tone. Blend #R-65-75 is recommended as the standard reducer in normal weather, 65°–75°F. #RR-8500 is a retarder-reducer with slower drying time. Recommended for temp above 85° & warm humid weather.

#65-75			#RR-8500		
Qt.	P/N 09-04700	$15.20	Qt.	P/N 09-04750	$15.40
Gal.	P/N 09-04800	$47.80	Gal.	P/N 09-04850	$48.25
5 Gal.	P/N 09-04900	$230.70	5 Gal.	P/N 09-04950	$230.90

POLY-FIBER RETARDER

This blended solvent improves flow-out and prevents blushing under high temperature or high humidity conditions. Improves gloss.

FLAMMABLE

BR-8600 (Qt.)	P/N 09-40830	$14.00
BR-8600 (Gal.)	P/N 09-40840	$49.00

POLY-TAK CEMENT

FLAMMABLE

Excellent cement for all types of fabrics. Shelf life unopened is 2 years.

Pint	P/N 09-05110	$14.40
Quart	P/N 09-05000	$27.25
Gallon	P/N 09-05100	$99.80

POLY-TONE® FINISH

A durable semi-gloss, 1-part, air drying flexible paint available in over 50 popular aircraft colors. Recommended as the standard finish for the Poly-Fiber cover process. Also may be used over suitably primed metal components of fabric covered aircraft. Fabric damage is more easily repaired when Poly-Tone finish is used. All pigments are non-bleeding or fading. Will not oxidize with age. Poly-Tone is always thinned to 4 to 1with Poly Fiber Reducer (65-75 or 8500).

FLAMMABLE

POLY-TONE FINISHES

4 Whites:	QUART	GALLON
Insignia White (#105)	$24.50	$88.80
Juneau White (#110)	$26.50	$77.20
Glacier White (#117)	$24.50	$88.75
Daytona White (#120)	$24.50	$89.50
All other colors (Color Card #50)		No Charge

TO ORDER POLYTONE: Create the part number for the Polytone you require: Color-PQ (for Quart) or Color-PG (for Gallon)
Example: 100-PQ is 1 Quart of Color #100

POLY-TONE U.V. BLOCKING

FLAMMABLE

Used for additional UV Protection in ultralight airplanes. 1 fl.oz. blocks 1Quart Polytone

1/2 Pint Blocker (8 fluid oz)	P/N 09-02053	$23.75

POLY-TONE REJUVENATOR

FLAMMABLE RJ-1200

Quart	P/N 09-05200	$24.50
Gallon	P/N 09-05300	$80.50

STITS EPOXY PRIMER (GREEN) EP-420/EP-430

FLAMMABLE

This green primer is fast drying, corrosion inhibiting, and has application and curing qualities down to 35°F. It is a heavy duty chemical and solvent resistant amine cured primer. Mixing ratio is 2 parts base, 1 part catalyst. Order in kits.

Quart Kit (Yields2 1/2 quarts)			
Incl. catalyst and reducer		P/N 09-00352	$74.60
Gallon Kit (Yields 2 1/2 Gallons)			
Incl. catalyst and reducer		P/N 09-00353	$298.00
Base:	Quart	P/N 09-05605	$48.35
	Gallon	P/N 09-05610	$165.40
Catalyst:	Pint	P/N 09-05615	$20.65
	Quart	P/N 09-05620	$35.00
Reducer E-500 (Reduce 50%)	Quart	P/N 09-01163	$15.00
	Gallon	P/N 09-01108	$58.80

STITS EPOXY PRIMER (WHITE) EP-420/EP-430

FLAMMABLE

This white heavy duty chemical and solvent resistant amine cured primer, the excellent primer from Stits is fast drying and corrosion inhibiting. It can be applied and cured to temperatures down to 35°F. Mixing ratio is 2 parts base, 1 part catalyst.

Quart Kit (Yields 2 1/2 quarts)			
Incl. catalyst and reducer		P/N 09-00285	$75.00
Gallon Kit (Yields 2 1/2 Gallons)			
Incl. catalyst and reducer		P/N 09-00438	$298.00
Base:	Quart	P/N 09-05625	$48.35
	Gallon	P/N 09-05630	$165.40
Catalyst:	Pint	P/N 09-05615	$20.65
	Quart	P/N 09-05620	$35.00
Reducer E-500 (Reduce 50%)	Quart	P/N 09-01163	$15.00
	Gallon	P/N 09-01108	$58.80

STITS EPOXY VARNISH EV-400/EV-410

FLAMMABLE

An excellent clear gloss epoxy varnish for interior and exterior use. It provides superior weather durability and excellent chemical and solvent resistance. Can be used over a one component varnish primer if desired. Mixing ratio is 2 parts base, 1 part catalyst. Can be ordered as a kit which includes base, catalyst and reducer, or each component separately.

Quart Kit (Yields 2-1/2 quarts)			
Incl. catalyst and reducer		P/N 09-00349	$65.35
Gallon Kit (Yields 2-1/2 Gallons)			
Incl. catalyst and reducer		P/N 09-00350	$217.80
Base:	Quart	P/N 09-05645	$43.25
	Gallon	P/N 09-05650	$146.70
Catalyst:	Pint	P/N 09-05655	$18.25
	Quart	P/N 09-05660	$30.55
Reducer E-500 (Reduce 50%)	Quart	P/N 09-01163	$15.00
	Gallon	P/N 09-01108	$58.80

EPOXY ACCELERATOR EX-501

FLAMMABLE

A chemical curing accelerator for use in EP-420 Epoxy Primer and EV-400 Epoxy Varnish according to directions on base component listing. Reduces polymerization time, not solvent evaporation.

1/2 Pint	P/N 09-04650	$12.00

POLY-FIBER ESO ENGINE STORAGE OIL

FLAMMABLE

A fine lubrication and preservative oil used to prevent corrosion in internal combustion engines during extended storage. MIL-21260.

Quart	P/N 09-42450	$24.00
Gallon	P/N 09-42455	$89.00

POLY-FIBER 60"X 48" FINE MESH PAINT STRAINER CONES

Poly-Fiber 60x48 filter mesh paint strainer cone. P/N 09-02115 $0.70

IMPORTANT NOTICE:
ALL mixed paints are special order and are non-returnable.

CS

POLY-FIBER AIRCRAFT COATINGS

POLY FIBER AEROTHANE

A tough, flexible, high-gloss two part polyurethane especially formulated for fabric covered aircraft and marine surfaces subject to flexing loads. Recommended as a premium quality fabric finish over Stits Poly-Fiber covered aircraft. Wet look, high gloss. Aerothane requires catalyst, which is sold separately, and will be offered to you t the time of purchase. If you currently have an adequate supply please notify a sales rep or note it on you online order. Aerothane additives are also sold separatley, but must be requested as needed.

AERO-THANE (All Paint 3/4 filled cans)			
Size	Color	Part No.	Price
Quart	Insignia White	105-AQ	$39.80
Gallon	Insignia White	105-AG	$130.10
Quart	Juneau White	110-AQ	$34.60
Gallon	Juneau White	110-AG	$113.15
Quart	Glacier White	117-AQ	$34.60
Gallon	Glacier White	117-AG	$113.15
Quart	Daytona White	120-AQ	$34.60
Gallon	Daytona White	120-AG	$113.15
CLEAR AERO-THANE AO-100 (All paints 3/4 filled cans)			
Size	Color	Part No.	Price
3/4 Quart Paint	Clear	AO-100-QT	$44.50
3/4 Gallon Paint	Clear	AO-100-1G	$151.00

AERO-THANE ADDITIVES			
Description	Size	Part No.	Price
Urethane Catalyst U-865	1/2 Pint	09-05400	$19.95
Urethane Catalyst U-865	Quart	09-05500	$53.65
Urethane Reducer UE-820	Quart	09-05600	$17.05
Urethane Reducer UE-820	Gallon	09-05700	$63.35
Urethane Retarder UR-826	Quart	09-05800	$24.00
Urethane Retarder UR-826	Gallon	09-05900	$82.00

TO ORDER AEROTHANE:

Create the part number for the Aerothane you require: Color-A-Q(quart) or G (gallon). Add -K (kit) if catalyst is required. Example: 100-A-Q-K is 1 quart of color #100 with catalyst included.

CS

POLY-TONE/AEROTHANE ENAMEL FLATTENER

Used to make Aerothane and Enamel match the semi gloss finish of Polytone, or to make either Aerothane, Polytone and Enamel Full Military Flat.

Use 1 Pint, to flatten 1 Quart ..... P/N 09-02052 ..... $22.55
Use 1 Qt. & 1 Pint, to flatten 1 Gallon ..... P/N 09-02051 ..... $43.15

CALIBRATION THERMOMETER

Thermometer is accurate from 100°F to 400°F / 50°C to 200°C. Easy-to-read dial. Adjustable pan clip. Durable stainless steel.

P/N 09-37475 ..... $14.40

BLACK BARON FABRIC IRON

The Black Baron Iron was designed specifically for use on small aircraft. The exclusive "roll bars" fit into fillets and undercambers. The flat sole is for sheeted and open structures, and its beveled edges provide constant heat without marks. The toe is rounded and flat best performance. The coating is 100% blackstone making the iron slide like butter, even on tacky surfaces with almost no adhesive buildup. An advanced hi-tech thermostat reduces temperature drift to only 5° – Ordinary irons can vary up to 40°, causing surface bubbles. Get the best – get Black Baron.

110V ..... P/N 09-37411 ..... $24.50

HOBBICO CUSTOM SEALING FABRIC IRON

For large or small area coverage. Exclusive thermostat control, with built-in on/off switch. Non-stick coating prevents scratching. Shaped wooden handle for comfort and safety. Includes metal safety stand. 5.5' AC Power Cord. Shoe design includes rounded, tapered side wings to prevent gouging and make faster work of fillets, plus flat sole for solid surfaces and a tapered tip for hard-to-reach areas.

110V ..... P/N 09-37400 ..... $27.75
220V ..... P/N 09-37401 ..... $48.85

POLY-FIBER COLORS AVAILABLE

Each color group in chart below is listed from light to darker shades. Free Poly-Fiber color chart available on request. Color Card #50.

CLEAR
100 ..... (Aerothane Only)

WHITE
105 ..... Insignia White (Eagle White)
110 ..... Juneau White
117 ..... Glacier White (Federal 17038)
120 ..... Daytona White

CREAM
132 ..... Sun Valley Ivory
125 ..... Tucson Cream
131 ..... Diana Cream

YELLOW
242 ..... Ag Cat Yellow
136 ..... Lemon Yellow
139 ..... Federal Yellow
145 ..... Lockhaven Yellow
240 ..... Champion Yellow Titanine Yellow
140 ..... Orange Yellow (Schweizer Yellow) (Thrush Yellow) (Orange Yellow)
143 ..... Cub Yellow
146 ..... J3 OEM Yellow

ORANGE
142A ..... Eagle Yellow (Orange)
182 ..... Pumpkin Orange
183 ..... International Orange
180 ..... Cruiser Orange

RED
189 ..... Madrid Red
187 ..... Eagle Red
191 ..... Pontiac Red (Toreador Red)
190 ..... Tennessee Red (Federal 11136) (Insignia Red)
195 ..... Santa Fe Red (Maroon)
196 ..... Boston Maroon
197 ..... Stinson Maroon

PURPLE
361 ..... Eagle Purple

BROWN
205 ..... Bermuda Tan
203 ..... Elsinore Brown

BLUE
165 ..... Lakeland Blue
170 ..... Bahama Blue
173 ..... AN Blue (True Blue) (Federal 15102)
318M ..... Piper Trainer Blue
177 ..... Eagle Blue
176 ..... Insignia Blue (Federal 15044 Blue)

GREY/SILVER
210 ..... Polar Grey
220M ..... Nevada Silver
213A ..... Federal 36321 Grey
213 ..... Ag Cat Grey
219 ..... Jasper Grey
222M ..... Rancho Silver

BLACK
215 ..... Dakota Black (Eagle Black)

MILITARY CAMOUFLAGE
212 ..... Oak Green
208 ..... Federal 14087 (Olive Drab)
208A ..... Federal 24064 Green

GREEN
157 ..... Cuby Sport Trainer (Green)
151 ..... Everglades Green
156 ..... Portland Green
160 ..... Forest Green

GOLD
301M ..... Reno Gold

TO ORDER POLY-FIBER COLORS:

Simply specify Poly-Fiber color number from chart above, either PolyTone or AeroThane, and quart or gallon.

IMPORTANT NOTICE: Poly-Fiber and Randolph Coatings are now manufactured by Consolidated Coatings Co.and current colors do NOT all match original Randolph colors. If matching an old color is required, please match it to a current color card or send in a sample of old color for custom matching.

ALL mixed paints are special order and are non-returnable.

BLACK & DECKER THE CLASSIC IRON

With a classic design and a wide range of convenient features, The Classic™ iron brings simplicity and style back to ironing. A SmarTemp™ indicator light ensures you're ironing at the right temperature, while the 3-way auto shutoff provides added security and peace of mind. Wrinkle-Fighting Power. Aluminum Soleplate. Steam On/Off Button. Ironing Made Easy. 3-Way Auto Shutoff. Anti Drip. Fabric Guide. Button Groove. Pivoting Cord. Heats up to 374 degrees. P/N 09-00980 ..... $38.75

IRON KIT

Includes: • 09-37400: Hobbico Fabric Iron 110V • 09-03785: 360 degree Fabric Iron • 09-37450: Silicone Heat Sink Compound 1oz syringe • 09-37475: Poly-Fiber Calibration Thermometer P/N 09-37420 ..... $125.95

SILICONE HEAT SINK COMPOUND

For more accurate thermal transfer during iron calibration. 1 oz. Syringe

P/N 09-37450 ..... $15.80

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

POLY-FIBER MARK II FOR METAL

(NOT FOR USE ON FABRIC) - Use Mark II for Metal is available in the same 50 colors as Poly-Fiber Poly-Tone and Randolph Colored Butyrate Dope. Mark II is used over primed metal or composite parts and is too brittle to be used over fabric. Mark II is a tough, long-lasting top-coat paint. Although Mark II is a two-part catalyzed paint, it is not catalyzed with an isocyanate, thus normal safety equipment (a charcoal filtered spray mask) is sufficient. You do not have to use a supplied air respirator when spraying Mark II. Packaging: Mark II comes in three-part kits: part one is a can of the colored paint; part two is a separate can with an equal volume of Mixing Liquid, and part three is a thinner to be used to prevent orange peel.

Color	Quart	Price	Gallon	Price
Clear Base for Tinting	09-03869	$53.35	09-03871	$165.05
Metallic Base for Tinting	09-03872	$53.35	09-03873	$165.05
105 Insignia White	09-03876	$105.95	09-03877	$325.95
110 Juneau White	09-03878	$113.95	09-03879	$356.95
117 Glacier White	09-03880	$113.95	09-03881	$356.95
120 Daytona White	09-03882	$113.95	09-03883	$358.95
125 Tucson Cream	09-03884	$112.95	09-03885	$354.95
131 Diana Cream	09-03886	$113.95	09-03887	$356.95
132 Sun Valley Ivory	09-03888	$112.95	09-03889	$356.95
136 Lemon Yellow	09-03890	$123.95	09-03891	$397.95
139 Federal Yellow	09-03892	$116.95	09-03893	$369.95
140 Orange Yellow	09-03894	$120.95	09-03895	$387.95
142A C. Eagle Yellow/Orange	09-03896	$117.95	09-03897	$374.95
143 Club Yellow	09-03898	$117.95	09-03899	$373.95
145 Lockhaven Yellow	09-03901	$115.95	09-03902	$366.95
146 J3 OEM Yellow	09-03903	$117.95	09-03904	$374.95
151 Everglades Green	09-03905	$121.95	09-03906	$388.95
156 Portland Green	09-03907	$118.95	09-03908	$376.95
157 Cuby Sport Trainer Green	09-03909	$122.95	09-03910	$393.95
160 Forest Green	09-03911	$116.95	09-03912	$368.95
165 Lakeland Blue	09-03913	$113.95	09-03914	$357.95
170 Bahama Blue	09-03915	$116.95	09-03916	$368.95
173 AN (True) Blue	09-03917	$116.95	09-03918	$369.95
176 Insignia Blue	09-03919	$119.95	09-03920	$381.95
177 Christen Eagle Blue	09-03921	$118.95	09-03922	$379.95
180 Cruiser Orange	09-03923	$120.95	09-03924	$385.95
182 Pumpkin Orange	09-03925	$118.95	09-03926	$379.95
183 International Orange	09-03927	$119.95	09-03928	$383.95
187 Christen Eagle Red	09-03929	$123.95	09-03930	$398.95
189 Madrid Red	09-03931	$121.95	09-03932	$390.95
190 Tennessee Red	09-03933	$124.95	09-03934	$402.95
191 Pontiac Red	09-03935	$126.95	09-03936	$408.95
195 Santa Fe Red	09-03937	$123.95	09-03938	$398.95
196 Boston Maroon	09-03939	$123.95	09-03940	$396.95
197 Stinson Maroon	09-03941	$124.95	09-03942	$401.95
203 Elsinore Brown	09-03943	$112.95	09-03944	$354.95
205 Bermuda Tan	09-03945	$112.95	09-03946	$355.95
208 Olive Drab	09-03947	$112.95	09-03948	$355.95
208A Federal Green	09-03949	$113.95	09-03950	$358.95
210 Polar Grey	09-03951	$112.95	09-03952	$355.95
212 Oak Green	09-03953	$114.95	09-03954	$360.95
213 AG Cat Grey	09-03955	$112.95	09-03956	$354.95
213A Federal Grey	09-03957	$113.95	09-03958	$357.95
215 Dakota Black	09-03959	$111.95	09-03960	$349.95
219 Jasper Grey	09-03961	$113.95	09-03962	$357.95
220M Nevada Silver	09-03963	$105.95	09-03964	$327.95
222M Rancho Silver	09-03965	$106.95	09-03966	$328.95
240 Champion Yellow	09-03967	$113.95	09-03968	$357.95
242 AG Cat Yellow	09-03969	$116.95	09-03970	$371.95
301M Reno Gold	09-03971	$105.95	09-03972	$327.95
318M Piper Trainer Blue	09-03973	$111.95	09-03974	$351.95
361 Christen Eagle Purple	09-03975	$122.95	09-03976	$395.95

POLY-FIBER REPAIR KIT

Includes:1 ..... 1" Dope Brush
1 Pint ..... Poly-Tak
1 Quart ..... Poly-Spray
1 Quart ..... Poly-Brush
1 Quart ..... Reducer (Specify 65-75 or 8500)
1 Yard ..... Medium Fabric
4 Sheets ..... #400 Sandpaper
1 ..... 3" Curved Needle
10 Feet ..... 2" Surface Tape
1 ..... Thread
With #65-75 Reducer ..... P/N 09-06210 ..... $93.75
With #8500 Reducer ..... P/N 09-06215 ..... $93.75

CECONITE FABRIC REPAIR KIT

Ceconite 101 ..... P/N 09-00299 ..... $147.95
Kit Includes:

1	1" Brush	1 quart	286 Nitrate Thinner
1	3"Curved Needle	1 quart	Super Seam Fabric Cement
1	3M Wetordry Sandpaper 413	2 quarts	286 Butyrate Thinner
1 quart	G-6302 Rand Nitrate Dope Grain	1 quart	W-8350 Non-Taut Butyrate
1 quart	Ceconite 101 (3.4) 70"	1 Yard	Stits Hand Sewing Thread
1 quart	Rand O- Fill G6303	5 Yards	2" C102 Straight Tape 2"

Ceconite 102 ..... P/N 09-06225 ..... $144.95
Kit Includes:

1	1" Brush	1 quart	Nitrate Thinner
1	3" Curved Needle	1 quart	W-8350 Non-Taut Butyrate
1 quart	Ceconite 102 (2.6oz)	2 quarts	Butyrate Thinner 970
1 sheet	3M Wetordry Sandpaper 413	1 quart	Rand-O-Fill G-6303 QT
1 quart	Super Seam Fabric Cement	6 Yard	C102 Straight Tape 2"
1 quart	G-6302 N/T Nitrate Dope Grain	1	Ceconite Hand Thread 250

FABRIC COVERING TOOL KIT

This kit includes the items most commonly needed to complete your Poly-Fiber covering project. Kit Includes: 4 - 1" Disposable Brushes, 3 - 2" Disposable Brushes, 4 - 2" opening 6" long Spring Clamps, 1 - CB-9 Pinking Shears, 10 - 1/2" Glue/Acid Brushes, 1 - Black & Decker Classic Iron, 1 Hobbico Fabric iron 110V, 1 - Silicone heat sink compound, 1 - Thermometer, 1 - 12" Straight Needle, 1 - 12" Curved Tip Needle, 1 - 6" Curved Needle, 2 - Gallon Paint Saver Lids, 1 - V-plore 330 series mask only, 1 - X-plore P100 Combo cart pkg. P/N 09-06230 ..... $206.95

POLY FIBER COVERING KIT

The Poly Fiber Covering Kit includes all of the materials generally required to recover a wide variety of small aircraft (see list below) except the fabric and topcoat. Poly-Fiber offers both Polytone and Aerothane topcoats in many colors. When you order this Covering Kit, you can also order the presewn fabric envelope or fabric yardage you will need to cover the aircraft. We are the best choice for your covering materials requirements. Count on Poly Fiber's largest distributor ...Aircraft Spruce!

Note: This kit is for aircraft requiring about 45 yards of fabric. Quantity required vary by aircraft. Verify quantity shown are correct for your aircraft before ordering kit.

P/N 09-02046 $2,580.00

POLY-FIBER MARK II MIXING LIQUID

Mixing liquid is a combination of catalyst and thinner to be used only with Mark II for Metal paint. Included in Mark II kits above, but also available separately. See directions for mixing, thinning, and application above. Shelf life is two years in unopened package.

Quart ..... P/N 09-03695 ..... $45.15
Gallon ..... P/N 09-03696 ..... $149.50

POLY-FIBER MARK II THINNER

Used to thin Mark II for Metal paint after it has been combined with Mark II Mixing liquid. Included in Mark II kits above, but also available separately. thinning is generally unnecessary when Mark II is sprayed. However, if orange peel results, you may use Mark II Thinner with 5 parts mixed Mark II paint. Shelf life is four years in unopened storage.

Pint ..... P/N 09-03697 ..... $9.00
Quart ..... P/N 09-03698 ..... $14.00
Gallon ..... P/N 09-03699 ..... $53.00

CS

PRE-SEWN POLY-FIBER AND CECONITE ENVELOPES

Presewn envelopes are much easier to install than fabric yard goods. The envelopes are sewn to fit each individual surface depending upon the type of airplane. They can be placed on the surface like a sock. The envelopes are sewn using a special thread and special stitches. Fabric tapes must be placed over all seams. The seams can be sewn chordwise or spanwise for the wings. Individual Pieces Priced Per Each. On presewn envelopes, individual pricing is done by each piece. (i.e. If your airplane is a Stearman, you will have 4 wings. Price shown is per wing - $86.44. Your cost for all 4 would be: 86.44 x 4 =$345.76

PLEASE ORDER BY PART NUMBER - Basic part numbers (09-XXX) are shown in the chart. Complete the part number with 10 for wing, 20 for fuselage, 30 for aileron, 40 for stabilizer, 50 for elevator, 60 for flap, 70 for rudder, or 80 for complete set. After the P/N, add -1 for Heavy Duty 3.4 oz Polyfiber Fabric, -3 for Medium Weight 2.6 oz. Polyfiber Fabric, -5 for Ceconite 101 fabric, or -6 for Ceconite 102 Fabric. Prices of envelopes vary based on Fabric selected. Example: Complete part number for a Stinson 108-1 complete set in Ceconite 102 fabric would be 09-67380-6. Note: All pre-sewn envelopes are non-cancelable, non-returnable special orders items.

PRICES SHOWN ARE FOR CECONITE 102 ONLY

Aircraft	Part No.	Wing (10)	Fuselage (20)	Aileron (30)	Stabilizer (40)	Elevator (50)	Flap (60)	Rudder (70)	Complete (80)
Aeronca 7AC 2place	09-641	$230.95	$365.95	$52.50	$48.00	$48.00		$45.25	$997.00
Aeronca 15AC	09-642		$399.95	$36.25	$26.50	$45.00		$43.25	$697.00
Beech D175/F17D/E17D	09-643	$213.95	$427.95	$48.25	$57.00	$33.25	$48.25	$48.25	$1,149.00
Beech D18/AT1/Twin	09-644			$60.00		$96.00	$84.00	$60.00	$474.95
1Bellanca14-19/14-13	09-645		$375.95						
Bellanca Viking	09-646		$350.95	$59.25	$52.50	$36.25	$40.75	$62.50	$915.00
Cessna 120/140/170	09-647								$417.95
Christen Husky	09-648		$342.00		$33.25	$36.25		$29.75	$1,108.00
Citabria 7, 8	09-649	$230.95	$365.95	$52.50	$52.50	$52.50	$48.25	$42.50	$1,146.00
Douglas DC-3	09-650			$209.95		$175.95		$127.95	$576.00
Ercoupe	09-651	$182.95							$365.95
Fairchild 24G/RW	09-652	$261.95	$281.95	$59.25	$75.25	$33.50		$103.95	$931.00
Fairchild 19/23/26	09-653		$172.95	$33.50	$33.50	$52.50		$103.95	$593.00
Funk			$266.95						
Great Lakes 2T1	09-654	$147.95	$313.95						$590.00
Howard DGA	09-655		$342.00						
Luscombe	09-656	$178.95							$333.00
Maule 4	09-657		$255.95		$48.00	$48.00		$48.00	$541.00
Maule 5	09-658		$374.95						
Navy N3N	09-659	$153.95	$204.95						$1,488.00
N. American AT6/SNJ	09-660			$63.50		$69.75		$113.95	$242.95
N. American P51	09-661							$33.50	
Piper J2/3, PA-18-95, 150	09-662	$216.95	$365.95	$39.50	$52.50	$52.50		$48.00	$1,052.00
Piper J5/PA 12/14	09-663	$212.95		$31.50	$52.50	$52.50		$48.00	$1,049.00
Piper PA 15/17	09-664	$153.95	$365.95	$48.00	$52.50	$52.50		$48.00	$737.00
Piper PA16	09-665	$221.95	$330.95	$53.00	$40.00	$53.00		$53.00	$659.00
Piper Colt	09-666	$164.95	$308.00	$43.75	$52.50	$52.50		$52.50	$971.00
Piper PA20/22	09-667	$164.95	$365.95	$52.50	$52.50	$52.50	$48.00	$52.50	$956.00
Ryan PT22/STA	09-702	$161.95		$35.75	$48.00	$48.00		$48.00	$766.00
Schweizer 119	09-668	$153.95	$255.95	$25.50	$38.50				$813.00
Schweizer 126	09-669	$63.50	$213.95	$52.50	$69.75	$69.75		$52.50	$510.00
Schweizer 222	09-670	$230.95	$255.95	$52.50	$69.75	$46.50	$31.50		$910.00
Schweizer 233	09-671		$359.00					$43.75	
Stearman PT13/17	09-672	$179.95	$278.95	$96.50	$69.75	$69.75		$69.75	$1,097.00
Stinson 108-1, 2, 3	09-673	$179.75	$399.95						$852.00
Stinson 10A/105/HW75	09-674	$127.95	$383.95	$22.95	$25.50	$82.50	$35.50	$38.50	$1,163.00
Stinson L5	09-675	$115.95	$270.95	$38.50	$51.25	$51.25	$38.50	$36.00	$864.00
Taylorcraft	09-676	$239.95	$365.95	$48.00	$48.00	$48.00		$48.00	$976.00
Waco UPF7	09-677	$169.95	$205.95		$25.50	$25.50		$25.50	$567.00
J-3 Interior	09-678								$178.95
Agricultural Aircraft	Part No.	Wing (10)	Fuselage (20)	Aileron (30)	Stabilizer (40)	Elevator (50)	Flap (60)	Rudder (70)	Complete (80)
1Ag Cat	09-679				$38.50	$65.25		$79.25	$282.95
Airtractor	09-680							$77.25	
Callair A9/A9B	09-681	$128.95	$115.95		$25.50	$25.50			$451.95
Piper PA25/Pawnee	09-682	$227.95	$211.95	$48.00	$52.00	$48.00	$48.00	$48.00	$996.00
Snow	09-683	$231.95	$205.95	$64.25	$38.50	$38.50	$64.25	$38.50	$1,071.00
Snow C/D	09-684				$38.50	$38.50		$38.50	$231.95
Thrush	09-685				$130.95	$220.95		$48.00	$644.00
1Weatherly	09-686			$38.50				$64.25	$244.95
Homebuilts	Part No.	Wing (10)	Fuselage (20)	Aileron (30)	Stabilizer (40)	Elevator (50)	Flap (60)	Rudder (70)	Complete (80)
Acro Sport I	09-687	$77.25	$154.95	$25.50	$38.50	$38.50		$19.00	$1,123.00
Acro Sport II	09-688	$90.00	$296.95	$25.50	$38.50	$65.25		$48.00	$852.00
Avid Flyer	09-689	$115.95	$296.95		$65.25	$25.50		$25.50	$515.00
Baby Great Lakes	09-690	$82.50	$90.00		$6.00	$12.50		$25.50	$334.95
Bowers Fly Baby	09-691	$196.95	$141.95	$48.00	$62.00	$52.00		$52.00	$502.00
Christen Eagle 1 & 2	09-692	$128.95	$196.95	$25.50	$25.50	$25.50		$25.50	$696.00
Corbin Baby Ace	09-693	$64.25	$115.95		$38.50	$38.50		$38.50	$425.95
Kitfox	09-694	$227.95	$288.95		$25.50	$25.50		$25.50	$835.00
Pitts S1S/S1C	09-695	$140.95	$192.95	$30.75	$48.00	$48.00		$39.50	$946.00
Pitts S2S/S2A	09-696	$199.95	$334.95	$12.50	$25.50	$25.50		$25.50	$1,049.00
Smith Miniplane	09-697	$147.95	$102.95		$12.50	$12.50		$25.50	$380.95
1Sonerai II	09-698		$253.95		$52.75	$46.25		$33.25	$528.00
Starduster I	09-699	$64.25	$90.00	$12.50	$25.50	$25.50		$25.50	$600.00
Starduster II	09-700	$166.95	$201.95	$38.50	$54.50	$62.00		$62.00	$738.00
Steen SkyBolt	09-701	$147.95	$115.95	$25.50	$25.50	$25.50		$25.50	$759.00

COMPLETE SETS

Antiques	Part #	Price
Cessna Airmaster	09-705	$709.00
BMooney Mite	09-717	$296.95
Cessna T50/UC78	09-706	$1,252.00
AN. American B25	09-718	$192.95
Commonwealth	09-707	$1,046.00
Porterfield 35/70	09-719	$644.00
BCulver Cadet	09-708	$399.95
Rearwin Sportster	09-721	$657.00

Antiques	Part #	Price
Skyranger	09-722	$990.00
ADeHavilland Heron	09-710	$386.95
Stinson 10/10A/10S	09-723	$1,218.00
Fleet	09-711	$593.00
Stinson AT19/V77	09-724	$1,771.00
Funk	09-712	$1,073.00
Stinson SR5C	09-725	$1,174.00

Model	Part #	Price
BGrumman TBMS	09-713	$412.95
Stinson SR9	09-726	$1,325.00
BMeyer OTW	09-714	$576.00
Taylorcraft 15	09-727	$1,046.00
Monocoupe	09-715	$606.00
DTravel Air 4000	09-728	$309.95
AMooney 20A	09-716	$72.00
Piper PA-18	09-450	$1,195.00

Homebuilts	Part #	Price
CCassutt 111M	09-730	$141.95
AChipmunk	09-731	$179.95
Corbin Jr. Ace	09-732	$399.95
EAA Bipe	09-733	$780.00
Fokker Tri-Plane	09-734	$696.00
Meyer Toot	09-735	$709.00
Pietenpol	09-736	$838.00
Stampe SV4C	09-737	$1,132.00
DVolksplane I	09-738	$283.95
DVolksplane II	09-739	$425.95
CWittman Tailwind	09-740	$425.95

[1]Does not include fabric for plywood wings - order separately. For individual wing envelope pricing, divide the number of wings on your aircraft into the wing price. [A]Tails Only [B]Plywood Or Metal Fuselage

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ULTRALIGHT SAILS

Our sails are made in the United States by a top flight sail loft. These sails are made from the highest quality 3.9 oz. Dacron, many of them from the original OEM sail patterns. These sails are guaranteed to fit properly. All sail sets come complete with tail feathers and fuselage covers, except where noted. All sail orders are on custom-fabricated basis. Therefore, please allow an average of three weeks for delivery. There are no refunds on sail sets unless they are defective. Non-refundable 100% deposit or credit card purchase required. A wide selection of sail colors are available. Contact Aircraft Spruce for details on colors, patterns, and custom work. Prices subject to change without notice.

Model	Part No.	Price
Teratorn Aircraft		
Tierra 2-Place Sail set(excludes cabin enclosure)	09-01780	$1,845.00
Tierra Complete Sail Set	09-01781	$1,856.00
Tierra Wing Surface set	09-01782	$1,345.00
T/A Complete Sail Set	09-01783	$1,198.00
T/A Wing Surface Set	09-01784	$1,031.00
Teratorn W/S Complete Sail Set	09-01785	$835.00
Tierra Aileron Surface Set	09-01786	$227.95
Elevator Surface Set	09-01787	$155.95
Tierra Horizontal Stabilizer	09-01788	$194.95
T/A Horizontal Stabilizer	09-01791	$95.00
Tierra Vertical Stabilizer	09-01792	$85.00
T/A and Tierra Rudder	09-01793	$122.95
Star Flight Aircraft		
TX 1000 and 2000 Complete Sail Sets	09-01794	$1,252.00
TX 1000 and 2000 Wing Surface Sets	09-01795	$1,136.00
Elevator Surface Set	09-01796	$100.00
Horizontal Stabilizer	09-01797	$105.95
Rudder Surface	09-01798	$95.00
Hurricane, Avenger & Phantom Aircraft Complete Sail Set	09-01799	$1,447.00
Wing Surface Set	09-01801	$1,197.00
Aileron Surface Set	09-01802	$270.00
Elevator Surface Set	09-01803	$140.00
Horizontal Stabilizer Surface Set	09-01804	$140.00
Upper Vertical Stabilizer	09-01805	$80.00
Lower Vertical Stabilizer	09-01806	$50.00
Rudder Surface	09-01807	$105.95
Advanced Aviation		
Cobra A or B Complete Sail Set	09-01855	$1,724.00
Cobra A or B Wing Surface Set	09-01856	$1,445.00
Cobra Aileron Surface Set	09-01857	$250.95
Cobra Horizontal Stabilizer	09-01858	$165.95
Cobra Elevator Surface Set	09-01859	$140.00
Cobra Rudder Surface	09-01860	$115.95
Explorer Complete Sail Set	09-01861	$1,776.00
Explorer Aileron Surface Set	09-01862	$175.00
Explorer Wing Surface Set	09-01863	$1,327.00
Explorer Wing Flap Set	09-01864	$160.95
Explorer Horizontal/Elevator Set	09-01865	$275.00
Explorer Vertical Stabilizer	09-01866	$140.00
Explorer Rudder Surface	09-01867	$150.95
Explorer Gap Cover	09-01868	$95.00
Buccaneer 2 & Carrera 180	09-01869	$2,337.00
Buccaneer 2 Wing Only	09-01870	$1,223.00
Buccaneer 2 Aileron Set	09-01871	$225.00
Buccaneer 2 Vertical Stabilizer	09-01872	$179.95
Buccaneer 2 Rudder Surface Set	09-01873	$150.95
Buccaneer 2 Stabilizer/Elevator	09-01874	$280.00
Buccaneer 2 Gap Cover	09-01876	$95.00
Buccaneer 2 Flap Set	09-01877	$170.00
Buccaneer SX Sail Set	09-01878	$2,156.00
Carrera Complete Sail Set(Includes Pylon Cover)	09-01879	$2,245.00
Carrera Complete Sail Set	09-01880	$1,249.00
Carrera Wing Surface Set	09-01881	$225.00
Carrera Wing Surface Set	09-01882	$669.00
Carrera Wing Flap Set	09-01883	$173.95
Carrera Aileron Set	09-01884	$150.95
Carrera Pylon Fairing	09-01885	$281.95
Quicksilver Aircraft		
MX Complete Sail Set	09-01736	$975.00
MX Wing Surface Set	09-01737	$729.00
MX Qualifier Complete Sail Set	09-01738	$1,246.00
MX Qualifier Wing Set	09-01739	$1,089.00
MX Tapered Stabilizer Option	09-01763	$60.00
MX Horizontal Stabilizer	09-01765	$80.00
MX Rudder Surface	09-01768	$95.00
MX-MXL Elevator Set	09-01764	$95.00
MX2 Complete Sail Set	09-01740	$1,015.00
MX2 Wing Surface Set	09-01741	$744.00
MX2 H.P. Complete Sail Set (X-tra Ribs/ Tapered Stabilizer)	09-01742	$1,150.00
Quicksilver Weight Shift Rudder	09-01769	$85.00
Quicksilver Weight Shift Complete Sail Set	09-01743	$875.00
MXL Complete Sail Set	09-01744	$1,595.00
MXL Wing Surface Set	09-01745	$1,250.00
MXL Aileron Surface Set	09-01766	$279.00
MXL Tapered Stabilizer	09-01767	$100.00

Model	Part No.	Price
MXL Sport 2 Complete Sail Set	09-01746	$1,750.00
MXL Sport 2 Wing Sail Set	09-01747	$1,425.00
MXL Super Sport Complete Sail Set	09-01748	$1,650.00
MXL Super Sport Wing Sail Set	09-01749	$1,299.00
Sprint Complete Sail Set	09-01751	$1,225.00
Sprint Wing Sail Set	09-01752	$859.00
Sprint 2 Sail Set	09-01755	$1,335.00
Sprint 2 Wing Set	09-01760	$965.00
GT 400 Complete Sail Set(Includes Pylon Cover)	09-01761	$2,315.00
GT 500 Complete Sail Set	09-01790	$2,306.00
GT 400 Wing Surface Set	09-01770	$1,265.00
GT 500 Wing Surface Set	09-01771	$1,335.00
GT 400/500 Wing Flap Set	09-01772	$215.00
GT 400/500 Aileron Set	09-01773	$215.00
GT 400 Pylon Fairing	09-01774	$525.00
GT 400/500 Stabilizer/Elevator Set	09-01775	$275.00
GT 400 Rudder	09-01776	$145.00
GT 500 Rudder	09-01777	$245.00
GT 400 Vertical Stabilizer	09-01778	$50.00
GT 500 Vertical Stabilizer	09-01779	$1,447.00
GT 500 Door Set (Left & Right)	09-01762	$825.00
Wizard Aircraft		
Weight Shift Complete Sail Set	09-01808	$1,058.00
J-3 Complete Sail Set	09-01809	$1,169.00
J-3 Wing Surface Set	09-01810	$965.00
T-38 Complete Sail Set	09-01811	$1,350.00
T-38 Wing Surface Set	09-01812	$1,170.00
J-3 & T-38 Elevator Surface Set	09-01813	$90.00
J-3b & T-38b Elevator Surface Set	09-01814	$90.00
J-3 & T-38 Rudder A or B	09-01815	$95.95
Flight Star Aircraft		
Flight Star Complete 2 Place Sail Set	09-01816	$2,162.00
Flight Star Complete Single Place Sail Set	09-01817	$1,614.00
Flight Star Wing Surface Set	09-01818	$1,090.00
Flight Star Aileron Surface Set	09-01819	$305.95
Flight Star Elevator Surface Set	09-01820	$143.95
Flight Star Horizontal Stabilizer Surface	09-01821	$139.95
Flight Star Vertical Stabilizer	09-01822	$75.00
Flight Star Rudder Surface	09-01823	$95.00
Flight Star 2-Place Left & Right Wing	09-01824	$1,327.00
Rotec Rally Aircraft		
Rotec Ralley 2b & Champ Complete Sail Set	09-01826	$1,075.00
Rotec Ralley 2b & Champ Wing Surface Set	09-01827	$890.00
Rotec Ralley Sport Complete Sail Set	09-01828	$1,115.00
Rotec Ralley Rally 3 Complete Sail Set	09-01829	$1,390.00
Rotec Ralley Rally 3 Wing Surface Set	09-01830	$1,235.00
Rotec Ralley Rally Wing Tip Option	09-01831	$90.00
Rotec Ralley 2b & Champ Elevator Surface Set	09-01832	$90.00
Rotec Ralley 2b & Champ Horizontal Stabilizer	09-01833	$90.00
Rotec Ralley Sport Elevator Set	09-01834	$110.95
Rotec Ralley Sport Rudder	09-01835	$105.95
BI-RD Aircraft		
BI-RD Complete Sail Set	09-01836	$1,526.00
BI-RD Wing Surface Set	09-01837	$1,218.00
Aileron Surface Set	09-01838	$140.00
Elevator Surface Set	09-01839	$95.00
Horizontal Stabilizer Surface Set	09-01840	$95.00
Vertical Stabilizer Surface	09-01841	$45.10
BI-RD Rudder	09-01842	$85.00
Condor Aircraft		
Condor Complete Sail set	09-01843	$1,160.00
Condor Wing Surface Set	09-01844	$940.00
Elevator Surface Set	09-01845	$105.95
Horizontal Surface	09-01847	$105.95
Rudder Surface	09-01848	$90.00
Weedhopper Aircraft		
Weedhopper Super Nova Set	09-01849	$1,620.00
Weedhopper C or B Complete Sail Set	09-01850	$1,475.00
Weedhopper C or B Wing Surface Set	09-01851	$1,295.00
Weedhopper Stabilizer/Elevator Surface Set	09-01852	$290.00
Weedhopper Sub Fin Surface	09-01853	$55.00
Weedhopper Rudder Surface	09-01854	$85.25

FOR A COMPLETE LISTING OF ULTRALIGHT SAILS, COLOR CHARTS, AND DIAGRAMS, PLEASE VISIT www.aircraftspruce.com

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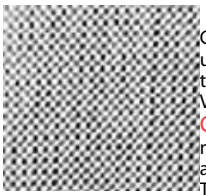
CECONITE – STAR GLOSS



CECONITE FABRIC

Ceconite, 100% polyester fabric is approved for use on most certified aircraft. To be sure to check the master eligibility list in the procedure manual. Visit our website for Data Sheet.

CECONITE 101 Extra heavy-duty fabric recommended for the most severe operating conditions and very high-wing loading aircraft. 3.4 oz/sq yd. Thread Count: 144 X 57/in

70" Width ..... P/N 09-00700 ..... $13.30 /lin. yd

CECONITE 102 Standard fabric is recommended for normal service and is widely used on all types of aircraft, regardless of wing loading or horsepower. 2.79 oz/sq yd. 73"X65"

P/N 09-00900 ..... $11.95 /lin. yd

UNCERTIFIED LIGHT - Light-weight fabric is recommended for covering plywood surfaces on any aircraft and any ultralight aircraft that is not certified. On certified aircraft, it is only approved for covering plywood surfaces. This fabric will be unstamped. 1.87 oz/sq yd. Thread Count – 90 x 76/in. 66" Width ..... P/N 09-00921 ..... $8.40 /lin. yd

SUPER SEAM FABRIC CEMENT

New Super Seam Fabric Cement. Not compatible with original nitrate-based Super Seam. Used to attach Ceconite Fabric to structures. High solids nitrate based cement approved in the Ceconite STC.

1 Qt. ..... P/N 09-18100 ..... $27.25

1Gal. ..... P/N 09-18200 ..... $99.80

POLYESTER THREAD & CORD (FAA APPROVED)

CECONITE - D693 waxed, 600 yds.

P/N 09-41300-1 ..... $45.25

CECONITE - Flat Braided, 500 yds.

P/N 09-00822 ..... $45.25

HAND SEWING THREADS - 250 yds

P/N 09-41400 ..... $11.75

MACHINE SEWING THREAD - 5600 yds ..... P/N 09-41500 ..... $15.25

INTERIB BRACING TAPE - 36 yd roll, 1/2"w ..... P/N 09-41560 ..... $16.70

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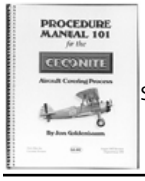
CECONITE REINFORCING TAPES (FAA APPROVED)

Polyester twill with adhesive back. Applied under riblacer, server, or pop rivet to prevent fabric from ripping. 60 yd. length.

1/4" width ..... P/N 09-41230 ..... $55.00

3/8" width ..... P/N 09-41238 ..... $56.60

1/2" width ..... P/N 09-41212 ..... $57.95



CECONITE PROCEDURE MANUAL

STC manual for applying ceconite materials.

P/N 09-01000 ..... $10.00

STAR-TAK FABRIC CEMENT

Star-Tak is a vinyl-based cement that is used to cement aircraft fabric to steel, aluminum, wood, or composite surfaces. It is also used to join fabric together in overlapped cemented seams. It dries to the touch in 15 to 20 minutes in normal temperatures. In two hours, it develops a bond strong enough to allow heat shrinking the fabric.

Quart ..... P/N 09-02583 ..... $27.25

Gallon ..... P/N 09-02584 ..... $99.80

STAR GLOSS GRAY SEALERS

Gray Sealer is used to seal Ceconite fabric prior to spraying Silver Urethane Fabric Primer. This coat prevents pinholes in the Silver Urethane Fabric Primer. Gray Sealer is also used to apply Ceconite finishing tapes. It is tinted translucent gray to help see it when applied.

Quart ..... P/N 09-02577 ..... $25.55

Gallon ..... P/N 09-02578 ..... $85.00

5 Gallon ..... P/N 09-02579 ..... $420.00

STAR GLOSS SEALER REDUCER

Thinner for Gray Sealer. Mix three parts Gray Sealer to one part Sealer Reducer. Shelf Life: Four years, unopened in protective storage. Not affected by freezing.

Quart ..... P/N 09-02580 ..... $15.40

Gallon ..... P/N 09-02581 ..... $48.25

5 Gallon ..... P/N 09-02582 ..... $230.90

CECONITE TAPES

This FAA approved process utilizing Ceconite polyester fabrics and the Randolph line of finishes assures a beautiful, durable, weather-resistant cover job every time. The Ceconite cover process was issued Supplemental Type Certificate No. SA4503NM in 1997, and this number will apply to all aircraft. Note: Only Randolph materials may be used through the topcoat paint to comply with STC requirements. Randolph finishes are required for approval. Ceconite is approved for use on most certified aircraft. To be sure, check the Approved Model List in the latest revision of Procedure Manual 101 for the Ceconite Aircraft Covering Process.

LINEAR STRAIGHT TAPES (CECONITE 102)

Width	Roll	Part No.	Price
1"	50 yds	09-41010	$21.35
1.5"	50 yds	09-41015	$28.65
2"	50 yds	09-41020	$34.75
3"	50 yds	09-41030	$51.90
4"	50 yds	09-41040	$60.85
6"	50 yds	09-41060	$72.60

LINEAR PINKED TAPES (CECONITE 102)

1"	25 yds.	09-41111	$16.05
1.5"	25 yds.	09-41116	$17.65
2"	50 yds.	09-41120	$30.20
2"	25 yds.	09-41125	$23.20
3"	25 yds.	09-41135	$27.80
4"	25 yds.	09-41145	$32.40
6"	25 yds.	09-41166	$45.00

LINEAR PINKED TAPES (CECONITE LIGHT)

1"	25 yds.	09-41251	$16.05
1.5"	25 yds.	09-41255	$17.65
2"	25 yds.	09-00298	$23.20
2"	50 yds.	09-41252	$30.20
3"	25 yds.	09-41253	$27.80
4"	25 yds.	09-41254	$32.40
6"	25 yds.	09-41256	$45.00

BIAS PINKED TAPES

For use on curved edges.

2"	25 yds.	09-41165	$32.45
3"	25 yds.	09-41170	$46.15
4"	25 yds.	09-41175	$57.35

STAR GLOSS SILVER URETHANE FABRIC PRIMER

Silver Urethane Fabric Primer is a polyurethane product that serves two purposes: to build the coating over the fabric to prepare for paint, and to protect the fabric from UV radiation. Silver Primer uses a metallic-like flake additive. This proven system results in a positive metallic light block and reflection to both visible and invisible UV without relying on chemical UV light blockers.

Quart ..... P/N 09-02585 ..... $28.75

Gallon ..... P/N 09-02586 ..... $101.20

STAR GLOSS SILVER URETHANE FABRIC PRIMER CATALYST

Silver Urethane Fabric Primer Catalyst is the only catalyst that can be used with Silver Urethane Fabric Primer. Note that unlike other catalysts it is mixed at a four to one ratio of primer to catalyst.

1/2 Pint ..... P/N 09-02587 ..... $34.50

Quart ..... P/N 09-02588 ..... $78.20

STAR GLOSS SILVER URETHANE FABRIC PRIMER REDUCER

A special blend of solvents specifically formulated for use with Ranthane and Star Gloss Silver Urethane Fabric Primer.

Gallon ..... P/N 09-02374 ..... $49.00

STAR GLOSS AIRCRAFT COVERING PROCESS PROCEDURE MANUAL

114 pages of step-by-step instruction on how to cover your airplane with the Ceconite/Star Gloss system, helpful photos, great nostalgic cartoons, extra words of wisdom, and a delightful sense of humor. Includes catalog of products, everything from fabrics to top coat paint. P/N 09-02576 ..... $10.00

DACRON TAPE / PEEL PLY

A layer of 2.7 oz. Dacron fabric strips or tape laminated into a layup as if it were an extra ply of glass. The peel coat wets out with epoxy like glass cloth and cures along with the rest of the layup. However, the Dacron does not adhere structurally to the glass and when peeled away it leaves a surface ready for glass-to-glass bonding without sanding.

Requirements for Small Aircraft: For Expermental Aircraft.

• 3 Rolls of 1" x 50 Yds. Tape • 2 Rolls of 2" x 50 Yds. Tape .....• 1 Roll of 3" x 50 Yds. Tape • 1 Roll of 4" x 50 Yds. Tape

Width	Smooth Edge		Pinked	
50 Yd Roll	P/N 09-	Price/ Roll	P/N 09-	Price/ Roll
1"	15000	$5.40	15450	$7.50
2"	15100	$13.85	15500	$13.75
3"	15200	$21.75	15600	$19.90
4"	15300	$28.75	15700	$27.25
6"	15400	$44.25	15800	$39.85

Discount Schedule for Dacron Tapes: Less 10% for 12 Rolls (assorted) • Less 15% for 25 Rolls (assorted). Request quote on larger quantities.

DACRON FABRIC / FULL WIDTH PEEL PLY

Poly/Dacron blend is excellent as peel ply for composite lay-ups, and for covering expermental aircraft.

2.7oz. 63-66" #604 ..... P/N 09-00300..... $4.75/yd.
1.8 oz. X 60-62" #611 .... P/N 09-00100..... $3.90/yd.
2.97 oz. X 62" #605 ..... P/N 09-00500..... $3.95/yd.

DACRON BIAS TAPE FOR HOMEBUILT AIRCRAFT

Bias-cut tapes (weave 45° to edge) are especially useful for trimming compound curves on components such as wing tips and tail surfaces. Bias tape will stretch to conform to the contour without wrinkles, without heat-shrinking edges or cutting and notching to remove excess fabric. Stretching reduces the width about 35% so 3" tape should be used to finish areas normally covered with 2" tape. 2" Bias tape will pull to about 1-3/8" width.

2" x 50 Yd . Roll ..... P/N 09-16300 ..... $25.75
3" x 50 Yd. Roll..... P/N 09-16400 ..... $59.50
NOT FOR USE ON CERTIFIED AIRCRAFT

COTTON REINFORCING TAPES

Tape	Size	Part No.	Price/Roll
DDD-T-86F	1/2" x 36 Yds.	09-17000	$13.95

THREADS & CORDS

Only synthetic threads and rib lacing cords should be used with Dacron covering to insure uniform strength. Waxed linen rib cord Conforms to PMA# TQ0075NM and STC# SA1008WE.

Material	Quantity	Part No.	Price
Dacron Machine Sewing Thread	500 Yds.	09-03900	$15.25
Dacron Hand Sewing Thread	250 Yds.	09-04000	$11.75

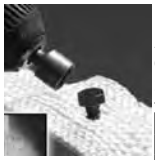
SAIL FABRIC

#1003 Glacier White Sail Fabric. 54" wide. 4.1 oz. Color may vary from sample shown. Sold by the yard. Note: This fabric is for ultralight sails, and will not shrink.

Color	Part No.	Price
1003 Glacier White	15-04587	$9.85
192 Lime Green	15-04588	$14.90
196 Deep Purple	15-04589	$11.95
197 Red	15-04590	$14.50
201 Jet Black	15-04591	$14.60
232 Hot Pink	15-04592	$11.95
309 Emerald Green	15-04593	$11.95
310 Royal Blue	15-04595	$14.90
360 Key West Blue	15-04597	$11.95
566 West Coast Gold	15-04598	$13.25

FLORIAN PINKER

One continuous pinked edge while being comfortable for either right or left hand use. Light and compact for easy use and easy storage. Gives that "professional look" to your own creations and easily pinks the most intricate patterns. Made in U.S.A. P/N 09-01400 .....$77.50



DIAMOND BACK TAPE

Advantages: • Save TIME with easy installation • Save OPERATING COSTS with improved energy efficiency • Save REPAIR COSTS with long lasting quality at high temp • Save ON PRICE with quantity discounts

CHARACTERISTICS	
Fibers	Ceramic
Application	Insulation with bolt holes
Weave Style	Drop Warp
Thickness	.125 in
Bolt Diameter	Up to .75 in
Continuous Service	1,800°F
Maximum Use	2,300°F
Durability	High Strength
Coating	Plain or Vermiculite Avail.

Type	Width	Thickness	Roll Length	Part No.	Price
1/8" Thickness - Plain	2"	.125"	100ft.	05-03510	$113.80
1/8" Thickness - Vermiculite Coated	2"	.125"	100ft.	05-03511	$162.99

PANASONIC IRON MULTI DIRECTIONAL 360 DEGREE

New Concept 360° Quick Steam/Dry Iron with Curved Non-Stick Coated Titanium Soleplate, Multi-Directional Design with Added Steam Vents, 3-Way Auto Shut-Off, Adjustable Steam, Dial Temperature Control, "Stay Clean" Steam Vents and Anti-Drip System. Maximum Temperature 392F (200C). Controls: Choose Steam or Dry Operation: 4 Button Selector. Select "Extra" Jet-of-Steam: Left Pushbutton. Cool Water Spay or Mist: Right Pushbutton. .....P/N 09-03785 ..... $72.75

FAB-TAC FABRIC CEMENT

A superior quality cement for strong splice joints. Use to cement tapes, rings and grommets to fabric cover.

1 Pint .....P/N 09-17800 ..... $12.90
1 Qt .....P/N 09-17900 ..... $17.75
1 Gal.....P/N 09-18000 ..... $56.75

CLOTH MASKING TAPE

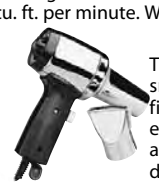
Has many uses in aircraft maintenance work. Strip over sharp corners under fabric. Strips on parts under doped fabric will prevent fabric from sticking to parts. Pressure-sensitive adhesive backing. Easily applied, easily removed. Leaves no residue. Should not be applied below 32°F. 1" x 60 yds.....P/N 09-17100 ..... $10.50

SOLDERING IRON

Use to melt drain holes and inspection rings in polyester fabric. 35 Watt, 900°F tip. Tip is replaceable & long life coated. P/N 09-37430 .....$79.50

HEAVY-DUTY HEAT GUN

This soft air velocity of this heat gun increases the surface temperature to the required working temperature much faster than conventional heat guns and maintains a higher temperature for faster completion of the application. Features double insulation, two temperature selections of 570°F and 1000°F, and a unique impact resistant heating element. Operates on 120V AC at 11.6 amps. Air volume 14.8 cu. ft. per minute. Wt. 1-1/2 lbs..... P/N 09-00354.....$99.75



DELUXE HEAT GUN

This handy tool gives you a fast, drum-tight, mirror smooth finish. It's ideal for heat-shrinkable covering films. Get a professional finish with less time and effort. 1-year warranty. Features: • Includes removeable wide nozzle • 1000-watt heating power • Heavy-duty fan motor • Textured, composite hand-grip • 3-position, hot/cool/off switch • Adjustable air intake baffle • Weight: 15 oz • 5.5' AC power cord with 2 prong plug

P/N 12-00527.....$28.60

POCKET THERMOMETER

This Pocket thermometer can eliminate 80% of your iron-on covering problems. These problems are caused by your iron's temperature varying as much as 60° while in use, which causes bubbles and sags. If you are using an iron other than Black Baron, this thermometer is a must in monitoring iron temperatures.

P/N 09-37500 .....$7.50

MAULE FABRIC TESTER

A fine quality tool to test fabric covered aircraft for minimum FAA requirements without removing or punching holes in fabric. Also used to test struts for inside rusting as required by FAA on all Piper aircraft with struts.

P/N 09-14900 ..... $398.00

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PTI SPECIALTY PAINTS

PTI Specialty Paint & Coatings, exclusively from Aircraft Spruce & Specialty Co., are featured in space, aerospace and aviation applications throughout the world -- the Space Shuttle and Space Station projects, the Patriot and Stinger missile projects and in refurbishing of landing gear for commercial aircraft. Now, Aircraft Spruce brings PTI products to General and Sport Aviation.

See all PTI Paint Products at www.aircraftspruce.com

1. Paint Strippers
2. Primers: Acid Etch and Epoxy
3. Topcoats: A chemical resistant Polyurethane with UV protectors
4. PTI Polykick™ to accelerate drytime
5. Cleaners

PTI COMPLETE SPECIALITY PAINT SYSTEM

Note: Strong professional recommendation – These products have been specifically formulated to work together. Maximum adhesion, durability and performance is achieved when these products are applied as a system. To Purchase Your Specialty Paint System Simply tell us the make and model of your aircraft, and the Federal 595 Color – see chart on our website at: www.aircraftspruce.com Need a custom color that is not on the chart? – Ask us, we can help you with that too.

SOLVENTS, REMOVERS, & REDUCERS

PTI-MEK is virgin (not recycled) MEK that may be used to clean and prepare the substrate for painting. PTI-MEK may also be used to clean brushes, paint guns and other painting tools. PTI-Acetone is virgin (not recycled) Acetone that may be used to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that set up in spray guns or hoses. Acetone is not effective on urethanes and should not be used. Use MEK for cleanup on urethane products. Use only virgin acetone. Recycled acetone can damage virtually anything to which it is applied. PTI-Toluene is virgin (not recycled) toluene that may be used as a reducer for enamels and other coatings in the alkyd family. Do not use with PTI chromate and chromate free primers. Instead, use PT-1022X66 reducer. PT-1045 is a reducer specially formulated to compliment the PTI Air Dry Wash Primer. PT-1022X66 is a reducer specially formulated to compliment the PTI chromate and chromate free primers. PT-1003 Type II is a reducer specially formulated to compliment the PTI Epoxy primer.

Description	Part No.	Price
Alkyd&Lacquer Thinner Qt.	09-00943	$16.50
Alkyd&Lacquer Thinner Gal.	09-00942	$45.75
Mek Qt.	09-00972	$12.95
Mek Gal.	09-00971	$32.50
Acetone Qt.	09-00974	$9.80

Description	Part No.	Price
Acetone Gal.	09-00973	$30.95
Toluene Qt.	09-00976	$9.70
Toluene Gal.	09-00975	$25.85

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EPOXY PRIMER

PTI's Epoxy Primer is a low VOC (volatile organic compounds) epoxy polyamide solvent primer which conforms to the military specification MIL-P-23377 Rev. E. This coating is highly recommended for use on aluminum and all plated or unplated metallic surfaces to insure maximum protection against corrosion. This primer may be used as an interior or exterior primer that insures maximum adhesion of any paint or lacquer finish coats.

NOTE: Before applying, refer to the technical data sheet for this product.

*Must be shaken for 15 min. on a paint shaker.

Description	Part No.	Price
Yellow QT KIT	09-00934	$131.75
Yellow GAL KIT	09-00932	$261.95
Green QT KIT	09-00935	$129.75
Green GAL KIT	09-00933	$249.95
Epoxy Thinner QT	09-00937	$17.65
Epoxy Thinner Gal	09-00936	$48.75

ACID ETCH PRIMER

PTI's Air Dry Wash Primer requires no sanding and is a polyvinyl butyral zinc chromate formulation that may be used to prime all plain or plated metallic surfaces. Priming surfaces with this primer will ensure maximum adhesion of all bake or air-dry finish coats (including lacquer finish coats). The finely ground emulsions of zinc chromate pigment, resins and phosphoric acid hardeners are virtually non-settling. For the best results follow the instructions on the technical data sheet. This primer exceeds the performance standards specified in Department of Defense specification (DOD) 15328 and Military Specification MIL-8514.

Description	Part No.	Price
Yellow Acid Etch Primer QT.	09-00948	$41.50
Yellow Acid Etch Primer Gal.	09-00946	$67.90
Yellow Acid Etch Primer 5Gal	09-00944	$271.95
Green Acid Etch Primer QT	09-00949	$39.85
Green Acid Etch Primer Gal	09-00947	$67.90
Green Acid Etch Primer 5Gal	09-00945	$271.95
Reducer 1045 QT	09-00951	$16.50
Reducer 1045 GAL	09-00950	$45.50

ZINC CHROMATE PRIMER

PTI's Zinc Chromate Primer is formulated to exceed the performance standards in the Federal Specification TT-P-1757. This primer promotes maximum adhesion to bare aluminum and steel and is recommended for that purpose. PTI's zinc chromate primer is a formulation proven to perform.

Description	Part No.	Price
Zinc Chromate Yellow Spray 13 oz.	09-00901	$11.95
Zinc Chromate Yellow QT	09-00919	$64.90
Zinc Chromate Yellow Gal	09-00922	$106.75
Zinc Chromate Yellow 5Gal	09-00952	$458.00
Zinc Chromate Green Spray 13 oz.	09-00895	$12.50
Zinc Chromate Green QT	09-00917	$64.95
Zinc Chromate Green Gal	09-00918	$108.75
Zinc Chromate Green 5Gal	09-00953	$458.00
1022X66 Reducer QT	09-00956	$14.50
1022X66 Reducer Gal	09-00954	$34.50

ZINC OXIDE PRIMER - CHROMATE FREE

PTI's Zinc Oxide Primer is formulated to exceed the performance standards in the Federal Specification TT-P-1757. Promotes maximum adhesion to bare aluminum and steel. Formulated to provide a high performance primer that is considered a safer, more environmentally friendly, alternative to the zinc chromate primer.

Description	Part No.	Price
Zinc Oxide Yellow Spray 13 oz.	09-01617	$11.95
Zinc Oxide Primer Yellow QT	09-00961	$76.75
Zinc Oxide Primer Yellow Gal	09-00959	$143.75
Zinc Oxide Primer Yellow 5Gal	09-00957	$597.00
Zinc Oxide Green Spray 13 oz.	09-00904	$11.95
Zinc Oxide Primer Green QT	09-00962	$74.85
Zinc Oxide Primer Green Gal	09-00960	$139.75
Zinc Oxide Primer Green 5Gal	09-00958	$597.00

PTI SANDABLE PRIMER

PT-573 is a two component epoxy based primer. PT-573 is capable of filling small holes and imperfections before topcoating. PT-573 provides a smooth, sandable base coat that improves the adhesion and appearance of the topcoat. Because of PT-573's unique formula, this primer also provides excellent rust and corrosion protection. This sandable primer is compatible with PTI's epoxy and Polyurethane topcoats.

Description	Part No.	Price
PTI 573 Sandable Primer 2 gallon	09-02311	$185.75
PTI 573 Sandable Primer 1 gallon	09-02312	$114.75
PTI 573 Sandable Primer Quart	09-02313	$69.75

ALL mixed paints are special order and are non-returnable.

PTI SPECIALTY PAINTS

PTI EPOXY TOPCOAT INTERIOR APPLICATION

Two component catalyst cure epoxy polyamide which meets, and exceeds, MIL-PRF-22750E&F; Type 1. This system cures to an extremely hard, impervious film which resists yellowing and chalking. The Epoxy Topcoat provides the ultimate protection and gives a high quality finished appearance to metal, wood, and most other materials capable of being coated. Intended specifically for interior application to improve longevity and provide durability. This product is available in every color from the 595C Federal Color standard. Custom color matching available upon request.

To Order use "Base Part No." followed by the dash number of desired finish and size listed below.

-43 is for Flat Quart -53 is for Semi-Gloss Quart -63 is for Gloss Quart
-44 is for Flat Gallon -54 is for Semi-Gloss Gallon -64 is for Gloss Gallon

Description	Base Part No.	Flat		Semi-Gloss		Gloss	
		Quart (-43) Price	Gallon (-44) Price	Quart (-53) Price	Gallon (-54) Price	Quart (-63) Price	Gallon (-64) Price
Boston Maroon	09-10049	$168.95	$278.95	$168.95	$278.95	$195.75	$327.00
Elisnore Brown	09-10080	$151.75	$250.95	$151.75	$250.95	$151.75	$251.95
Bermuda Tan	09-10324	$110.95	$150.75	$150.75	$250.95	$151.75	$251.95
Madrid Red	09-11120	$168.95	$278.95	$168.95	$278.95	$210.95	$352.00
Tennesse Red	09-11136	$168.95	$278.95	$168.95	$270.95	$210.95	$352.00
Christen Eagle Red	09-11140	$168.95	$278.95	$182.75	$259.50	$225.95	$377.00
Intnl Orange	09-12197	$115.95	$191.95	$115.95	$191.95	$161.75	$267.95
Yellow/Orange	09-12243	$115.95	$191.95	$116.95	$191.95	$171.75	$284.95
Pumpkin Orange	09-12246	$115.95	$191.95	$115.95	$191.95	$171.75	$284.95
Champion Yellow	09-13275	$170.95	$283.95	$170.95	$283.95	$221.95	$368.00
AC Eagle Yellow	09-13415	$170.95	$283.95	$221.95	$368.00	$165.95	$275.95
AG Cat Yellow	09-13432	$221.95	$368.00	$221.95	$368.00	$221.95	$368.00
J3 OEM Yellow	09-13507	$170.95	$283.95	$170.95	$283.95	$221.95	$368.00
Tuscon Cream	09-13523	$170.95	$283.95	$170.95	$283.95	$196.75	$316.00
Cub Yellow	09-13538	$170.95	$318.00	$170.95	$283.95	$221.95	$368.00
Diana Cream	09-13578	$170.95	$283.95	$170.95	$283.95	$160.95	$267.95
lemon Yellow	09-13591	$170.95	$283.95	$170.95	$283.95	$196.75	$327.00
Lockhaven Yellow	09-13637	$110.95	$183.95	$117.75	$183.95	$151.75	$251.95
Federal Yellow	09-13655	$110.95	$183.95	$110.95	$183.95	$151.75	$251.95
Sun Valley Ivory	09-13690	$90.00	$150.95	$90.00	$159.75	$149.99	$250.95
Forest Green	09-14036	$130.95	$216.95	$130.95	$216.95	$181.75	$300.95
Portland Green	09-14062	$130.95	$216.95	$130.95	$216.95	$171.75	$270.95
Federal Green	09-14064	$130.95	$216.95	$130.95	$216.95	$171.75	$284.95
Oak Green	09-14079	$161.75	$267.95	$161.75	$267.95	$161.75	$267.95
Olive Drab Green	09-14084	$130.95	$216.95	$130.95	$216.95	$136.75	$225.95
Lawn Green	09-14090	$130.95	$216.95	$130.95	$216.95	$171.75	$284.95
Everglades Green	09-14110	$130.95	$216.95	$130.95	$216.95	$171.75	$284.95
Cuby Sport Trainer Green	09-14193	$130.95	$216.95	$130.95	$216.95	$171.75	$284.95
Insignia Blue	09-15044	$105.95	$175.95	$105.95	$175.95	$144.99	$242.95
Twilight Blue	09-15052	$105.95	$175.95	$105.95	$175.95	$144.99	$243.95
Christen Eagle Blue	09-15056	$105.95	$175.95	$105.95	$175.95	$144.99	$242.95
AN True Blue	09-15102	$105.95	$175.95	$175.95	$175.95	$144.99	$242.95
Bahama Blue	09-15180	$105.95	$175.95	$105.95	$175.95	$144.99	$242.95
Piper Trainer Blue	09-15182	$105.95	$175.95	$105.95	$175.95	$144.99	$242.95
Lakeland Blue	09-15526	$105.95	$175.95	$175.95	$175.95	$144.99	$242.95
AG CAT Gray	09-16099	$90.00	$150.95	$90.00	$150.95	$85.00	$141.95
Federal Gray	09-16251	$90.00	$226.95	$95.00	$218.95	$134.75	$225.95
Rancho Silver	09-16314	$90.00	$150.95	$90.00	$150.95	$134.99	$225.95
Polar Gray	09-16357	$93.75	$141.95	$90.00	$226.95	$133.75	$225.95
Glacier White	09-16492	$90.00	$150.95	$90.00	$150.95	$134.99	$225.95
Daytona White	09-16555	$90.00	$150.95	$90.00	$150.95	$134.99	$225.95
Insignia White	09-17925	$90.00	$150.95	$135.00	$226.95	$134.99	$225.95
Reno Gold	09-17043	$99.50	$150.95	$97.00	$150.95	$134.99	$225.95
Christen Eagle Purple	09-17100	$100.00	$166.95	$100.00	$166.95	$134.99	$225.95
Nevada Silver	09-17178	$100.00	$166.95	$100.00	$166.95	$135.75	$225.95
Juneau White	09-17886	$100.00	$166.95	$100.00	$166.95	$135.75	$225.95

PTI WATERBORNE EPOXY PRIMER - LOW VOC

Chemical and solvent resistant. TUF/FILM epoxy primer that conforms to MIL-PRF -85582D. It is especially recommended to inhibit corrosion of aluminum and other plated or unplated metallic surfaces, as well as composite surfaces. This primer should be used with PTI topcoats to provide maximum adhesion and corrosion protection.

Light Green Primer Quart ..... P/N 09-02679 ..... $74.75
Light Green Gallon Primer kit with Catalyst ..... P/N 09-03436 ..... $127.75
Dark Green Primer Quart ..... P/N 09-02681 ..... $112.75
Dark Green Primer Gallon ..... P/N 09-02682 ..... $168.75
Catalyst Pint ..... P/N 09-02683 ..... $33.50

PTI ANTI-SEIZE COMPOUND

PTI's Anti-seize Compound is a silicone base grease with a high pigmentation of micro fine molybdenum disulfide. It is heat stable and will not decompose or form a gum deposit. It is effective under light or medium bearing loads on steel to bronze, metal babbit, zinc, nylon, Teflon or hard-anodized aluminum surfaces. Normally it is suitable for operating temperatures of -65 F to + 1000 F.

Pint ..... P/N 09-02901 ..... $113.80
Quart ..... P/N 09-02902 ..... $160.75

PTI MOLY SPRAY LUBRICANT

Moly spray is unequaled as a lubricant for machine tools, plastic molding machines, paper and textile making equipment, oven mechanisms, and sheet metal and tube bending operations. Provides lubrication on surfaces for which a "wet" or "liquid" lubricant is undesirable.

P/N 09-02903 ..... $16.50

PTI NO PEEL™ EPOXY AND POLYURETHANE TOPCOAT ADDITIVE

Formulated to help epoxy and polyurethane topcoats flow to their maximum ability. Keeps the coating "open" to allow bubbles to escape and the surface to flow in high temperature conditions. Refer to the manufactures technical data before using this product.

4 oz. ..... P/N 09-02672 ..... $10.50
8 oz. ..... P/N 09-02673 ..... $16.90
16 oz. ..... P/N 09-02674 ..... $23.99

PTI NO POP™ RETARDER

Used as an additive to slow down the dry time of fast drying paints and primers. During hot and dry temperatures, coatings have a tendency to "solvent pop" and/or "dry spray". This retarder keeps the material wet allowing it to flow, dry, and cure as it should.

4 oz. ..... P/N 09-02675 ..... $10.50
8 oz. ..... P/N 09-02676 ..... $16.50
16 oz. ..... P/N 09-02677 ..... $23.99

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PTI SPECIALTY PAINTS

SPECIALITY PAINTS
POLYURETHANE - ENAMELS - WATERBORNE

POLYURETHANE/CATALYST CURE: Low VOC - Two component topcoat system with built-in U.V. protection. The system has both corrosion and chemical resistance properties with a gloss range > 95%. Comes in all Federal 595C colors. Custom colors available upon request.

ENAMEL: PTI's Enamel is formulated to meet the performance specifications of Federal specification TT-E-489G. This product is a high quality alkyd enamel which performs best when used with PTI's zinc chromate or chromate free primer. It may be applied over wood or metal and is suitable for both interior and exterior applications.

WATERBORNE POLYURETHANE: ZERO V.O.C. general purpose, exterior protective coating for metal surfaces. This product also works great for interior applications. The Waterborne Polyurethane should be applied over top of the PTI Waterborne Epoxy Primer. Available in all Federal 595C colors; custom colors available upon request.

HOW TO ORDER:

Add the following dash numbers after the "Base Part No." listed in the chart for the size and type desired.

For PTI Polyurethane::	Qt. Size add -13 Gal. Size add -14
For PTI Enamel::	Qt. Size add -23 Gal. Size add -24
For PTI Waterborne	Qt. Size add -33 Gal. Size add -34

The PTI Polyurethane, Enamel, and Waterborne paints are also available in semi-gloss and flat. Please contact us for current price and availability.

PTI Touch-Up Paint Kits are available in polyurethane, enamel, waterborne, and interior epoxy pants. For more information, see www.aircraftspruce.com.

Gloss Paints	Base Part No.	Poly.Qt. Price	Poly.Gal. Price	Enamel Qt. Price	Enamel Gal. Price	Waterborne Qt. Price	Waterborne Gal. Price
Boston Maroon	09-10049	$116.75	$193.95	$74.75	$113.75	$141.75	$200.75
Elisnore Brown	09-10080	$116.80	$194.95	$74.75	$113.75	$119.99	$172.75
Bermuda Tan	09-10324	$116.80	$194.95	$82.75	$121.85	$119.99	$172.75
Madrid Red	09-11120	$117.95	$194.75	$64.75	$104.75	$139.75	$200.75
Tennesse Red	09-11136	$117.95	$194.95	$74.75	$127.75	$142.80	$207.95
Christen Eagle Red	09-11140	$128.75	$213.95	$71.85	$117.90	$139.75	$200.75
Intnl Orange	09-12197	$116.75	$193.75	$82.90	$137.75	$146.75	$214.95
Yellow/Orange	09-12243	$116.75	$171.85	$74.75	$127.75	$139.75	$200.75
Pumpkin Orange	09-12246	$116.75	$194.75	$64.75	$108.75	$146.75	$214.95
Champion Yellow	09-13275	$116.95	$194.75	$74.75	$127.75	$159.75	$228.95
AC Eagle Yellow	09-13415	$139.75	$232.95	$74.75	$127.75	$159.75	$228.95
AG Cat Yellow	09-13432	$139.75	$207.95	$71.75	$117.90	$159.75	$228.95
J3 OEM Yellow	09-13507	$139.75	$232.95	$64.75	$108.75	$159.75	$228.95
Tuscon Cream	09-13523	$127.75	$212.95	$74.75	$128.75	$119.99	$172.75
Cub Yellow	09-13538	$138.95	$212.95	$71.75	$117.90	$159.75	$228.95
Diana Cream	09-13578	$117.75	$193.75	$71.75	$118.75	$119.99	$172.75
lemon Yellow	09-13591	$140.75	$232.95	$75.75	$127.75	$159.75	$228.95
Lockhaven Yellow	09-13637	$116.75	$193.75	$71.75	$117.90	$159.75	$228.95
Federal Yellow	09-13655	$167.75	$280.95	$75.75	$127.75	$159.75	$228.95
Sun Valley Ivory	09-13690	$116.75	$193.75	$74.75	$128.75	$138.75	$201.95
Forest Green	09-14036	$116.75	$193.75	$71.75	$105.75	$138.75	$201.95
Portland Green	09-14062	$127.75	$212.95	$74.75	$126.75	$138.75	$201.95
Federal Green	09-14064	$116.75	$193.75	$64.75	$95.85	$138.75	$201.95
Oak Green	09-14079	$116.75	$193.75	$64.75	$95.85	$138.75	$201.95
Olive Drab Green	09-14084	$117.75	$171.95	$74.75	$126.75	$138.75	$201.95
Lawn Green	09-14090	$116.75	$193.75	$64.75	$95.85	$138.75	$201.95
Everglades Green	09-14110	$116.75	$193.75	$71.75	$104.75	$138.75	$201.95
Cuby Sport Trainer Green	09-14193	$127.75	$214.95	$71.75	$104.75	$138.75	$199.75
Insignia Blue	09-15044	$127.75	$212.95	$71.75	$117.80	$138.75	$201.95
Twilight Blue	09-15052	$135.75	$223.95	$64.75	$96.75	$138.75	$201.95
Christen Eagle Blue	09-15056	$139.90	$232.95	$82.75	$122.90	$138.75	$226.95
AN True Blue	09-15102	$116.75	$193.75	$71.75	$117.90	$134.99	$226.95
Bahama Blue	09-15180	$116.75	$194.75	$71.85	$117.80	$138.75	$225.95
Piper Trainer Blue	09-15182	$116.75	$194.75	$74.75	$127.75	$134.99	$226.95
Lakeland Blue	09-15526	$116.75	$193.75	$82.75	$137.75	$134.99	$226.95
AG CAT Gray	09-16099	$115.75	$194.95	$82.75	$122.75	$134.99	$226.95
Federal Gray	09-16251	$116.75	$194.95	$82.90	$137.75	$117.75	$193.90
Rancho Silver	09-16314	$116.75	$195.95	$82.75	$135.95	$138.75	$226.95
Polar Gray	09-16357	$116.75	$194.75	$71.75	$118.75	$116.75	$194.75
Glacier White	09-16492	$93.75	$154.90	$66.75	$107.75	$116.75	$193.75
Daytona White	09-16555	$93.75	$154.90	$74.75	$128.75	$116.75	$194.75
Insignia White	09-17925	$93.75	$154.75	---	---	$119.99	$172.75
Reno Gold	09-17043	$128.75	$189.75	---	---	$134.99	$226.95
Christen Eagle Purple	09-17100	$169.75	$280.95	---	---	---	---
Nevada Silver	09-17178	$128.75	$214.95	---	---	$134.99	$226.95
Juneau White	09-17886	$93.75	$154.90	---	---	$116.75	$194.75

PTI POLYKICK™

Other products used with: Use only with PTI Polyurethanes. Typical Uses: PTI PolyKick is formulated to accelerate the cure time for PTI's polyurethane formulations.

4 oz. ..... P/N 09-02670 ..... $10.50
8 oz. ..... P/N 09-02671 ..... $15.95

PTI POLYURETHANE PAINT KIT

This kit will provide all the materials needed to paint any RV or similar size aircraft.

The kit consists of: • Green Acid Etch Primer & Reducer • Yellow Epoxy Prime, Catalyst, & Reducer • Polyurethane White topcoat, with catalyst & Reducer -Clear coat sold separately

Additional colors are available upon request, for an additional cost.

Paint KIT ..... P/N 09-02074 ..... $1,137.00
Clear Coat Kit ..... P/N 09-02073 ..... $270.95

PTI COLOR CHART

These samples are an approximate computer representation of the actual color and are to be used for reference only. P/N 09-01969 ..... FREE

ALL POLYURETHANE PAINTS REQUIRE CATALYST TO CURE!

Note: Polyurethane requires catalyst and the system will add the required amount automatically. If you currently have an adequate supply please otify your sales rep.

Always refer to Technical Data before use for mixing instructions and curing times.

Description	Size	PN	Price
Polyurethane Catalyst	Gal	09-01256	$120.95
Polyurethane Catalyst	Qt	09-01964	$56.50
Polyurethane Thinner	Qt	09-01657	$16.70
Polyurethane Thinner	Gallon	09-01658	$35.60

ESTIMATED QUANTITIES PTI RECOMMENDED

STRIPPER Small Plane: 3-5 gallons Medium Plane: 9-10 gallons Large Plane: 18-25 gallons	WASH PRIMER Small Plane: 2 gallons Meduim Plane: 5 gallons Large Plane: 9-10 gallons Extra Large Plane: 35 gallons
PRIMER Small Plane: 3-4 gallons Medium Plane: 10-11 gallons Large Plane: 18-20 gallons Extra Large Plane: 66-75 Gal.	TOPCOAT Small Plane: 4-5 gallons Medium Plane: 12 gallons Large Plane: 22-24 gallons Extra Large Plane: 75-80 Gal.
PLANE SIZE Small Plane: Cessna, Beechcraft Medium Plane: Lear Jet, Gulfstream Large Plane: Commerical Embraser Commuter Extra Large Plane: Airbus, 747	

PAINT & REDUCERS CROSS REFERENCE CHART

Coating System	Solvent/Reducer
Zinc Chromate & Zinc Oxide Primers	1022X66 Gallon P/N 09-00954 Quart P/N 09-00956
Epoxy Primer	PT-1003 TY 2 Gallon P/N 09-00936 Quart P/N 09-00937
Acid Etch Primer	PT-1045 Gallon P/N 09-00950 Quart P/N 09-00951
Enamel	Toluene Gallon P/N 09-00975 Quart P/N 09-00976
Polyurethanes	PT-1003 TY1 Gallon P/N 09-01658 Quart P/N 09-01657

VISIT OUR WEBSITE FOR A COMPLETE COLOR CHART OF PTI PAINT AT : www.aircraftspruce.com

ALL mixed paints are special order and are non-returnable.

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FAA/PMA
In January 2005, Certified Coatings Products received FAA-PMA (Federal Aviation Administration Parts Manufacturing Approval) for use on Ceconite fabric. The products have always been approved for use on any other fabric. (PMA#PQ2435NM)

FLAMMABLE

Certified CPC Coatings

DOPES, THINNERS, AND SOLVENTS

Product Description	Part No.	Quart Price	Part No.	Gallon Price	Part No.	5 Gal. Price	Part No.	54 Gal. Drum Price
Nitrate Dope, Clear	09-09400	$29.50	09-09500	$49.90	09-09600	$209.95	09-09700	$1,334.00
Nitrate Dope, Blue Tint	09-09000	$28.50	09-09100	$58.75	09-09200	$188.95	09-09300	$1,491.00
Nitrate Dope, Clear, Non-Tautening	09-09900	$28.75	09-10000	$47.50	09-10100	$211.95	09-10200	$1,396.00
Nitrate Dope, Blue Tint, Non-Tautening	09-03999	$32.50	09-04001	$53.85	09-04002	$238.95	09-04003	$1,772.00
Butyrate Dope, Clear	09-10400	$33.55	09-10500	$56.75	09-10600	$232.95	09-10700	$1,718.00
Butyrate Dope, Clear, Non-Tautening	09-10900	$39.75	09-11000	$66.85	09-11100	$265.95	09-11200	$1,872.00
Nitrate Thinner	09-11400	$22.75	09-11500	$36.50	09-11600	$159.75	09-11700	$1,070.00
Butyrate Thinner	09-11900	$24.50	09-12000	$39.50	09-12100	$167.75	09-12200	$1,256.00
Retarder, Nitrate*	09-12400	$28.50	09-12500	$22.85	09-04275	$151.90	---	---
Retarder, Butyrate*	09-12800	$31.85	09-12900	$52.95	09-13000	$229.95	---	---
Toluene	---	---	---	---	09-14300	$99.85	---	---

*Add 5% to 10%, as needed, of this blend of fast-cutting, high-boiling solvents to prevent dope blushing under conditions of high humidity. Also improves flow by slowing drying time.
Certified Coatings offers only a limited number of colors in butyrate dope which have been selected as standards. The colors will match as closely as possible the corresponding color on the Randolph selection card reproduced in this catalog.

CERTIFIED COATINGS SPECIAL SOLVENTS

Product	P/N 09-	Quart	P/N 09-	1 Gal.	P/N 09-	5 Gal.
Toluene Paint Remover	05702	$17.90	05711	$30.75	---	---

CERTIFIED COATINGS COLORED BUTYRATE DOPE

Product Description	ModelNo.	Quart	Gallon	5 Gallon
Chrome Yellow	8520	$55.95	$79.75	$290.95
Daytona White	8125	$49.75	$93.85	$398.00
Juneau White	8415	$48.75	$79.90	$354.00
Miami Blue	8611	$56.75	$91.75	$352.95
Insignia Blue	8124	$82.50	$141.99	$309.95
Cub Yellow	8522	$58.50	$89.50	$380.95
Tennessee Red	8321	$70.95	$133.85	$277.95
Madrid Red	M189R	$76.95	$124.75	$531.00
Insignia Red	8350	$71.75	$116.75	$569.00
Plain White	8120	$51.85	$79.75	$265.95

FLAMMABLE

To Order: Use Product # plus "QT" for Qt., "1G" for Gal. and "5G" for 5 Gal.

CERTIFIED COATINGS COLOR CHART

Ask for Certified Coatings Products Co. color chart..... P/N 09-02118 ..... FREE

CERTIFIED COATINGS A134 ALUMINUM PASTE

ALUMINUM PASTE - Mix 4 ounces of Aluminum Paste to 1 gallon of Certified Coatings N/T Butyrate Dope.
1 Lb. ..... P/N 09-02417 ..... $107.85
Quart ..... P/N 09-03996 ..... $176.95

CERTI-FILL SILVER

This non-tautening butyrate UV barrier can be sprayed or brushed over nitrate or butyrate coatings for optimum ultra-violet ray protection.
Quart ..... P/N 09-12300 ..... $43.90
Gallon ..... P/N 09-12310 ..... $69.75
5 Gallon ..... P/N 09-12320 ..... $313.00

SURE SEAM FABRIC CEMENT

Sure Seam is a high quality, high tack fabric cement which has excellent bonding properties.
Quart ..... P/N 09-13330 ..... $43.50
Gallon ..... P/N 09-13340 ..... $72.75

AIRCRAFT SPRUCE ACETONE

Use to remove lacquer finishes, for cleanup after painting, and to soften lacquers or acrylics that have set up in spray guns or hoses. It has little effect on polyurethane which has cured in the lines.Use only virgin acetone as recovered acetone can damage virtually anything on which it is used.
Pint ..... P/N 01-01077 ..... $6.50
Quart ..... P/N 01-01078 ..... $9.75
Gallon ..... P/N 01-01079 ..... $17.50

SURE STRIP PAINT REMOVER

Removes urethanes, epoxies, lacquers, primers, enamels, vinyls, varnishes, acrylics, shellac and polyesters. Washing off with water leaves a clean film-free surface that is ready for refinishing. Product of Certified Coatings Products Co.
1 Qt. ..... P/N 09-05701 ..... $18.50
1 Gal. ..... P/N 09-05710 ..... $29.75
5 Gal. ..... P/N 09-05715 ..... $132.75
55 Gal. ..... P/N 09-03995 ..... $1,195.00

CERTIFIED COATINGS AIRCRAFT, MARINE, AND AUTOMOTIVE PAINT REMOVER

1 Qt. ..... P/N 09-05702 ..... $17.90
1 Gal. ..... P/N 09-05711 ..... $30.75
5 Gal. ..... P/N 09-03987 ..... $130.80
55 Gal. ..... P/N 09-03988 ..... $1,195.00

FABRIC REJUVENATORS

A blend of deep cutting solvents which penetrates the dope finish and restores some of the original flexibility. Use on old fabric in fair condition. Do not use on weak or rotted fabric. Specify type of finish. Rejuvenator Type Certified Coatings Nitrate Rejuvenator Butyrate Rejuvenator Stits Poly-Fiber RJ-1200

FLAMMABLE

1 Gallon		5 Gallon		1 Quart	
Part No.	Price	Part No.	Price	Part No.	Price
09-22500	$36.50	09-22600	$143.75	09-01263	$23.99
09-22700	$39.85	09-22800	$164.75	09-01264	$25.50
09-05300	$80.50				

ALL mixed paints are special order and are non-returnable.

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RANDOLPH AIRCRAFT COATINGS

Randolph coatings are the FAA-approved coatings for the Ceconite STC covering process.

210 NITRATE DOPE, TAUTENING, CLEAR, HI-SOLIDS

Used only on Grade A cotton or Irish Linen. A premium high solids nitrate dope that tightens natural fabric as it dries. Not for use on Ceconite or heat-shrunk synthetic fabrics. Thin 1:1 w/286 Nitrate Thinner.

FLAMMABLE

Quart	P/N 210-QT	$14.65
Gallon	P/N 210-1G	$44.10
5 Gallons	P/N 210-5G	$212.35

W-7868 NITRATE DOPE, TINTED, NON-TAUTENING (BLUE)

Initial coating for Ceconite or heat shrunk polyester fabric. Additional plasticizers slow shrinking after application. Thin 1:1 with 286 Nitrate Thinner.

FLAMMABLE

Quart	P/N W-7868-QT	$16.05
Gallon	P/N W-7868-1G	$47.85
5 Gallons	P/N W-7868-5G	$231.50

E-4964 NITRATE DOPE, CLEAR,NON-TAUTENING

Initial coating for Ceconite or heat shrunk polyester fabric. For use on open cockpit aircraft where tinted dope is not desired. Thin 1:1 w/286 Nitrate Thinner.

FLAMMABLE

Quart	P/N E-4964-QT	$15.95
Gallon	P/N E-4964-1G	$47.60
5 Gallons	P/N E-4964-5G	$230.60

G-6302 RAND-O-PROOF NITRATE DOPE (GREEN)

Special formulation of nitrate dope and additives for the initial coat on Ceconite fabric and for applying tapes. This is the recommended first coat in the Ceconite/ Randolph system. Thin 1:1 with 286 Nitrate Thinner.

FLAMMABLE

Quart	P/N G-6302-QT	$16.20
Gallon	P/N G-6302-1G	$48.20
5 Gallons	P/N 09-01017	$233.40

286 NITRATE THINNER

Used 1:1 to thin nitrate dopes & Rand-OProof.

FLAMMABLE

Quart	P/N 286-QT	$11.00
Gallon	P/N 286-1G	$42.00
5 Gallons	P/N 286-5G	$210.00

9701 BUTYRATE DOPE, TAUTENING, CLEAR

Used only on Grade A Cotton or Irish Linen to tighten the fabric as it dries. Not for use on Ceconite or heat-shrunk synthetic fabrics. Thin 1:1 with 9703 Butyrate Thinner.

FLAMMABLE

Quart	P/N 9701-QT	$15.60
Gallon	P/N 9701-1G	$46.60
5 Gallons	P/N 9701-5G	$224.40

W-8350 BUTYRATE DOPE TINTED, NON-TAUTENING (TAN)

This non-taughtening butyrate dope features an increased level of plasticizer and will not tauten excessively. Takes longer to dry than standard butyrates. Tinted. Used to apply finishing tapes. Additional plasticizers slow shrinking. TINTED LIGHT TAN BUT DRIES CLEAR. Recommended initial build butyrate coating to follow Rand-O-Proof in the Ceconite/Randolph system. Thin 1:1 with 9703 Butyrate Thinner.

FLAMMABLE

Gallon	P/N 09-00788	$50.15
5 Gallons	P/N 09-00789	$242.50

55 Gallon Drums - For 55 gallon drum of Randolph product, use basic P/N D55 - Example: 210-D55

J3000 BUTYSOLV REJUVENATOR

Used to soften older dope coatings which exhibit cracking or ring-worming. Restores plasticizers in aged finishes to add flexibility. Only works on aircraft painted with butyrate dope; will not work on polyurethane topcoat finishes.

FLAMMABLE

Quart	P/N 09-14505	$27.20
Gallon	P/N 09-14510	$81.65
5 Gallons	P/N 09-14515	$400.15

G-6303 RAND-O-FILL BUTYRATE (SILVER)

Rand-O-FillG-6303 is a non-tautening butyrate material designed as the aluminum spray coat over Rand-OProof G-6302, over Nitrate Clear Dope or Butyrate clear Dope. Allow to dry. Wet sand to desired smoothness. Wash and allow surface to completely dry before applying following coat. Thin as needed with Butyrate Thinner.

FLAMMABLE

Quart	P/N G-6303-QT	$18.45
Gallon	P/N 09-01018	$55.55
5 Gallons	P/N 09-01019	$269.25

701 ALUMINUM PASTE

A fine mesh paste which is easier to use than powder. Mix 4 oz. by weight of paste to one gallon of clear butyrate dope before thinning.

FLAMMABLE

1 Lb.	P/N 09-14500	$21.10

9703 BUTYRATE THINNER

Used 1:1 to thin butyrate dopes & pigmented butyrate colors.

FLAMMABLE

Quart	P/N 9703-QT	$11.30
Gallon	P/N 9703-1G	$42.75
5 Gallons	P/N 9703-5G	$210.00

Y-9910 UNIVERSAL RETARDER

Prevents blush in nitrate and butyrate products. Also used to slow nitrate and butyrate drying in high temperatures.

FLAMMABLE

Quart	P/N Y-9910-QT	$14.80
Gallon	P/N 09-01048	$44.35
5 Gallons	P/N 09-01049	$213.65

A-1690 BUTYRATE DOPE, NON-TAUTENING (CLEAR)

For use as a build coat after E-4964 Non-Tautening Nitrate (Clear) on open cockpit aircraft where tinted dope is not desired. Thin 1:1 with 9703 Butyrate Thinner.

FLAMMABLE

Quart	P/N 09-00817	$16.70
Gallon	P/N 09-00818	$49.90
5 Gallons	P/N 09-00819	$241.45

MATERIAL REQUIREMENTS FOR AVERAGE SIZE AIRPLANE

USING RANDOLPH FINISHES AND CECONITE FABRIC

- 45 yds. 70" Ceconite 102
- 5 gals. Rand-O-Proof
- 10 gals. NT Butyrate
- 3 gal. Universal Finishing Retarder
- 13 rls. Pinked Ceconite Tape
- 2 rls. 1/2" Reinforcing Tape
- 30 Inspection Rings
- 5 gal. Nitrate Thinner
- 10 gal. Rand-O-Fill
- 30 gal. Butyrate Thinner
- 10 gal. (White) Butyrate Dope
- 1 rl. Ceconite Rib Lacing Cord ....
- 100 Plastic Drain Grommets
- 1 gal. Rand-O-Bond

TOTAL (Estimate)..... $ 3,500

RANDOLPH FLOAT LACQUER

This specialty product is used as a spray on the bottom of aluminum floats on amphibious aircraft to protect them from marine growth. Reduce with Randolph 286 Nitrate Thinner.

FLAMMABLE

Qt	P/N 09-00830	$17.50
Gal	P/N 09-00831	$52.75
5 Gal	P/N 09-00832	$258.05

RANDOLPH ACID-PROOF BATTERY BOX BLACK PAINT #345

Battery Box Black Paint is an asphaltic coating used to provide protection from battery acid in battery boxes and compartments. It is generally applied with a brush or roller to any metal area that may be exposed to leaking battery acid. Shelf life: Guaranteed 2 years from date on manufacture in sealed container in protected storage. Coverage: 225 square feet per gallon with one coat. Mixing: Stir well before use.Thinning: Use out of the can. If thinning is necessary, thin five parts paint to one part 286 Nitrate Thinner. Application: Apply with a brush. Three coats will provide the best possible protection to epoxy primed metal surfaces.Qt. P/N 344-QT $16.85

FLAMMABLE

ALL mixed paints are special order and are non-returnable.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

RANDOLPH COLOR PRODUCTS

RANDOLPHCOLOREDNON-TAUTENINGBUTYRATE DOPE - The final color coat applied over fabric in the Ceconite/Randolph system. Available in 50 standard colors. Thin one to one with 9703 Butyrate Thinner. One thinned gallon covers approximately 200 sq ft with one coat.

RANTHANE POLYURETHANE FINISH

Ranthane is a low viscosity, very high solids polyurethane material resulting in low film weight providing a lasting high gloss. Will withstand most chemicals, engine oils, and hydraulic fluids. Has superb adhesion and abrasion resistance as well as high temperature resistance. For fabric and primed metal.

Whites: Qt.....From $43.95 Gal..... From $134.05
All Other Colors: Qt.....From $60.70 Gal..... From $182.25

RANTHANE HIGH SOLIDS CATALYST -
Pint.....P/N 09-00328 ..... $33.50
Use w/ High Solid Polyurethane
Qt.....P/N 09-00400 ..... $63.15

RANTHANE ACCELERATOR - Qt. .....P/N D-7201-QT $44.85

RANTHANE REDUCER - Qt.....P/N G-4200-QT $14.00
Gal. .....P/N G-4200-1G $49.00

The FAA has approved the use of Ranthane over Poly-Fiber.
To order Ranthane colors, please specify Randolph color from chart on right and specify quart or gallon.

NOTE: Randolph paints are now manufactured by Consolidated Coatings and will not exact match old Randolph colors. If you are ordering to match old Randolph colors, please provide a paint sample that can be matched by the factory.

MARK II FOR METAL
(NOT FOR USE ON FABRIC)

A tough, long-lasting, two-part topcoat paint catalyzed with a non-iso-cyanate catalyst. Supplied air respirator not required when spraying. Available in same 50 colors as Colored Butyrate Dope and Ranthane for use over primed metal or composite parts. Mix 1:1 with Mark II Mixing Liquid.

MARK II MIXING LIQUID - Combination of catalyst and thinner to be used with Mark II for Metal paint.
Qt..... P/N 09-02193 ..... $45.15
Gal ..... P/N 09-02194 ..... $149.50

MARK II THINNER - Used as needed to thin Mark II for Metal after combining with Mark II Mixing Liquid to increase flow out.
Pt..... P/N 09-02195 ..... $9.00
Qt..... P/N 09-02196 ..... $14.00
Gal ..... P/N 09-02197 ..... $53.00

FAST-DRY ENGINE ENAMELS

Formulated to be heat resistance and maintain good gloss and color retention. For use in the painting of engine crank cases and cylinders, after major overhaul or for general maintenance. Can also be used on engine mounts and supports. Service temperature is 300-350 degrees F. Reduction: Thin to correct spray viscosity with #257 Enamel Thinner(approximately 20% reduction). Application: Spray two coats. Allow to dry to the touch between coats.

Color	Quart		Gallon	
	Part No.	Price	Part No.	Price
303 Black	303-QT	$22.00	303-1G	$57.35
D-5973 Continental Gold	D-5973-EQ	$22.00	D-5973-EG	$65.95
G-5436 Lycoming Gray	G-5436-EQ	$22.00	G-5436-EG	$65.95

RANDOLPH ENAMEL THINNER

Fast drying thinner for use with Randolph Aircraft Enamels and Fast Dry engine Enamels.
Qt. ..... P/N 257-QT..... $12.00
Gal. ..... P/N 257-1G..... $46.00

RANDOLPH ENAMEL HARD GLOSS 9313

Special drier/ additive that modifies enamel into a stronger film that dries faster and creates an even, glossier surface. Adding 2 fluid ounces per thinned quart improves the gloss and removes the tendency for enamel to remain slightly tacky for long periods. P/N 09-01164..... $34.50

PAINT VISCOSITY CUPS

A precision tool to accurately measure paint viscosity when spraying automotive and aircraft finishes. Consists of a nylon cup with a precisely sized small hole in the bottom. As paint flows through the hole, time the rate of flow. Adjust viscosity by adding thinner as required to produce recommended flow for product being used. P/N 01-25400..... $13.50

RANDOLPH COLOR SELECTIONS AND PRICES

COLORS	BUTYRATE For Fabric Only		Mark II For Metal Only	
	Qts.	Gals.	Qts.	Gals.
Reds				
B-3534 Madrid Red	$22.00	$84.70	$66.75	$200.50
B-9163 Colorado Red	$24.20	$84.70	$66.75	$200.50
M-9522 Tennessee Red	$24.20	$93.15	$66.75	$200.50
M-9530 Vermillion Red	$24.20	$115.95	$66.75	$200.50
W-3665 Pontiac Red	$24.20	$84.70	$66.75	$200.50
J-9555 Cadillac Red	$24.20	$84.70	$66.75	$200.50
H-9150 Santa Fe Red	$24.20	$84.70	$66.75	$200.50
X-5680 Boston Maroon*	$31.25	$84.70	$66.75	$404.95
X-5749 Stinson Maroon	$24.20	$84.70	$66.75	$200.50
Standard Colors				
M-9526 Cruiser Orange	$24.20	$84.70	$66.75	$200.50
C-2065 Ocala Orange	$22.00	$84.70	$66.75	$200.50
E-6427 Aeronca 7AC Yellow	$25.25	$77.00	$113.95	$354.95
M-9512 Lemon Yellow	$24.20	$84.70	$66.75	$200.50
M-9501 AN Orange Yellow	$22.00	$77.00	$66.75	$200.50
F-6285 Cub J-3 Yellow	$22.00	$84.70	$66.75	$200.50
M-9521 Lock Haven Yellow	$22.00	$77.00	$66.75	$200.50
Y-5783 Dallas Yellow*	$22.00	$84.70	$66.75	$200.50
D-9270 Ag Cat Yellow	$24.20	$84.70	$66.75	$200.50
N-3353 Federal Yellow	$22.00	$84.70	$66.75	$200.50
F-2406 Federal Green	$22.00	$77.00	$66.75	$200.50
F-5830 Montego Green*	$22.00	$84.70	$66.75	$200.50
Y-6350 Forest Green*	$27.50	$84.70	$66.75	$200.50
W-3554 Lakeland Blue	$22.00	$77.00	$66.75	$200.50
W-9506 AN True Blue	$24.20	$104.95	$66.75	$200.50
H-9170 Bahama Blue	$22.00	$84.70	$66.75	$200.50
X-5700 Miami Blue	$22.00	$77.00	$66.75	$200.50
M-9502 Insignia Blue	$22.00	$84.70	$66.75	$200.50
Z-7245 Sun Valley Ivory	$26.25	$84.70	$66.75	$200.50
M-9518 Diana Cream	$24.20	$84.70	$66.75	$200.50
X-5260 Tucson Cream*	$24.25	$84.70	$66.75	$200.50
Q-1050 New Insignia White	$22.25	$80.75	$116.95	$353.95
W-9170 Tropic White	$17.60	$63.80	$48.35	$147.45
K-7641 Vestal White	$17.60	$70.20	$48.35	$147.45
B-4243 Juneau White	$23.75	$86.50	$48.35	$147.45
J-9545 Daytona White	$17.60	$63.80	$48.35	$147.45
Q-1916 RandolphWhite	$19.35	$63.80	--	$147.45
F-7790 AG Cat Gray	$22.00	$77.00	$66.75	$200.50
R-4870 Neutral Gray	$22.00	$84.70	$113.95	$200.50
R-8174 Platinum Gray	$22.00	$77.00	$66.75	$200.50
Y-6100 Polar Gray	$22.00	$77.00	$66.75	$200.50
H-6117 Black	$22.00	$77.00	$66.75	$200.50
R-8175 Sandalwood*	$22.00	$77.00	$66.75	$200.50
Y-9775 Hickory Brown	$23.50	$77.00	$66.75	$200.50
R-4869 Olive Drab* (Glossy)	$22.00	$77.00	$66.75	$200.50
E-6428 Aeronca 7AC Orange	$22.00	$111.95	$66.75	$200.50
P-8600 Cessna Tiger Orange	$22.00	$84.70	$66.75	$200.50
Metallic Colors				
W-8427 Tampa Green*	$22.00	$84.70	$66.75	$200.50
W-8430 Newport Blue*	$22.00	$84.70	$66.75	$200.50
M-9514 Silver	$22.00	$77.00	$66.75	$200.50
B-9916 Reno Gold	$38.50	$84.70	$66.75	$200.50

How to Order:Use these dash #s to complete Randolph color part #s:
Butyrate: Qts -BQ, Gallons -BG; Example: P-8599-BG
Mark II: Qts -MQ, Gallons -MG; Example M-8599-MG
ALL mixed paints are special order and are non-returnable.

Randolph Color Card ..... P/N 09-00401..... FREE

CS

REALCLEAN REAL SHINE DE-ICE BOOT SEALANT

Real Shine Boot Sealant offers an unmatched high-gloss shine while conditioning de-ice boots to prevent drying and cracking. Real Shine De-Ice Boot Sealant also protects boots from harmful UV Rays which over time will damage the boots. Keep your de-ice boots looking their best with the Real Shine System. P/N 09-03771 .....$42.95

REALCLEAN REAL SHINE DE-ICE BOOT PREP

Real Shine Aircraft Deice Boot Prep is formulated for easy stripping of old sealant and dressings from aircraft boots. Real Shine is easy to use and will completely strip and clean the boot surface to reveal a clean bare surface ready for the Real Shine Sealant application.

P/N 09-03770 .....$24.95

REALCLEAN TURBINE SOOT MASTER

Turbine Soot Master is a carbon soot cleaner and degreaser designed to effectively address carbon exhaust build-up and staining that plagues most turbo-prop aircraft. Our streak-free formula safely dissolves carbon, grease and oil revealing a clean surface with very little effort. This product is rinse-free and does not require any water. Just spray on and wipe the surface clean with a microfiber or terry cloth. This Product may be diluted 1 part Turbine Soot Master to 1 part Water for lighter exhaust soot, soils or grease cleaning.

32 oz..... P/N 09-03768 .....$29.85
1 Gallon..... P/N 09-03769 .....$79.50

REALCLEAN STREAMLINE SPEED WAX

Streamline Speed Wax is a high gloss aircraft polish and waterless dry wash cleaner that offers unmatched performance by any other aviation wax. Streamline is specially designed to be thin enough for spray on application yet still maintain and exceed the cleaning and high gloss characteristics of the heavier, hard to use waxes available. Streamline is silicone-free to prevent P Static build-up and offers excellent UV protection (UV is the leading cause of oxidation in aircraft paint) Streamline is safe for all aircraft paint and interior polished wood trim. If your looking for the ultimate aircraft appearance and ease of use, try Streamline Speed Wax.

32 oz. ..... P/N 09-03772 .....$24.95
1 Gallon ..... P/N 09-03773 .....$69.95

REALCLEAN POST FLIGHT INTERIOR / EXTERIOR CLEANER

Post Flight is a high performance Interior and Exterior liquid cleaner and polish that is safe for all surfaces. It is designed for light duty ultra-fast post flight and quick turn cleaning. Just spray Post-Flight on any surface and wipe away, leaving a clean beautiful shine. Post-Flight contains micro-waxes that clean and shine paint, aluminum, Plexiglas, polished wood and plastic to a beautiful high gloss finish. Use to quickly remove bugs, soot, dirt, dust, and fingerprints between flights. Post Flight Aircraft Detailing Spray is the quickest way to keep your aircraft interior and exterior clean and looking great between flights. Post Flight leaves surfaces fingerprint resistant. Not recommended for use on flight instruments or displays.

32 oz..... P/N 09-03774 .....$18.95
1 Gallon..... P/N 09-03775 .....$53.95

REALCLEAN ADVANTAGE CARPET UPHOLSTERY CLEANER

Advantage Carpet and Upholstery Cleaner and Stain remover.

32 oz..... P/N 09-03778 .....$14.95
1 Gallon..... P/N 09-03779 .....$39.95

REALCLEAN PREMIUM MICROFIBER DETAILING CLOTHS

Quality microfiber cloths are designed to make cleaning easier and faster, due to the millions of microscopic fibers that make up the fabric. Real microfiber fabric is 100 times finer than human hair and have almost 100 thousand fibers per square inch. Use microfiber cloths for wax removal, cleaning windows, dry washing, polishing wood, cleaning leather and upholstery. Our microfiber cloths are safe for all surfaces including aircraft windows as they are ultra soft, scratch and lint free. Just wash and reuse. P/N 09-03780 ..... $8.95

SUNMIGHT WATERPROOF SANDPAPER

Sunmight Waterproof is made with quality water resistant paper backing for flexibility and outstanding finish. Special resin technology reduces possible curling problem during wet sanding operations. Features:Wet or dry sanding for all surface, Finest finishing even under wet sanding, Long durability without tearing or curling, Superior cutting for hand sanding. Specifications: Grain: Grit 220~800 Aluminum Oxide; Grit 1000~2000 Silicon Oxide, Backing: Latex Paper, Bond: Resin over Resin, Coating: Closed Coat, Grit Range: 220-2000. Sold Each.

Grit	Part No.	Price ea.
220	09-03108-1	$0.55
280	09-03110-1	$0.62
320	09-03111-1	$0.62
400	09-03113-1	$0.62

Grit	Part No.	Price ea.
600	09-03114-1	$0.62
1000	09-03115-1	$0.71
1500	09-03117-1	$0.65
2000	09-03118-1	$0.71

SUNMIGHT 5" VELCRO DISC SANDPAPER

Sunmight Film is a premium product with strong and even surface film backing that allows better surface finish and longer life. It is also great for corner and edge sanding without problems with tearing. Specifications: Grain: Premium Aluminum Oxide, Backing: Polyester Film, Bond: Phenolic Resin, Coating: Open Coat, Grit Range: 80-320. Sold Each.

Grit	Part No.	Price ea.
80	09-03797-1	$0.50
120	09-03798-1	$0.40

Grit	Part No.	Price ea.
220	09-03799-1	$0.40
320	09-03801-1	$0.40

SUNMIGHT 5" P.S.A. GOLD DISCS

Sunmight God is a premium paper product made with high quality grain, latex paper and strong resin. This provides better performance and longer life. Features: Aluminum Oxide resin paper, Open coat, Tear resistance, Good Sharpness and longer lasting life, High performance without clogging, Excellent finish. Specifications: Grain: Premium Aluminum Oxide, Backing: Latex Paper, Bond: Phenolic Resin, Coating: Open Coat, Grit Range: 80-320. Sold Each

Grit	Part No.	Price ea.
80	09-03099-1	$0.25
120	09-03102-1	$0.23

Grit	Part No.	Price ea.
220	09-03105-1	$0.23
320	09-03107-1	$0.23

SUNMIGHT 5" P.S.A. FILM DISC - SANDING PAPER

Sunmight Film is a premium product with strong and even surface film backing that allows better surface finish and longer life. It is also great for corner and edge sanding without problems with tearing. Features: Open coat stearated, Excellent Cutting Performance, Longer lasting life with durability, Perfect sanding surface, Especially, excellent for contour snading without folding. Specifications: Grain: Premium Aluminum Oxide, Backing: Polyester Film, Bond: Phenolic Resin, Coating: Open Coat, Grit Range: 80-320. Sold Each.

Grit	Part No.	Price ea.
80	09-03092-1	$0.35
100	09-03093-1	$0.32
120	09-03094-1	$0.32

Grit	Part No.	Price ea.
180	09-03095-1	$0.35
220	09-03096-1	$0.32
320	09-03098-1	$0.32

STARTEX COATINGS

Description	Part No.	Price
TT-T266B Laquer Thiner Gallon	09-03026	$20.75
TT-T266B Laquer Thiner Five Gallon	09-03025	$76.00
O-A-51 Acetone Gallon	09-03028	$19.90
O-A-51 Acetone Five Gallon	09-03027	$61.75
MEK TT-M-361 Quart	09-03032	$11.64
MEK TT-M-361 Gallon	09-03031	$23.50
MEK TT-M-361 Five Gallon	09-03030	$109.75
Toluene TT-T-548 Quart	09-03035	$7.95
Toluene TT-T-548 Gallon	09-03034	$17.90
Toluene TT-T-548 Five Gallon	09-03033	$77.75
Naptha TT-T-95 Quart	09-03038	$16.50
Naptha TT-T-95 Gallon	09-03037	$20.50
Alcohol TT-I-735A Quart	09-03042	$10.95
Alcohol TT-I-735A Gallon	09-03041	$20.50
Alcohol TT-I-735A Five Gallon	09-03039	$85.80
Mineral Spirits P-D-680 Gallon	09-03045	$22.55
Mineral Spirits P-D-680 Five Gallon	09-03044	$84.75
Denatured Alcohol Gallon	09-03049	$17.60
Denatured Alcohol Five Gallon	09-03048	$86.50

SEM INTERIOR REPAIR PRODUCTS

AEROSPACE SEM SOAP

First step cleaner gravitates into the substrate and floats contaminants to the surface. AEROSPACE SEM SOAP can be used on all substrates. Use AEROSPACE SEM SOAP to clean vinyl and leather seat covers prior to restoring with AEROSPACE SURE-COAT™ or AEROSPACE COLOR COAT

P/N 09-03588 ..... $13.95

SEM AEROSPACE PLASTIC & LEATHER PREP

Leaves plastic substrates clean for coating, will not soften or distort plastic; removes contaminants such as mold, release agents, fingerprints and grease. Aerospace Plastic & Leather Prep can be used on all plastics and leather. 16 oz. Aerosol.

P/N 09-03587 ..... $14.50

SEM LOW VOC RUBBERIZED UNDERCOATING

40523 SEM Low Voc Rubberized Undercoating is a paintable, fast-drying, asphalt free coating for rust proofing, sound deadening, chip resistance and corrosion protection. Less than 40% VOC. 24 oz Aersol. P/N 09-03581 ..... $12.50

SEM TRIM BLACK

SEM Trim Black 39143 is the industry standard for restoring faded and peeling exterior trim parts. This paint coating offers maximum adhesion on stainless steel and chrome. 20 oz. Aersol.

P/N 09-03579 ..... $12.70

SEM SELF ETCHING PRIMER

Easy to spray, sands quickly and easily, offers superior adhesion. Excellent coverage and hiding, increases production. Great for spot repairs and overall refinishing.

Black ..... P/N 09-03594 ..... $19.50
Gray ..... P/N 09-03595 ..... $19.85
Green ..... P/N 09-03596 ..... $19.85

SEM COLOR COAT

SEM COLOR COAT is formulated to match, restore or change color on most vinyl surfaces, flexible and rigid plastics, carpet and velour. Fade resistant and flexible, COLOR COAT is not a dye, but a permanent paint coating. 16 oz. aerosol.

Color	Part No.	Price
15003 Phanton White	09-03556	$13.90
15013 Landau Black	09-03557	$13.85
15043 Shadow Blue	09-03558	$12.98
15103 Super White	09-03559	$13.95
15143 Sandstone	09-03561	$13.95
15163 Presidio	09-03562	$12.98
15173 Camel	09-03563	$13.95
15183 Warm Gray	09-03564	$13.95
15233 Gloss Black	09-03566	$13.95
15243 Satin Black	09-03567	$13.95
15283 Pescadero Sand	09-03568	$12.98
15303 Graphite	09-03569	$13.95
15393 Medium Gray	09-03571	$13.95
15603 Sailcloth White	09-03572	$13.99
15763 Storm Gray	09-03573	$13.50

SEM CLASSIC COAT

SEM CLASSIC COAT uses advanced technology to provide superior adhesion and flexibility when changing or restoring the color of most leather and vinyl. CLASSIC COAT is a fade resistant coating that won't chip or peel and is available in many of today's popular OEM colors.

Color	Part No.	Price
17013 Midnight Black	09-03537	$13.98
17033 Lt. Parchment	09-03538	$13.98
17043 Med Graphite	09-03539	$13.98
17053 Med Parchment	09-03541	$13.98
17083 Dk Graphite	09-03542	$13.98
17093 Black	09-03543	$13.98
17103 Dark Gray	09-03544	$13.98
17013 Lt Gray	09-03546	$13.98
17123 Lt Neutral	09-03547	$13.98
17133 Med Dk Pewter	09-03548	$13.98
17163 Med Gray	09-03549	$12.95
17173 Shale	09-03551	$13.98
17203 Very Dk Pewter	09-03552	$13.98
17223 Taupe	09-03553	$13.98
17243 Ivory	09-03554	$13.98

SEM LEATHER & VINYL REPAIR COMPOUND

Successfully repairs cuts and abrasions on leather or vinyl. This product has exceptional strength, flexibility and can also be used to fill minor imperfections. P/N 09-03578 ..... $23.95

SEM SOLVE

38373 SEM SOLVE removes adhesives, wax, road tar, grease and paint overspray. 20 oz. Aersol.

P/N 09-03577 ..... $9.95

SEM SAND FREE

38363 SEM SAND FREE softens the substrate promoting adhesion on difficult to sand areas. 16 oz. Aersol.

P/N 09-03576 ..... $15.50

SEM VINYL PREP

SEM Vinyl Prep 38343 cleans soil, wax and grease from vinyl substrates while it softens and prepares the surface for adhesion of topcoat. Great for use with SEM flexible coatings. 16 oz. Aersol.

P/N 09-03575 ..... $13.85

SEM HIGH BUILD PRIMER SURFACER

Provides superior adhesion, film build and flexibility when priming automotive metal, aluminum, urethane, plastic and other similar substrates. 20 oz. Aersol.

Gray ..... P/N 09-03787 ..... $19.65
White ..... P/N 09-03788 ..... $19.50

SEM SCUFF & CLEAN

38338 SEM SCUFF & CLEAN prepares bumpers or panels when refinishing or blending. It's abrasive action improves adhesion of repair and refinishing materials. Pint.

P/N 09-03574 ..... $18.95

SEM MANUAL APPLICATOR GUN 1.7OZ

An easy loading applicator for dispensing 1.7 oz dual mix cartridges. Material is dispensed quickly and consistently.

P/N 09-03792 ..... $59.65

SEM QUICK SET NOZZLE 1.7 OZ

Ensures proper mix ratios for 1.7 oz dual cartidges. Quantinty 6 per package. P/N 09-03793 ..... $11.50

SEM QUICK SET

Opaque, fast curing urethane adhesive designed for automotive plastic repair. With a 20 or 50 second work time, an excellent choice for quickly repairing bumper brackets, tabs, headlight buckets and grills. It may also be used for bonding backer panels, moldings emblems and most small plastic, metal and aluminum parts

20 Second ..... P/N 09-03790 ..... $21.50
50 Second ..... P/N 09-03791 ..... $21.50

SEM PLASTIC REPAIR ADHESIVE

Bumper Repair 1oz cartridge, bonds to most automotive bumpers and problem plastics. P/N 09-03789 ..... $14.90

SEM INTERIOR GRAINING PADS

Achieve the perfect repair with interior graining pads! These graining pads represent 6 of the most popular leather and vinyl grains in the automotive industry. For use with leather & vinyl repair compound. P/N 09-03794 ..... $8.95

SEM AEROSPACE SURE-COAT FLATTENER

Restores aircraft interior leathers, vinyl and plastics at a fraction of the cost of replacement.Cleans, repairs, and restores interiors to a like new condition without changing the aircraft's burn certification. P/N 09-03586 ..... $54.82

SEM AEROSPACE SURE-COAT PINT MIXING SYSTEM

A waterborne coating system offering excellent flexibility and outstanding adhesion for a variety of interior and exterior automotive, marine, aerospace and commercial applications. Allows the user to change or enhance the current color while maintaining the texture and look of leather, vinyl and plastic. It will not get brittle with age nor soften or crack within normal temperature ranges. Contains 9 toners and 3 clears that can be mixed to match almost any color and dries quickly when brushed or sprayed. Also includes: Pint labels and A70034 Fleet Color Selector

P/N 09-03585 ..... $595.00

Individual Colors

Black Pint ..... P/N 09-03746 ..... $7.95
Red Pint ..... P/N 09-03747 ..... $7.95
Quindo Red pint ..... P/N 09-03750 ..... $50.65
White Pint ..... P/N 09-03748 ..... $44.80
Yellow Oxide Pint ..... P/N 09-03751 ..... $43.50

CS

3M™ STIKIT™ DISC PAD 05575

For use with 5 diameter Stikit™ Discs. Has medium density foam and a 45° tapered edge for flexibility. These lightweight, shock-resistant pads have a vinyl face (blue) that provides excellent disc adhesion yet allows quick, easy removal.

Color	Size	Part No.	Price
Blue	5" x 3/4"	09-01535	$39.50

3M™ STIKIT™ DISC HAND PAD 11063

Use with 5 diameter Stikit™ Discs. Made with soft density foam for conformability. Has 1 inch wide strap for holding the pad to the operators hand.

Size	Part No.	Price
5" x 1"	09-01448	$15.80

3M™ STIKIT™ PAPER DISC ROLL 236U

Constructed of durable aluminum oxide; works well for most wood species. The open coat feature provides a more aggressive cut than a comparable closed coat abrasive of the same grade and a special loading resistant coating makes this disc a good choice when loading is a problem. The C weight, paper backing is more durable for extended disc life and harsher sanding applications.

Style #	Grade	Weight	Size	Qty.	Part No.	Price
236U	P80	C	5" x NH	100	09-01572	$59.75
236U	P100	C	5" x NH	100	09-01573	$49.50
236U	P120	C	5" x NH	100	09-01574	$55.75
236U	P150	C	5" x NH	100	09-01575	$43.95
236U	P180	C	5" x NH	100	09-01576	$55.75
236U	P220	C	5" x NH	100	09-01577	$36.00
236U	P240	C	5" x NH	100	09-01578	$50.85
415U	80	A	5" x NH	125	09-01558	$33.00
415U	100	A	5" x NH	125	09-01559	$15.75
415U	120	A	5" x NH	125	09-01560	$42.75
415U	180	A	5" x NH	250	09-01562	$88.75
415U	220	A	5" x NH	250	09-01563	$31.50

3M™ SCOTCH-BRITE™ GENERAL PURPOSE HAND PAD

Most universally used in a variety of applications. Excellent starting point to clean, finish, grain, denib and defuzz. May be used by hand, with a hand pad block, or on an in-line sander.

Grade	ID	Part No.	Price
VFIN	7447	09-01503	$1.20

3M™ SCOTCH-BRITE™ HEAVY DUTY HAND PAD

Tight and dense, this pad is the most aggressive and durable web. Excellent for heavy cleaning, deburring, and finishing. May be used by hand, with a hand pad block or on an in-line sander.

Grade	ID	Part No.	Price
MED	7440	09-01504	$3.40

3M™ SCOTCH-BRITE™ LIGHT DUTY CLEANSING PAD

Conformable web and fine mineral are excellent for fine finishes, light cleaning. Among our least aggressive abrasive hand pad. May be used by hand, with a hand pad block or on an in-line sander.

ID	Grade	Part No.	Price
7445	SFIN	09-01415	$1.25

3M™ SCOTCH-BRITE™ SR RADIAL BRISTLE DISC

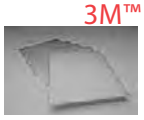
Bristles are idea for cleaning, blending and deburring.

2"..... P/N 09-01416..... $4.35
3"..... P/N 09-01417..... $4.90

3M ROLOC DISC PAD

Backup pad designed to support 3M™ Roloc™ 1-1/2 inch diameter abrasive discs. Conveniently mounts directly to tools with 1/4-20 EXT threaded shafts or used with Roloc™ shank to fit collet chuck tools.

P/N 09-02131.....$14.50



3M™ WETORDRY™ PAPER SHEET 431Q

A silicon carbide Wetordry™ abrasive product constructed on a C weight, intermediate paper backing. Can be run wet or dry.9"x11" sheets.

Grade	Part No.	Price
600	09-01446	$1.45
360	09-01526	$1.44
400	09-20900	$0.98
320	09-20800	$1.06
280	09-20700	$0.96

Grade	Part No.	Price
240	09-01529	$1.44
220	09-20600	$0.96
150	09-01532	$1.66
120	09-20550	$1.15
100	01-37700	$1.26

3M™ SCOTCH-BRITE™ CLEAN AND FINISH

Flexible web for finishing, blending, and polishing. Conformable for access to hard-to-reach areas. Great for general use on a variety of materials. Use manually or on an in-line sander.

Description	Size	Part No.	Price
3M Clean and Finish Medium	4" x 30 FT. Roll	09-01500	$124.75
3M Clean and Finish Fine	4" x 30 FT. Roll	09-01501	$77.75

3M™ ROLOC™ DISC PAD ASSEMBLY

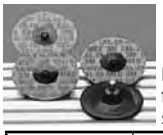
Rubber backup pads available in different degrees of hardness for varying grinding applications. Backup pad designed to support 3M™ Roloc™ abrasive discs. This pad has a ¼-20 INT thread which allows it to be mounted directly to tools with ¼-20 EXT threaded shaft or the included 1/4" diameter shank that fits 1/4" collet chucks or drill chucks.

Description	Part No.	Price
45902 - 3" Med. Disc Pad and Shank	09-02129	$21.22
Replacement Parts	Part No.	Price
1/4 inch Diameter shank	09-01557	$2.72

3M™ SCOTCH-BRITE™ ROLOC™ TR SURFACE CONDITIONING DISC

A non-woven abrasive product used for cleaning, finishing, blending and deburring applications. A threaded attachment system secures the disc to the holder.

Grade	Size	Part No.	Price	Grade	Size	Part No.	Price
ACRS	1.5"	09-01510	$0.85	AVFN	2"	09-01505	$1.20
AMED	1.5"	09-01511	$0.85	AMED	3"	09-01509	$2.20
AVFN	1.5"	09-01512	$1.35	ACRS	3"	09-01508	$2.20
ACRS	2"	09-01506	$1.20	AVFN	3"	09-01507	$2.25



3M™ SCOTCH-BRITE™ ROLOC™ TR EXL UNITIZED WHEEL

High performance and durability for deburring and finishing applications. Threaded attachment system secures the wheel to the holder.

Size	Grade	Part No.	Price
2"	MED 2A	09-01514	$3.90
2"	MED 6A	09-01516	$4.35
3"	MED 2A	09-01515	$6.25
3"	MED 6A	09-01517	$7.25

3M™ SCOTCH-BRITE™ RO-LOC™ BRISTLE DISC

Brush-like bristle disc removes coarse coatings from the large, open areas of a work piece. Works on right angle tools quickly and easily with little or no pressure.

Size	Grade	Part No.	Price
2" x 5/8"	Tapered 120 GRDE	09-01520	$7.95
2" x 5/8"	Tapered 50 GRADE	09-01518	$7.85
2" x 5/8"	Tapered 80 GRADE	09-01519	$7.85

3M PERFECT-IT FOAM POLISHING PAD

Double sided foam polishing pad with quick connect. Provides high-gloss shine. For use with A Quick Connect Adaptor. High Performance Black Foam Polishing Pad. Removes compound swirl marks and fine paint surface defects. Unique quick connect design. The Perfect-It brand means this is 3M's highest performing double sided foam poloshing pad.

P/N 09-03809 .....$26.70

3M™ GREEN CORPS™ CUT OFF WHEEL

Wheel is designed to provide high cut rates and long life on most all materials including fiberglass, stainless steel, mild steel and aerospace alloys. Ideal for use on a wide variety of utility type cut off tools. Do not use on tools without guards.

ID	Size	Part No.	Price
01985	3"x1/32"x3/8"	09-01521	$6.50
01994	4"X1/32"X3/8"	09-01524	$5.30
82238	3"X1/32"X1/4"	09-01570	$6.45
88755	4"X1/32"X1/4"	09-01580	$4.60
01986 5 Pack	3"X1/16"X3/8"	09-01523	$30.50

3M™ SCOTCH-BRITE™ DEBURRING WHEEL

Two Styles Available: Cut & Polish/Unitized Wheel-7A Medium grade (harder) Use to radius and deburr edges of aluminum parts. These wheels give a uniform brushed satin finish to parts and deburr quicker and easier than hand finishing. These wheels are discs of Scotch-Brite web compressed and bonded to form a rugged, dense wheel. Wheel size: 6" dia. x 1" wide x 1/2" thru hole.....P/N 12-00875..... $76.95

Light Deburring Wheel-7S Fine Grade (Softer)
Light deburring 7S Fin 6 x 1 x 1. This wheel has a 1" thru hole. To fit 1/2" order P/N 12-01585.....P/N 12-00948..... $67.80
3M Flange Adapter 3 45035 1/2" .....P/N 12-01585.....$4.60

3M™ REPOSITIONABLE 75 SPRAY ADHESIVE

This adhesive provides tape-like bonds on many lightweight materials. It adheres in seconds, yet has an extra-long tack range that allows you to lift and reposition materials. 16 oz. Can.

P/N 09-01377..... $19.90

3M™ SCOTCH-WELD™ URETHANE ADHESIVE DP601/ DP601NS

3M™ Scotch-Weld™ DP601 is a self-leveling, gray, rapid setting, two-component polyurethane adhesive. It is packaged as 1:1 ratio liquids in duo-pak cartridges. With the squeeze of the trigger, the components are automatically mixed and easily dispensed as a bubble-free liquid. DP601NS is the same as the DP601 except it is a non-sag, gray, rapid setting, two-component polyurethane adhesive.

Description	Size	Color	Part No.	Price
DP601 (Self-leveling)	50 mil	Gray	09-01413	$27.25
DP601NS (Non-Sag)	50 mil	Gray	09-01412	$13.50

3M™ HEADLIGHT LENS RESTORATION SYSTEM

With the 3M™ Headlight Lens Restoration System, you will use a 1200-1600 rpm drill equipped with a backup pad and sanding discs to remove the yellowed layer from the headlight lens surface. A higher rpm drill could generate excessive heat and can cause damage to the headlight lens that is difficult to remove. A lower rpm drill does not work efficiently for this process. Two sanding steps will follow to refine or reduce the sand scratches that are made when removing the yellowed layer. Finally, 3M™ Headlight Lens Polish and a foam pad will remove the fine scratches and put the final clarity on the headlight lens. Kit Includes: 1 - Disc Pad Holder 1 - 3M™ Soft Interface Pad 6 - 3M™ Sanding Discs 4 - 3M™ Finishing Discs 1 - 3M™ Trizact™ Disc 1 - 3M™ Headlight Lens Polish, 1oz 1 - Buffing Pad 1 - Step by Step Directions PN 09-02109..... $19.50

3M™ HI-STRENGTH 90 SPRAY ADHESIVE

High strength, fast contact-type adhesive. Fast contact strength buildup for many decorative laminates. Only needs 1 minute of drying time.

Size	Part No.	Price
24 oz	09-01376	$24.85

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP125 DUO-PAK

Two-part epoxy adhesive with a 1:1 mix ratio, 25 minute work life and exhibits very high peel strength. Moderately flexible and the gray version has exceptional shear adhesion. Use to bond rubber, metal, wood, plastics, and masonry products.

Size	Color	Part No.	Price
1.7 oz	Gray	09-01403	$25.65
1.7 oz	Translucent	09-01402	$23.50

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP100 PLUS

Exhibits much higher shear and peel strengths compared to DP100 Adhesive. It has a 1:1 mix ratio, a 4 minute work life, and is slightly flexible when cured. Clear in color. 1.7 oz. package. P/N 09-01401..... $21.50

3M™ SCOTCH-WELD™ EPOXY ADHESIVE DP190 DUO-PAK

A flexible, two-part adhesive that cures at room temperature and provides high strength bonds with good performance in shear and peel. Can be used to bond rubber, metal, wood, most plastics, and masonry products.

Size	Color	Part No.	Price
1.7 oz	Gray	09-01375	$21.60

3M™ SCOTCH-WELD™ EPX™ APPLICATORS AND ACCESSORIES

Mixing nozzle will perform to your requirements. With consistent air pressure for easy uniform application, the Duo-Pak cartridge will give you the flow rate needed. Fast, convenient way to simultaneously meter, mix and apply two-part adhesives and potting compounds. System features handy 3M™ Scotch-Weld™ EPX™ Cartridges that snap quickly into the durable, lightweight Scotch-Weld™EPX™ applicator. A slight squeeze on the trigger advances the plunger into the cartridge. Accurate measurement and the mixing nozzle provides thorough mixing and precise placement of material. Ideal system for assembly, maintenance and in-field service.

Size	Color	Part No.	Price
50 mL	EPX Metal Applicator w/Plunger	09-01371	$62.25
50 mL	EPX Mixing Nozzle 9742	09-01372	$2.25

3M™ SCOTCH-WELD™ EPX™ PLUS II APPLICATOR

This Plunger is for the Scotch-Weld™ EPX™ Plus II Applicator. The Scotch-Weld™ EPX™ Plus II Applicator is used to Dispense 3M™ Scotch-Weld™ Adhesives in Duo-Pak Cartridges. The applicator is a low-cost portable, self contained metering, mixing and dispensing machine that simultaneously meters and mixes two-part adhesives as the material is applied. P/N 09-01380 ..... $75.75
50 mL Mixing Nozzle 9742..... P/N 09-01372 ..... $2.25

3M™ SCOTCH-WELD™ EPX™ APPLICATOR NOZZLE

Applicator nozzle designed for both the 200 mL and 400 mL applicators.

P/N 09-01408 ..... $3.35

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3M™ SCOTCH-WELD™ EPOXY ADHESIVE 2216 B/A

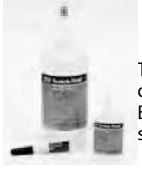
A flexible, two part, room temperature curing epoxy with high peel and shear strength. Scotch-Weld epoxy adhesive 2216 B/A is identical to 3M™ Scotch-Weld™ Epoxy Adhesive EC-2216 B/A in chemical composition. Scotch-Weld epoxy adhesive EC-2216 B/A has been labeled, packaged, tested, and certified for aircraft and aerospace applications. Scotch-Weld epoxy adhesive 2216 B/A may be used for aircraft and aerospace applications if proper Certificates of Test have been issued and material meets all aircraft manufacturer's specification requirements. 24 month shelf life.

SIZE	COLOR	DESCRIPTION	PART NO.	PRICE
2 oz.	Gray	Adhesive 2216 B/A	02-00045	$47.50
Pint	Gray	Adhesive 2216 B/A	02-00113	$149.85
Quart	Gray	Adhesive 2216 B/A	02-00114	$198.75

3M™ SCOTCH-WELD™ INSTANT ADHESIVE CA40H

One-part, high strength, very fast setting adhesive cures at room temperature. Adheres to difficult to bond substrates such as EPDM rubber, aluminum, and flexible vinyl. Comes in a 1 oz. Bottle. Clear.

P/N 09-01368..... $27.25



3M™ SCOTCH-WELD™ INSTANT ADHESIVE CA8

This instant adhesive has a fast set time of 5 to 40 seconds. Excellent adhesion on metal, plastic and rubber. Bonds resist shock and impacts. A cyanoacrylate adhesive. Comes in a 1 oz. bottle.

P/N 09-01366..... $27.75

3M™ SCOTCH-WELD™ INSTANT ADHESIVE SURFACE ACTIVATOR

It is ideal for use with all 3M Cyanoacrylate Adhesives for a broad range of industrial and electronic applications. It is also ideal for use with CA-5, CA-9, or CA-50 Gel for many wire tacking and coil terminating applications.

P/N 09-01407.....$15.00

3M SCOTCH-GRIP HP CONTACT ADHESIVE 1357

A high performance contact adhesive that provides a long bonding range and excellent initial strength.

1357 Grey/OLIV..... P/N 09-01362..... $99.75
1357 Neutral 1G..... P/N 09-01373..... $118.75

3M™ SCOTCH GRIP RUBBER ADHESIVE 1300

Lower viscosity, sprayable version of Scotch-Weld Neoprene High Performance Rubber and Gasket Adhesive 1300. Has excellent adhesion to metal, baked enamel, wood, most plastics, and neoprene, reclaim, SBR, and butyl rubber. not for EPDM rubber.

Attention: Volatile Organic Compounds (VOCs) Government Regulations: Product cannot be purchased, sold or used in the states listed below. CA, CT, DC, DE, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VA

UPC	Size	Color	Part No.	Price
1300L	1 qt	YELLOW	09-27220	$45.50
1300L	Gallon.		09-01712	$127.75
1300L	5 Gallon		09-01713	$469.00
1300	5 oz.		09-01708	$17.50
1300	Quart		09-01709	$51.75
1300	Gallon		09-01710	$142.75
1300	5 Gallon		09-01711	$579.00

3M™ SCOTCH-GRIP™ CONTACT ADHESIVE

A brushable, neutral-colored contact adhesive for bonding many decorative laminates, aluminum, steel, plywood, panels, wood and wood veneer, masonry, rubber, canvas and other porous and non-porous materials to each other or to themselves.

P/N 09-01364.....$28.50

3M™ SCOTCH-GRIP™ RUBBER AND GASKET ADHESIVE 847

This fast drying adhesive develops strength very quickly. It has excellent heat resistance; temperature performance is from -5 to 300F. Meets specification requirements of MIL-A-1154C. Bonds neoprene, reclaim, SB-R, and butyl rubber to metal, wood, most plastics, and many other products. 5oz. Tube. reddish Brown in Color.

P/N 09-01361.....$17.50

SUPER DOOR SEAL ADHESIVE

Super adhesive for door seals and other applications. Many customers have had difficulty finding EC1300L adhesive (or equivalent). Search no more! This super adhesive has exceptional bonding strength, is fast drying, and firmly bonds the seals making your installation easier! They recommend you order the adhesive when you order your new seals. One tube is enough for installing all the seals on your aircraft when applied in accordance with the seal installation instructions. A free acid brush is included with each order. P/N 09-27200..... $6.95

3M™ FINESSE-IT™ FINISHING MATERIAL 81235

Specially designed compounds and polishes to be used on OEM and baked refinish paints to remove sand scratches or to remove swirl marks from previously compounded areas. 1qt. bottles.

P/N 09-01451..... $27.60

3M™ FINESSE-IT™ NATURAL BUFFING PAD

The 3 inch buffing pad is designed to get you into tight areas not accessible with a conventional polisher. Pads are hook-and-loop backed. Pads are sold each.

P/N 09-01452 .....$4.10

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3M™ PERFECT-IT PAINT FINISHING SYSTEM

Improve buffing and polishing productivity – and finish faster with more consistent results. Includes the following: • 3M Perfect-It Rubbing Compound - P/N 09-02999 • 3M Perfect-It Low-linting Wool Compound Pad - P/N 09-03001 • 3M Perfect-It Machine Polish - P/N 09-03004 • 3M Perfect-It Foam Polishing Pad - P/N 09-03005 • 3M Perfect-It Ultrafine Machine Polish - P/N 09-03006 • 3M Perfect-It Ultrafine Foam Polishing Pad - P/N 09-03007. Items are also sold separately.

P/N 09-03010 ..... $284.95

3M™ PERFECT-IT™ SHOW CAR PASTE WAX

Ultra high gloss paste wax with exceptional durability for use on automotive paints. Shines and protects new and like new pint finishes, producing a deep high gloss, lustrous, durable, "wet look" finish.

P/N 09-01443 ..... $20.70

3M™ PERFECT-IT™ BACKUP PAD

Enables 3M™ Superbuff™ Compound Pad users to use the 3M™ Perfect-It™ Foam Polishing Pad without having to remove the 3M™ Superbuff™ Adaptor 05710 from the shaft of the polisher. Fits all standard 5/8 in shaft slow-speed polishers. 7" x 3/4". P/N 09-01426 ..... $44.75

3M™ AVIATION RUBBING COMPOUND

Effectively refines scratches in business jet cabinet clear coats using polyesters and polyurethanes. Also used for refining scratches on painted aircraft surfaces created during the defect removal process, as well as removing paint oxidation on painted aircraft surfaces. Can be used on aircraft cabinetry or painted surfaces. * No Silicone * Non-corrosive ..... P/N 09-02173 ..... $19.85

SuperBuff Buffing pad 05703 ..... P/N 09-02174 ..... $27.90

3M™ WHITE GREASE 8875 (LITHIUM LUBE)

Long-lasting lubrication, easy spray viscosity. Won't drip or run. Resists "washing out" if exposed to road spray. 10.5 oz. Can.

P/N 09-01445 ..... $8.50

3M™ OVERSPRAY PROTECTIVE SHEETING MASKER

Portable masker designed to dispense Overspray Protective Sheeting (PN06727). Can be used horizontally, vertically or wall mounted. Spring loaded end frame designed for easy loading of Overspray Protective Sheeting. Paper is not included with masker.

P/N 09-01441 ..... $102.50

3M™ LIGHTWEIGHT BODY FILLER

Cures tack-free in 15-20 minutes — reduces sandpaper loading. Creamy texture. Smooth spreading. Easy smoothing. Vacuum processed to minimize pinholes.

1 Qt. ..... P/N 09-01428 ..... $11.50

1 Gal. ..... P/N 09-01429 ..... $21.60

3M™ FLOWABLE FINISHING PUTTY

Tack-Free and Stain Resistant. Two component, self-leveling putty designed for use as a "skin" coat over plastic filler to fill pinholes, sand scratches, low areas or other imperfections. Available in quart and handy squeeze dispenser — no mess. Fills pinholes in body fillers and small imperfections in metal and fiberglass. Cures tack-free in 30 minutes. Flowable, brushable. Easiest sanding 3M™ Polyester Putty. Minimizes staining that can occur with basecoat/clearcoat systems over body filler. Vacuum processed to minimize pinholes. Excellent adhesion to galvanized, aluminum and thoroughly cured and sanded factory-applied paint surfaces. P/N 09-01432 ..... $36.50

3M™ SHORT STRAND FIBERGLASS REINFORCED FILLER

Contains chopped fiberglass. Repairs holes, cracks and tears in fiberglass. Repairs holes in metal. Smooth spreading. Waterproof. Can be used with Fiberglass Mat (PN05837) or Fiberglass Cloth (PN05838) to reinforce large repair areas.

1 Gal. Can ..... P/N 09-01431 ..... $47.50

3M™ SPREADERS

Designed for spreading body and fiberglass fillers, finishing putties, and resins. Sharp edge. Flexible. Durable. Easy to clean. Cured fillers pops off easily. Available in 4" or Assortment (1 each 4, 5 and 6).

4" ..... P/N 09-01435 ..... $0.82

Assortment ..... P/N 09-01436 ..... $4.75

3M™ ADHESIVE REMOVER CITRUS BASE

Provides easy clean up of most types of adhesives. Quickly removes waxes, road tars, grease, oil and similar materials. Will not harm paint, vinyl or fabrics when properly used. 24 oz. Can. Pale yellow in color. P/N 09-01379 ..... $26.55

3M™ ADHESIVE REMOVER CITRUS BASE

A liquid cleaner/degreaser that can be used to dissolve and remove dirt, grease, tar, and many non-curing type adhesives. It can also be used to degrease substrates for adhesive bonding in place of many chlorinated or petroleum-based solvents. 24 oz. Can. Clear in color. P/N 09-01393 ..... $31.50

3M™ 5-WAY PENETRANT

Multi-purpose product that is effective as a demoisturant - displaces moisture and "dries out" electrical apparatus. 24. oz. Can. Light Amber in color.

P/N 09-01370 ..... $16.25

3M™ SCOTCHGARD SPOT REMOVER AND UPHOLSTERY CLEANER

Designed to clean carpets and upholstery. Releases both oil- and water-based soils from carpet and upholstery. Aerosol foam is sprayed directly on spot with minimum of overspray. Requires no rinsing. Wipe or blot area with a clean, absorbent cloth. P/N 09-01722 ..... $10.50

3M™ STAINLESS STEEL CLEANER AND POLISH

Ideally suited for stainless steel, chrome, laminated plastics and aluminum surfaces. With a high-gloss formula, it wipes clean with no streaks or buildup, resists fingerprints and masks surface blemishes. Pleasant lime fragrance. Contains no petroleum distillates.

P/N 09-01721 ..... $12.25

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3M™ SCOTCHMATE™ VELCRO FASTENING TAPES

RECLOSABLE FASTENER HOOK

Its as simple as pressing together and pulling apart. When your product calls for thousands of easy openings and closings, 3M™ Scotchmate™ Reclosable Fasteners pull through for your. Tiny, stiff hooks mesh with pliable loops for quick secure fastening. In addition, provide a solution as strong as you need. No adhesive, nylon and sewable hook so can be easily attached to many substrates. Sold by the foot.

Velcro Fastening Tape 2" Black ..... 09-22223 ..... $1.85
Hook 2" SJ3402 ..... 09-01388 ..... $1.36
Loop 2" SJ3401 ..... 09-01387 ..... $0.51

VELCRO FASTENING TAPES

Consists of a set of 2 mating 1" wide black Nylon tapes, which, when pressed together, lock tightly and hold until peeled apart.Tapes have pressure-sensitive adhesive backs. Ideal for use in cockpit to mount pilot supplies or as an upholstery and rug attachment. An effective fastening material - applications are unlimited. Sold by the yard.

Velcro Fastening Tape 1" Black ..... 09-31400 ..... $6.75
Loop 1" SJ3571 ..... 09-00251 ..... $3.60
Hook 1" SJ3572 ..... 09-00250 ..... $3.60

3M SCOTCHMATE 2" LOOP SJ3572

It's as simple as pressing together and pulling apart. When your product calls for thousands of easy openings and closings, 3M ™ Scotchmate ™ Reclosable Fasteners pull through for your. Tiny, stiff hooks mesh with pliable loops for quick secure fastening. In addition, Scotchmate reclosable fasteners are backed with 3M adhesive techonology expertise which range from rubber adhesives to high performance, double-coated foam tape which can be adhered to most surfaces to provide a solution as strong as you need. Premium performance nylon hook with VHB ™ Tape for high temperature resistance and great shear performance. Sold by the foot.

Velcro Fastening Tape 2" ..... 09-01656 ..... $8.90
2" Loop SJ3572 ..... 09-01653 ..... $2.29
Hook 2" SJ3572 ..... 09-01652 ..... $6.95

3M™ SAFETY WALK SHEET

A durable, mineral coated, non-slip fabric for wing walks. Waterproof, weather-proof and unaffected by vibrations, heat, cold, gasoline or oil. Assures safe footing. Pressure-sensitive backing should have additional coating of 3M 1300L (located on pg 388) to assure adhesion for aircraft applications.

COMFORMABLE TREADS		
Description	Part No.	Price
Safety Walk 510 2" W	09-01485	$2.35
Safety Walk 510 4" W	09-01486	$2.40
GENERAL PURPOSE		
Description	Part No.	Price
Safety Walk 24 INCH W	09-31675	$9.95
Safety Walk 610 2" W	09-01482	$1.80
Safety Walk 610 4" W	09-01483	$1.82
Safety Walk 610 12" W	09-32250	$5.35

3M™ EAR PLUGS 1100

Smooth dirt resistant surface, tapered design to fit the ear canal, provide added comfort and hygiene. Hypo-allergenic material. Each box contains 200 pairs, and each package is easy to dispense. Noise Reduction Rating: 29dB*.

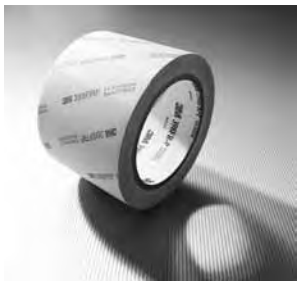
P/N 09-01493 ..... $0.25

3M FLAME RETARDENT VELCRO FASTENER

Flame resistant, rubber adhesive, nylon, woven loop reclosable fastener and meets F.A.R. 25.853 paragraph (a)(1)(i) 60 second vertical burn test. Mates with SJ3519FR, black.

This flame resistant product is coated with a unique flame resistant synthetic rubber based adhesive. High temperature performance. Bonds wells to paper and cardboard, paint, bare and painted metal, glass, sealed wood and many plastics.

Hook 2" x 50 yds. ..... P/N 09-02598 ..... $219.95
Loop 2" x 50 yds ..... P/N 09-02597 ..... $219.95



3M™ GLASS CLOTH TAPE 398FRP

Flame Retardant Sealing Tape 398FRP is a glass cloth tape with an acrylic adhesive for many applications requiring high adhesion, an abrasion-resistant backing and flame retardant properties. The tape meets flame retardancy requirements of F.A.R.

2"x36 yards
P/N 09-01728 ..... $47.99
3"x36 yards
P/N 09-02135 ..... $68.85

3M™ FLAME RETARDANT VHB TAPE

A flame retardant, very conformable, double-sided, pressure-sensitve, closed-cell acrylic foam tape with a PE film liner. Bonds high, medium and medium/low surface energy substrates. Provides handling convenience, cushioning, damping, and impact resistance. 40 mil thick. Black color.

3" X 3 ft. ..... P/N 09-03054 ..... $29.99

3M™ CARPET TAPE 9377 2 INCH X 25 YARD

3M 9377 Tape has a differential adhesive system with a high-tack acrylic that bonds to the top-layer substrate and a rubber-based adhesive system that attaches to the flooring material. One side is black and attaches to the flooring material with an acrylic-based adhesive. The white side of the tape is a rubber-based adhesive that provides a bond to the floor surface. Firm application pressure helps develop better adhesive contact and improve bond strength. The bond strength will build over time reaching maximum strength at 72 hours. FAR-25-.853

P/N 09-02133 ..... $44.90

3M™ SCOTCH® SUPER 33+D VINYL ELECTRICAL TAPE DISPENSER

A premium grade vinyl electrical insulating tape, its aggressive adhesive and elastic backing ensure easy, water-resistant conformation to irregular surfaces in low temperatures, yet will not ooze or melt in high temperatures. 3/4" wide X 33' Long. P/N 09-01465 ..... $5.60

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3M™ TAPE - MASKING

3M™ SCOTCH® FINE LINE TAPE 218

This 3M tape is particularly suitable for pin striping, multicolor and other custom painting applications. It is a thin, conformable green polypropylene film tape with a special finish that resists paint runoff. The adhesive adheres instantly and offers good holding power, resists lifting and curling. Stretchable and easy to handle. Provides an extremely fine color-line separation for decorative painting of aircraft. Scotch No. 218.

Width	Length	Part No.	Price
1/8"	60 Yards	09-20200	$20.65
1/4"	60 Yards	09-20300	$9.95
3/8"	60 Yards	09-20350	$25.50
1/2"	60 Yards	09-20400	$11.85
3/4"	60 Yards	09-20500	$15.50
1"	60 Yards	09-01348	$17.75

3M™ ALUMINUM FOIL TAPE 425

Dead-soft aluminum foil tape. Applications include masking of sensitive components to protect from damage during aircraft paint stripping. In white goods appliances, tape provides an excellent moisture barrier, helps reflect and dissipate heat.

Size	P/N	Price
1.5" x 60 Yards	09-01382	$39.85
1" x 60 Yards	09-01381	$28.70
2" x 60 Yards	09-01383	$56.75
3" x 60 Yards	09-01385	$82.75
3/4" x 60 Yards	09-01386	$21.75

3M ALUMINUM PROP TAPE

3M™ Aluminum Foil Tape 427, dead-soft aluminum foil backing, excellent heat and light reflection to protect against high temperatures and U.V. degradation. The foil also serves as an excellent barrier against moisture, dust, flame, and certain chemicals as used in aircraft paint stripping masking. Acrylic adhesive supplies superior temperature, U.V. and solvent resistance. It provides excellent age life and is ideal for harsh, long-term outdoor environments. Meets F.A.R 25.853(a), O447 **Sold by the Foot**

P/N 15-04831.....$0.60

3M™ VHB™ TAPE 4950

45.0 mil thick, white closed cell acrylic foam carrier with all purpose acrylic adhesive and paper liner. High strength, handling convenience, cushioning, damping and impact resistance. UL listing 746C.

Size	Color	Part No.	Price
1"x36yds	White	09-01360	$103.95
2"x36yds	White	09-01389	$229.50

3M™ VINYL TAPE

3M™ Vinyl Tape 471, ideal for masking, wrapping or sealing many curved or irregular surfaces, excellent for many lane and safety marking applications, ideal for color coding, abrasion protection, decoration and splicing applications

Color	Size	Part No.	Price
Blue	2" x 36 Yards	09-01344	$17.90
Black	2" x 36 Yards	09-02179	$37.85
Yellow	1" x 36 Yards	09-01338	$10.95
White	1" x 36" Yards	09-02076	$18.50

3M™ DOUBLE COATED FILM TAPE 415

A medium-firm, acrylic, pressure sensitive adhesive that featuring an excellent balance of good initial adhesion (quick stick) and good shear holding power. It is ideal for bonding together a wide variety and dissimilar materials such as metals, glass, wood, paints, and many plastics.

Size	Color	Part No.	Price
2"x36yds	White	09-01343	$46.50

3M™ SCOTCH® HIGH PERFORMANCE MASKING TAPE 232

A high performance paper masking tape to be used in the medium temperature paint bake operation. A smooth crepe paper tape that is treated with a heat and solvent resistant coating.

Size	Part No.	Price
48MM	09-01340	$4.85
72MM	09-01331	$7.50

3M MASKING POLY TAPE 5903 (RED)

5903 is a poly tape comprised of heavy duty polyethylene film and synthetic rubber adhesive. It is UV weather resistant and removes cleanly for up to a month with little or no adhesive residue on most opaque surfaces without deteriorating or fading. Used for window and door masking, outdoor holding and protecting surfaces including stucco, concrete, brick, and a variety of construction surfaces where removability is important.

P/N 09-02136.....$9.50

3M™ HAND MASKER KIT

Tape guide pin molded into the M3000 KML frame. Guide pin aids tracking of the masking tape onto masking paper while dispensing. Tack-Down Tape Dispenser (PN06789) allows easy on-off mounting. Provides fingertip access to an extra roll of masking tape. Includes 12 cut off blade. Making film is not included with dispenser.

P/N 09-01442..... $58.75

3M™ SCOTCH® SAFERELEASE™ BLUE PAINTERS MASKING TAPE 2090

Ideal for long-term masking projects when tape must be left on for up to a week. Removes cleanly and easily for up to seven days without leaving adhesive residue.

Size	Part No.	Price
3/4"	09-01420	$3.60
1"	09-01421	$4.50

Size	Part No.	Price
1-1/2"	09-01422	$6.80
2"	09-01423	$8.75

3M™ SCOTCH® STEEL GRAY MASKING PAPER

Strong, flexible and pliable. Formulated to resist penetrations of solvents, lacquers or enamels. Comes in 1000 rolls.

Description	Part No.	Price
Gray Masking Paper 12"	09-01353	$56.90
Gray Masking Paper 18"	09-01354	$86.80
Gray Masking Paper 24"	09-01355	$114.75
Gray Masking Paper 36"	09-01356	$161.75

CS

3M™ PRODUCTS

3M™ SCOTCH-WELD™ THREADLOCKER

THREADLOCKER 3493 PURPLE - For fasteners less then 5/16". Low removal torquer
50 mL .....P/N 09-01628.....$24.95

3M™ NOVEC™

3M™ NOVEC™ ELECTRONIC DEGREASER - Effectively removes oils, greases adn handling soils from electric motors, electrical equipment, precision devices and other electro-mechanical or sensitive devices. Based on proprietary 3M solvent technology; it is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 12oz can, 6 can per case.
PN 09-01703 .....$21.50

3M™ NOVEC™ FLUX REMOVER - Effectively removes rosin solder fluxes, waxes and similar contaminants found in electronics manufacturing and repair. Based on proprietary 3M solvent technology; it is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 12oz can, 6 can per case.
PN 09-01702 .....$18.90

3M™ NOVEC™ CONTACT CLEANER - Effectively removes light oils, greases, silicones, dust and particulates from sensitive electrical and electronic equipment. It is compatible with plastics, is non-flammable, non-ozone depleting and contains no HCFCs, HFCs, nPB or HAPs. 11oz can, 6 can per case
PN 09-01704 .....$21.75

CS

3M™ PAINT PREPARATION SYSTEM (PPS™) CUP AND COLLAR, 16023

3M™ PPS™ Cup and Collar, 16023 Large hard cup that supports and holds the PPS large flexible liner, part number 16024. If filled to the top, this cup will hold 32 fl oz.
P/N 09-01717.....$23.50

3M™ PPS™ MINI CUPS & COLLARS 16115

Hard cup that supports and holds the PPS mini flexible liner, part number 16114. If filled to the top, this cup will hold 6 fl oz.P/N 09-01720.....$25.50

3M™ PPS™ MIXING CUP AND COLLAR, 16001

Small, hard cup that supports and holds the PPS small flexible liner, part number 16000.
P/N 09-01715.....$34.90

3M™ PPS™ ADAPTOR, 16054, TYPE 18

Adaptor converts DeVilbiss TGHV 530 Siphon Feed and all Full Size Siphon Feed Guns with North American 3/8 Female-18 Thread NPS guns for use with 3M™ Paint Preparation System. P/N 09-01716.....$26.55

3M PPS LARGE MICRON FILTER KIT

PPS™ is a complete painting system from 3M™ which produces cleaner jobs, saves on solvent usage and gun cleaning time and can improve operator efficiency by as much as 15%. Specifically designed adapters allow painters to use the PPS™ system with virtually any spray gun.
Kit contains 25 disposable lids with 200 micron filters, 25 disposable liners, and 10 sealing plugs. The 200 micron filters are recommended for traditional solvent based paint or primer applications. Graduated measurement to 28 oz/840 mL - with mix ratio film insert - . Maximum capacity of 32 oz/950 mL when filled to within 1/8 inch of rim. P/N 09-01718.....$68.75

3M PPS MINI MICRON FILTER KIT

Kit contains 50 disposable lids with 200 micron filters, 50 disposable liners, and 20 sealing plugs. The 200 micron filters are recommended for traditional solvent based paint or primer applications. Graduated measurement to 5 1/2 oz - with generic mix ratio film insert - . Max. capacity of 6 fl oz. P/N 09-01719.....$96.75

3M BODY FILLERS

3M premium fillers with adhesion promoters, offer the very best in all-around performance. Our premium fillers adhere to virtually any surface including wood, metal, aluminum, galvanized steel, fiberglass and concrete. They are also non-staining, non-shrinking, creamy and are great for building plugs, patterns, molds, prototypes and general repair to composite parts. 3M premium fillers are easy to sand and are manufactured with only the highest quality ingredients.

Description	Size	Part No.	Price
Marson™ Platinum™ Body Filler	Gallon	01-01091	$39.75

STANDARD BODY FILLERS

3M standard fillers are the economical choice for gap filling, fairing, smoothing and general repair. They are also great for plug, pattern and tooling departments for creating and building shapes, curves and intricate elements to molds and patterns. They are easy to mix, apply, and sand, and have a quick cure time. Great for quick repairs to fiberglass, wood, metal concrete and aluminum.

Description	Size	Part No.	Price
Dynatron ™ Dynalite™ Body Filler	Quart	01-01072	$11.70
Dynatron ™ Dynalite™ Body Filler	Gallon	01-00368	$26.75

REINFORCED FILLERS

3M's line of reinforced filler products offers users a unique and flexible array of repair solutions. Each product is reinforced with short fiberglass strands, long fiberglass strands or milled fiberglass. These reinforced fillers are significantly stronger than regular fillers and are waterproof. Great for repairing fiberglass and rust holes in metal.

Description	Size	Part No.	Price
Dynatron ™ Ultra-Glass™ Reinforced Filler	Quart	01-01097	$14.75
Dynatron ™ Ultra-Glass™ Reinforced Filler	Gallon	01-01098	$30.50
Dynatron ™ Dyna-Glass™ Reinforced Filler	Quart	01-01073	$18.50
Dynatron ™ Dyna-Hair™ Reinforced Filler	Gallon	01-01103	$39.50

3M™ PRODUCTS – 3M™ WINDSHIELD REPAIR

3M™ ACCUSPRAY SPRAY GUN

Introducing the 3M™ Accuspray™ System, the equivalent of having a brand new primer spray gun for a fraction of the cost. Provides the equivalent of a brand new primer spray gun for a fraction of the cost. Kit contains 1 spray gun, 3 atomizing heads and 1 air flow control valve.

The innovative replaceable atomizing head allows for the following benefits: • Reduces Primer Consumption: minimizes overspray • Boosts Productivity: lowers primer spraying time, decreases primer sanding time, reduces clean-up • Maximizes Benefits of the 3M™ PPS™ System: reduces gun cleaning time, uses less solvent for clean up, decreases hazardous disposal cost, improves productivity and profitability

HG09 Gun.....P/N 09-03016.....$156.95
Head Refill Kit.....P/N 09-03060.....$17.50

3M™ ROLOC BRISTLE DISK KIT

Convenient introductory pack contains a variety of grades of Roloc™ Bristle Discs 2-inch diameter x 5/8-inch trim with a disc pad holder for an optimized finish.

2" Disc.....P/N 09-03014.....$80.75
3" Disc.....P/N 09-03015.....$109.50

3M™ PAINT BUSTER HAND CLEANER

3M Paint Buster Hand Cleaner is a non-toxic and non-caustic cream-type hand cleaner that removes enamel and urethane paints, varnish, lacquer, putties, and adhesives. Superior performance without the use of skin damaging solvents. Almost no odor, non runny, easy-to-squeeze tube. 9.75 oz Tube.....P/N 09-03018.....$19.50

3M™ TARTAN TAPE DISPENSER GUN

3M Tartan™ Box Sealing Hand Dispenser is an economical, easy to use box sealing tape dispenser. It applies 3 inch (72 mm) box sealing tape.

P/N 09-03019.....$25.50

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3M™ 2-STEP AVIATION WINDOW RESTORATION SYSTEM KIT

Removes scratches, hazing and other imperfections from acrylic and polycarbonate aircraft windows. Restores clarity and keeps windows looking "factory-new!"

The 3M™ Aviation Window Restoration System by Clearfix™ Aerospace is an easy to use, three-step process designed specifically for use on acrylic and polycarbonate aircraft windows.

The first two steps restore clarity and optical properties by removing scratches, hazing and other imperfections incurred in normal use, degradation due to suncaused oxidation, and scratching from sand and salt crystals. The final step puts down a tough barrier coating that provides durable, effective UV protection.

Just prep, apply and fly!

With this easy-to-use system, your windows can be restored to like-new condition without the hassle of removing them. And it's fast – 60 minutes after application, you're ready to fly!.....P/N 13-13064.....$374.00

3M™ FINISHING GLAZES

3M finishing glazes are the right choice when contouring and finishing surfaces or repairing minor surface imperfections prior to painting. Each product is self-leveling and easy to apply and sand. They will not stain/bleed through paint and adhere to most surfaces, including primed and painted surfaces.

Description	Size	Part No.	Price
Dynatron ™ Dyna Maxx™ Finishing Glaze	24fl. oz Tube	01-01094	$30.50
Dynatron ™ Xtra Glaze™ Finishing Glaze	24fl. oz Tube	01-01095	$18.50
Dynatron ™ Dyna-Glaze™ Finishing Glaze	24fl. oz Tube	01-01096	$23.50

3M™ SPREADERS

A special, flexible spreading edge makes precise application of body fillers, putties and glazes a breeze. Cured body filler will easily pop off the spreader, allowing it to be reused.

Description	Color	Size	Part No.	Price
Dynatron ™ Spreader	Yellow	3" x 4"	01-01105	$0.75

3M™ MIXING BOARDS

Clean, wax-free surface for mixing body filler. Cured body filler can be easily removed, allowing repeat uses or use the disposable paper board that offers a non-porous, wax-free surface and easy disposal.

Description	Size	Part No.	Price
Dynatron ™ Mixing Board	12 " x 11.5"	01-01107	$4.90
Marson ™ Disposable Paper Mixing Board	100 - 10" x 10"	01-01108	$15.50

3M™ FIBERGLASS RESIN/KITS

3M's Fiberglass Resin and Resin Kits use the exact same high-strength polyester resin that is used to manufacture high performance watercrafts, snowmobiles, bathtubs and showers. Polyester resins can be used alone or in conjunction with fiberglass mat, cloth or tape to create waterproof repairs to wood, metal, concrete, stainless steel, aluminum and fiberglass. Great for repairing large rust holes in metal and large fiberglass areas where lamination must be rebuilt. Compatible with all paints, including gel coat and marine paints. Quart. P/N 01-01104.....$38.75

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MEGUIAR'S PRODUCTS

MEGUIARS ALL METAL POLISH

Turn dull, oxidized wheels and metal stunningly bright in just minutes! Meguiar's proprietary formula cuts quickly to remove oxidation, but without scratching. Gentle polishing oils finish the surface for blindingly bright shine. Formulated to work quickly with Meguiar's DynaCone wheel polishing tool or by hand. Not for use with painted or clear-coated wheels. Quantity: 8 ounces.

P/N 09-03439. $7.95

MEGUIARS ULTIMATE PROTECTANT

For superior UV protection and shine on rubber, vinyl and plastic that lasts weeks, look no further than Meguiar's Ultimate Protectant. Utilizing break-through UV clear-coat technology, Ultimate Protectant offers superior UV protection with shine that significantly outlasts conventional products, creating a rich shine and darkness on interior surfaces, while bringing new life to exterior trim, moldings and tires. Quantity: 16 ounces.

P/N 09-03437. $8.95

MEGUIARS ULTIMATE BLACK

Makes trim and plastic look like new, with extended durability that lasts for weeks! Restore new life to all exterior plastic, vinyl and rubber trim such as bumpers, moldings, door handles, rearview mirror housings and windshield cowlings. Utilizing breakthrough UV clear-coat technology, Meguiar's Ultimate Black significantly outlasts conventional protectants and trim-care products. This durable formula dries almost instantly and, once cured, will not streak when treated surfaces get wet. Quantity: 12 ounces.

P/N 09-03442. $7.95

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MEGUIAR'S DUAL ACTION POLISHER

Whether you're a seasoned professional or a weekend warrior who wants show quality, swirl-free results, this is the tool for you. Meguiar's® Dual Action Polisher greatly reduces the amount of time it takes to apply paint cleaners, polishes and protection products and produces results far superior to applying these products by hand. And because of its dual action - rotation and orbit, you never have to worry about burning the paint. *G110 includes (polisher, "D" handle, custom hard case, W67DA backing plate, wrench, manual) P/N 09-02358..... $198.00

MEGUIAR'S MIRROR GLAZE

PLASTIC POLISH (NO. 10) - Safely restores and maintains optic clarity to all clear plastics. This complete one-step product keeps new and like-new transparent plastics in perfect condition with a static-free coating that repels dust. Meets Military Spec MIL-C-5547 and MIL-C-18767A(ASG).

8 Oz. P/N 09-23300. $6.95

PLASTIC CLEANER (NO. 17) - Safely removes fine "hairline" scratches and grime from clear plastic windows and windshields, acrylic and polycarbonate surfaces. Follow with an application of Plastic Polish (No. 10) to restore perfect clarity.

8 Oz ..... P/N 09-23500 ..... $6.95

CLEAR PLASTIC CLEANER/POLISH (NO. 18) - Mirror Glaze #18 restores optical clarity and romoves surface residue. Its anti-static formula repels dusts and its one-step action saves maintenance time. Just spray on and wipe dry to safely remove surface contaminants and restore optic clarity. ..... 8 oz. P/N 09-23800. $6.85

FINAL INSPECTION (NO. 34) - Mists on and wipes off to remove fresh contaminants and maintain a showroom shine... anywhere, anytime. High lubricity formula removes dust, fingerprints, contaminants and fine scratches. Contains optical brighteners for a high gloss shine. It is "paintable", safe for use in a paint shop environment and safe on all paint finishes, including clear coats.

16 Oz..... P/N 09-00446..... $7.50
1 Gal..... P/N 09-00445..... $28.50

VINYL&RUBBERCLEANER/CONDITIONER(NO.40) - Gives a clean, natural looking luster to rubber and vinyl surfaces. Cleans the surface while restoring its original color. Prevents fading, cracking & drying. Avoids typical synthetic shine of conventional protectants. Contains UV protectants to extend life of vinyl & rubber. Great for use on tires, rubber trim, under hood detailing. Perfect for vinyl surfaces, including dashboards, door panels, vinyl tops and interiors.

16 Oz..... P/N 09-23450..... $8.80
1 Gal..... P/N 09-23460..... $34.85

POLYMER SEALANT (M-20) - Polymer Sealant outshines any other wax or polymer product. It has a unique blend of polymers, silicones and imported waxes which create a brilliant high gloss finish that outlasts all other waxes. Polymer Sealant is safe and effective on all paint finishes, including clear coats. 16 oz. ..... P/N 09-00764 ..... $19.70
64 oz. ..... P/N 09-00185 ..... $41.75

MEGUIAR'S SOFTBUFF FOAM PADS

SoftBuff foam pads are safer than wool pads because they will not leave scratches or buffer swirl marks. When used to apply Meguiar's cleaners, polishes & waxes, these unique, fiber-free foam pads add incredible gloss and depth of color to all fiberglass & painted finishes.

W-7000 8" CUTTING PAD - Offers aggressive cleaning ability without leaving swirl marks, scratches or other blemishes. Its quick-change anchor-loop backing matches up with all popular types of hook and loop buffer backing plates. P/N 09-23470 ..... $14.50ea

W-9000 8" FINISHING PAD - The finest finishing tool to create the ultimate high gloss, swirl-free finish! Its quick-change anchor-loop backing matches up with all popular types of hook and loop buffer backing plates.

P/N 09-23480 ..... $13.75ea

W-65 6-1/2" PROFESSIONAL BACKING PLATE - The perfect partner to all SoftBuff foam buffing pads with quick-change anchor loop backing.

P/N 09-23490 ..... $21.65ea

W7207 - SOFT BUFF™ 2.0 FOAM CUTTING PAD - New foam technology cuts through moderate surface defects with fewer swirls. 7" pad size reduces chatter resulting in easy buffing. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering.

P/N 09-02359 $12.50

W8207 - SOFT BUFF™ 2.0 FOAM POLISHING PAD - Eliminates minor surface defects while restoring gloss. 7" pad combined with new technology provide a smooth buffing experience. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering.

P/N 09-02360 ..... $13.80

W9207 - SOFT BUFF™ 2.0 FOAM FINISHING PAD - All new soft foam technology removes light swirls and creates a luxurious high gloss finish. Smooth buffing experience with minimal fatigue. High-tech laminate provides durability and is machine washable. Recessed backing for easy centering

P/N 09-02361..... $12.50

MEGUIAR'S PRODUCTS

MEGUIAR'S GOLD CLASS

GOLD CLASS CAR WASH SHAMPOO & CONDITIONER - Meguiar's® Gold Class™ Car Wash Shampoo & Conditioner is a rich and luxurious product designed to both wash and condition paint in one easy step. The premium formula gently foams away tough dirt, road grime and contaminants without compromising wax protection. Ultra rich paint conditioners clear away debris to reveal color and clarity, leaving paint looking radiant.

16oz. ..... P/N 09-02330 ..... $8.50
64oz. ..... P/N 09-02331 ..... $10.75

GOLD CLASS WAX - Elegant, timeless, premium...Since its introduction, Meguiar's® Gold Class™ Liquid Wax has inspired automotive enthusiasts worldwide to pamper, condition and protect their treasured investments. Our unique and proprietary blend of conditioners nourish and enrich paint to create clear, deep reflections and brilliant shine. Carnauba and polymer protecting agents reflect damaging UV rays, remove fine swirls, and create strong, long-lasting protection to preserve your finish.

Liquid ..... P/N 09-02333 ..... $14.55
Paste P/N 09-02334. $16.95

GOLD CLASS™ RICH LEATHER LOTION, SPRAY & WIPES - Meguiar's® Pamper and protect your leather in one easy step with Meguiar's improved Gold Class Rich Leather Cleaner & Conditioner Lotion, Spray and Wipes. The enhanced, premium blend of moisturizers and nutrients - now with aloe for improved conditioning - quickly absorbs into leather for a natural, nongreasy finish. The convenient spray format is great for large areas or when working on perforated leather. The wipes feature 25 thick, textured wipes saturated with our enhanced, premium blend of moisturizers and nutrients deeply nourish fine leather. Each contains advanced sun-blocking agents and UV sunscreens to help defend against premature wear and fading.

Lotion ..... P/N 09-02346 ..... $7.65
Spray ..... P/N 09-02316 ..... $8.50
Wipes ..... P/N 09-02317 ..... $6.75

QUIK INTERIOR DETAILER - The fastest way to clean all interior surfaces. Use every time you wash or Quik Detail your paint to give your interior that "just detailed" look. In just 5 additional minutes, your entire interior will look sharp and smell fresh. Quickly and easily maintains the look and feel of interior plastics, vinyl, leather, rubber, metal and even audio/video equipment. The safe, high lubricity formula lifts off dust, ashes, dirt, grime, spills and fingerprints without build-up. And, unlike traditional protectants that leave an artificial greasy feeling, Quik Interior Detailer leaves your interior surfaces looking natural and revitalized.

Spray ..... P/N 09-02339 ..... $5.95
Wipes ..... P/N 09-02340 ..... $5.95

SUPREME SHINE PROTECTANT - With the addition of Supreme Shine Protectant to the Meguiar's® line-up, Meguiar's now has a protectant family that offers users the ability to choose from two different levels of shine. For those who love shine, Supreme Shine Protectant is the fastest and easiest way to create a hi-shine surface on vinyl, rubber, and plastic surfaces.

450ml ..... P/N 09-02349 ..... $6.50

NATURAL SHINE PROTECTANT - Maintain that "like new" look on dashboards, trim, tires and more. Natural Shine's complex formula includes mild cleaning agents that help remove daily dirt and grime and restore the original, natural finish. Includes UV blockers to help reduce the effects caused by the sun. P/N 09-02342 $4.85

MEGUIAR'S CLASSIC

DEEP CRYSTAL® CAR WASH - Contains special ingredients that extend the life of the suds. Dirt and grime are quickly loosened and removed while wax protection is preserved. For unparalleled performance, use with Meguiar's® Microfiber Wash Mitt. P/N 09-02337. $5.75

CLEANER WAX - Meguiar's® most versatile, one step wax specially formulated to produce eye-dazzling results on all finishes. Rich conditioning oils and legendary gentle cleaning ability make it an excellent choice for daily drivers exposed to the elements.

Liquid ..... P/N 09-02318 ..... $9.85
Paste ..... P/N 09-02319 ..... $8.95

DEEP CRYSTAL® SYSTEM CARNAUBA WAX - Creates a strong, protective barrier on your paint that locks in shine and gloss. Our long-lasting, tried-and-true formulation utilizes the highest grade of carnauba to protect all paint surfaces, including clear coats.16oz. ..... P/N 09-03426 $8.50

DEEP CRYSTAL® SYSTEM POLISH - A pure polish specially formulated for dark-colored cars. Clear coat safe, the formula creates a brilliant, high gloss finish by conditioning and nourishing paint through the replenishment of valuable oils. This makes dark colors darker and reflections deeper. It's that extra step necessary to create an amazing wet-look show car shine.

16oz. ..... P/N 09-02320 ..... $7.65

SMOOTH SURFACE® CLAY KIT - Removing above surface bonded contaminants and restoring a smooth surface to your paint finish is easily accomplished by using this Clay Kit. The non-abrasive clay bar safely, easily and instantly removes bonded contaminants as you rub it across the surface of your car using a mist & wipe product, like Meguiar's Quik Detailer® as a lubricant. Meguiar's Smooth Surface Clay Kit contains everything you need to create a smooth surface! Clay Kit includes: two 50 gram clay bars, individually wrapped & in a moisture-seal case, Quik Detailer for use as a clay lubricant, Cleaner Wax sample & Meguiar's Supreme Shine® Microfiber Towel.

Clay Kit ..... P/N 09-02338 ..... $22.80
Replacement Clay ..... P/N 09-03425 ..... $18.75

QUIK WAX® - Hi-performance, spray on carnauba protection offers dramatically deeper, darker reflections with increased gloss and shine. Just mist on and wipe off to wax your entire car (wet or dry) in minutes. For superior results during application and removal, we recommend using our Supreme Shine® Microfiber or Ultra Plush Super Terry. P/N 09-02321 $6.95

QUIK DETAILER® - Keeps a waxed car looking "just waxed". Clear coat safe, Meguiar's Quik Detailer removes harmful contaminants before they damage your finish. Use Quik Detailer right after your car is sprayed by a water sprinkler, hit by a bird dropping, or exposed to any other condition that ruins your "just waxed" appearance. Details a full sized car in less than 15 minutes!

16oz. ..... P/N 09-02322 ..... $7.45
32oz. ..... P/N 09-02323 ..... $8.95

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MEGUIAR'S CLASSIC

SWIRLX - Car Guys are constantly asking how to best remove swirl marks/spider webs/holograms to restore crystal clear reflections and have a flawless, show-car shine. SwirlX Swirl Remover effortlessly removes swirl marks while improving color and clarity. SwirlX can be applied by hand or with our DA Polisher, and is a non-abrasive formula that gently smoothes away micro-fine swirl marks so you can have a flawless finish on all paints.16oz. P/N 09-02357 $7.85

SCRATCHX® 2.0 - Keep ScratchX® 2.0 close at hand for quick removal of isolated paint scratches or blemishes … whenever they occur. Competitive products either hide the blemish or scratch the finish. Meguiar's® exclusive micro-abrasive system enables ScratchX 2.0 to remove paint blemishes fast while restoring brilliant high gloss. The new and improved formula can be applied by hand or with a DA.
P/N 09-00304 $8.85

COLORX® - Meguiar's® COLORX® is the tested and proven system to restore deep color and gloss from your oxidized or contaminated paint finish. Helps remove fine scratches and swirl marks too. Our polish and wax combination will dramatically revive brilliant color and add a long lasting protection that locks in the shine. For best results, apply with an Even-Coat Applicator and remove residue with a Supreme Shine® Microfiber or Ultra Plush Super Terry.
P/N 09-02343 $8.85

PLASTX CLEAR PLASTIC CLEANER & POLISH - This easy-to-use, rich gel formula quickly restores optical clarity to both rigid and flexible clear plastics. Cutting-edge advancements in Meguiar's® exclusive Microscopic Diminishing Abrasive™ Technology (MDAT) remove light oxidation, chemical degradation, surface contamination, stains and light surface scratches with ease. Special highly water resistant polymers provide long lasting durable protection to keep your clear plastics clear and beautiful longer. We recommend applying PlastX with a High Tech Applicator Pad or Ultra Plush Super Terry and using an Ultra Plush Super Terry or Supreme Shine® Microfiber for the final wipe-off.
P/N 09-02324 $7.75

CS

MEGUIARS ENDURANCE TIRE SPRAY

Rich, dark, high-gloss tire protection that lasts for weeks! Our advanced, long-lasting formula endures, even through washing and rain, and dries quickly eliminating overspray, runs and drips. Proprietary macropolymers and copolymers protect against UV damage and tire browning. The end result is that your tires stay black – with a rich, dark, high-gloss shine – for weeks longer than ordinary tire-shine products. See for yourself why Endurance is the enthusiast's favorite for high-gloss shine that lasts! Quantity: 24 ounces. Trigger Spray Bottle version.
P/N 09-03441 $8.70

MEGUIARS ENDURANCE AEROSOL TIRE SPRAY

Our best performing, longest lasting aerosol! Endurance is a significant advancement in tire protection technology. Proprietary macropolymers and copolymers protect against UV damage and tire browning. The end result is that your tires stay black – with a rich, dark, high-gloss shine – for weeks longer than ordinary tire-shine products. See for yourself why Endurance is the enthusiast's favorite for high-gloss shine that lasts! Quantity: 15 ounces.
P/N 09-03440 $9.50

SUPREME SHINE® MICROFIBER TOWEL

Meguiar's® Supreme Shine® is an incredibly plush microfiber towel for producing swirl free, mirror-like results. The thick, deep dual-sided microfiber pile absorbs two times more than traditional terry towels providing faster wipe off with less strokes.
Single.....P/N 09-02353.....$3.65
3-pk .....P/N 09-02354.....$6.50

MICROFIBER WASH MITT - Meguiar's® extra thick Microfiber Wash Mitt is the ultimate choice for show car perfect finishes. The clear coat safe Microfiber lifts and traps dirt and grime for a brilliant, swirl-free finish. The comfort-fit cuff and soft inner lining make this wash mitt a pleasure to use.
P/N 09-02355. $5.35

EVENCOAT™ MICROFIBER APPLICATOR PADS - Meguiar's® Even Coat™ microfiber applicator is the ultimate pad for swirl free, show car perfect results. Gentler than a foam pad, this applicator is ideal for ultra fine polishing and waxing. Its large, 5 inch surface area allows for faster polishing and waxing. P/N 09-02356 .....$4.35

MEGUIAR'S NXT GENERATION

NXT GENERATION® TECH WAX® 2.0 - NXT Generation® Tech Wax® 2.0 is a scientific breakthrough that introduces a new dimension of gloss and protection. This improved formula produces unbelievably deep, vibrant color and a dramatically clear wet-look. New Hydrophobic Polymer Technology™ provides relentless water beading and protection against oxidation, corrosion, UV rays and surface degradation. "Hydrophobic" means "water-fearing" and this new breakthrough technology builds such incredible protection and surface tension that water beads up and just glides off your paint finish, wash after wash! Liquid.....P/N 09-02328..... $18.65

AERO WASH WAX MOP KIT

Wash Wax Mop Kit: ALL you need to get started with the New Waterless Wash Wax Mop. The Wash Wax Mop was specifically designed for aircraft and is the only mop with two sides. One wet and one dry. Now you can waterless wash and wax with the reach and leverage of an extension pole. This allows you to clean a much larger area faster and with less effort, all from the safety of the ground. No ladder needed. Customers report time savings up to 50% over waterless hand application. Simply spray Wash Wax ALL on the Wet Side of the mop, wipe the aircraft with the wet side, flip the mop over, and wipe dry with the dry side. Includes: (1) Mop head with two (2) Microfiber Mop pads , (1) Deluxe Mop Pole, (1) Pack of four (4) Microfiber Mop pads, (1) Pack of four (4) Aero Towels (1) Gallon of Wash Wax ALL, (1) 16oz spray bottle, (1) 16oz Wash Wax ALL (Degreaser), (1) Aero Scrubber Pad with Handle and an Aero Bag to store and carry the kit.
Wash Wax Mop Kit ..... P/N 09-03502 ..... $189.55
Replacement Waterless Mop Pads (4) ..... P/N 09-03503 .....$29.95

PERMASHINE BUMPER AND CLADDING COAT TEXTURED PLASTIC RESTORER

PermaShine is designed to protect new textured plastics from fading and to restore the appearance of faded textured plastics. PermaShine will provide permanent protection and gloss enhancement for textured TPO plastics, and it sticks so well that a pressure washer cannot blow it off. PermaShine can be applied by spray gun or roller for added convenience. Features: • There is nothing else on the market that works like PermaShine - it is totally unique. • Permanently restores the appearance of faded textured plastics; not the quick-fading shine that silicone dressing provide. • PermaShine's adhesion to textured plastic is so good that it cannot be blasted off with a pressure washer.
11OZ Aerosol ..... P/N 09-02408..... $21.50
Quart ..... P/N 09-02407..... $59.95
Gallon..... P/N 09-02406..... $199.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FOAM CUSHIONING

Foam Cushioning is a dense* open cell foam that can be used for-glare shield padding, side panel padding, seat cushioning and for soundproofing. Meets FAR 25.853 burn requirements. Width is 48" and is sold by the linear yard. Available in 1/8" and 1/4" and thickness. *Density (pcf)+/-.5 pcf=5

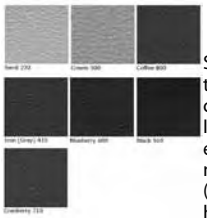
1/8" Foam cushioning ..... P/N 11-02062 ..... $51.50/yd
1/4" Foam cushioning ..... P/N 11-02063 ..... $59.75/yd

ABS PLASTIC SHEETS

ABS thermoplastic fire-rated sheet material can be used as a base material for making of glare shields and side panel backing. Easily cut, drill, saw, and grind this ABS sheeting. The plastic sheets have an excellent ductility and formability. Meets FAR 25.853 burn requirements. Smooth flat surface on one side and a matte finish on the other side. Color: Black. Sheet size is .063" x 23.5" x 54'.

P/N 11-02054 ..... $98.75

FAUX LEATHER UPHOLSTERY MATERIAL



Superior Panel Technology's offers the latest technology in Faux Leather without the leather cost.

It can be used for seats, wall panels and headliners. It meets FAR 23.853(a) flammability requirements. It provides superior wear resistance (100,000 cycles), stretchable (which is great for headliners), abrasion resistance and excellent tailorability.

Width is 54", weight is 28 oz/linear yard and it is available in seven colors. See additional image for color chart or download PDF below.

Pricing is per linear yard. Request the sample by color number. Burn certificate is included with each order.

Faux Upholstery			Color Samples		
Color	Part No.	Price	Color	Part No.	Price
Sand 220	11-10641	$42.00	Sand 220	11-11140	FREE
Cream 500	11-10651	$45.75	Cream 500	11-11143	FREE
Coffee 800	11-10649	$42.00	Coffee 800	11-11141	FREE
Iron (Gray) 410	11-10638	$45.75	Iron (Gray) 410	11-11145	FREE
Blueberry 600	11-10642	$42.00	Blueberry 600	11-11146	FREE
Onyx Black 910	11-10656	$45.75	Onyx Black 910	11-11142	FREE
Cranberry 710	11-10652	$44.80	Cranberry 710	11-11144	FREE

COLOR-BOND LEATHER, VINYL & HARD PLASTIC REFINISHER

Color-Bond restores or changes the color of leather, vinyl, ABS plastic, PVC, polycarbonate, acrylic, fiberglass, lexan and thermal plastic urethane permanently. It is dry to the touch in 45 seconds and fully bonded in 10 minutes. It will not crack, flake or peel & gives complete grain simulation. You can change color over and over and never obscure the grain or affect the hand. It is now OEM approved by the Ford Motor Company. After 3-1/2 years of testing, the specification that Color-Bond passed is the first of its kind and is approved for worldwide use. Color-Bond will be distributed to the 5,200 Ford Quality Service Parts dealers of North America. It will also be used for repair of instrument panels, door panels and seats in all of the assemble plants. Color-Bond is excellent for restoration of aircraft seats, side panels, glare shields, and other items. Aircraft Spruce & Specialty Co. has been appointed as the aviation distributor for Color-Bond.

Color	Size	Part No.	Price
#3 Eggshell White	6 oz. Spray	13-01496	$14.75
#106 Black	12 oz. Spray	13-01495	$14.95
#108 Prairie Tan	12 oz. Spray	13-01497	$12.75
#105 White	12 oz. Spray	13-01499	$14.75
#107 Gray	12 oz. Spray	13-01498	$13.65

Molecubond color chart ..... P/N 09-00327 ..... $3.95

The color chart can be viewed on our website at:
www.aircraftspruce.com

GRACO HVLP SPRAY SYSTEMS

Virtually eliminates mist. Requires less maintenance. Blows less heat up the stack. Uses up to 50% less material. Delivers better pattern control. Reduces overspray up to 90% Eliminates high-pressure "flop" and tiger stripes.

GTS-3800 HVLP SPRAYER

The GTS-3800 is highly productive for nearly all fine finish applications. Easily spray stains, lacquers, oils, enamels, urethanes and automotive finishes. Plus, it atomizes many water-based latex and acrylic coatings, multi-color and other higher viscosity coatings.

- Turbine Stages – 3
- Turbine Air Working Pressure – 6 psi (.414 bar, 41.4 kPa) max.
- Turbine Air Outlet Flow Rate – 80 cfm (2265 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose Length – Standard units incl. 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Electrical Rating – 12A at 120 VAC
- Weight: Complete – 34 lb
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15780 ..... $954.00

GTS-4900 HVLP SPRAYER

Our most powerful and versatile sprayer offers everything you need on the job for high productivity. This unit is loaded with features and can spray the broadest range of materials.

- Turbine Stages – 4
- Weight: Complete – 39 lb
- Turbine Air Working Pressure – 8 psi (.552 bar, 55.2 kPa) max.
- Turbine Air Outlet Flow Rate – 82 cfm (2321 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3, #4 and #5
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose w/Quick disconnects – Standard units include 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 12 AWG, 3 wire, 15 ft (4.6 m)
- Electrical Rating – 14A at 120 VAC
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15950 ..... $1,652.00

GRACO ACCESSORIES

DESCRIPTION	P/N	PRICE
30 ft. Replacement Hose	12-00016	$92.25
Superflex Hose 54"	12-74660	$32.75

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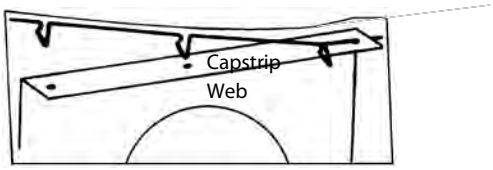
MARTIN FABRIC CLIPS



Used to secure fabric to metal ribs in wings and control surfaces. Replaces rib-stitch cord or P-K screws. Provides a more secure and streamlined installation. Drastically reduces covering time. FAA-approved for aircraft listed. Easily adapts to homebuilts with metal ribs. Spacing between clips, 3". Spacing may be reduced to 1-1/2" on high-performance aircraft by using 2 wires, with clips inserted in alternate holes that are spaced 1-1/2" apart. Fabricated from stainless steel wire. Supplied in 25-ft. continuous coils.
NOTE: FAA Approved for some aircraft. Please see our website for complete approval list.

25-Ft. Coil ..... P/N 09-19400 ..... $15.50

Aircraft Model	STC No.	Part No.	Feet Req'd.
Aeronca-Champion	SA150S0	09-19500	225
Piper — All Models	SA126S0	09-19600	175-250
Stinson	SA615S0	09-19700	175
Taylorcraft	Original Equipment	09-19800	225

INSTALLATION KITS

All install kits $38.95. No clips are included. Order separately.
*If clips are used to secure fabric on controls, add 50 ft.

CESSNA-TYPE FABRIC CLIPS

Individual spring steel clips used to attach fabric to metal ribs. Eliminates rib stitching.
5% Discount on purchase of 100
P/N 09-19900 ..... $0.79

TAC RAGS

Tac Rags pick up dust like a magnet. Use Tac Rags in final cleaning or dusting of surface before applying enamel, lacquer or synthetic paints. Wipe surface gently to remove all dust, lint and fine sand particles from metal, wood or plastic surfaces. Tac Rags are anti-static, epoxy compatible, and remain soft and tacky indefinitely. Individually packaged.Size: 18" x 36".
P/N 09-20000 ..... $0.75 ea. $8.10/Dzn

3M™ FINE-LINE PAINT TAPE

This 3M™ tape is particularly suitable for pin striping, multicolor and other custom painting applications. It is a thin, conformable green polypropylene film tape with a special finish that resists paint runoff. The adhesive adheres instantly and offers good holding power, resists lifting and curling. Stretchable and easy to handle. Provides an extremely fine color-line separation for decorative painting of aircraft. Scotch No. 218.

1/8" x 60 Yds. ..... P/N 09-20200 ..... $20.65
1/4" x 60 Yds. ..... P/N 09-20300 ..... $9.95
3/8" x 60 Yds. ..... P/N 09-20350 ..... $25.50
1/2" x 60 Yds. ..... P/N 09-20400 ..... $11.85
3/4" x 60 Yds. ..... P/N 09-20500 ..... $15.50
Less 10% on 6 Rolls (Assorted) • Less 15% on 12 Rolls (Assorted)

WOOD BRUSHES

Natural, undyed bristle with smooth, unpainted wood or polyethyle handles. Unaffected by paint, dopes, thinners or solvents.

Brush Width	Part Number	Price Each	Brush Width	Part Number	Price Each
1/2"	09-21100	$0.27	2-1/2"	09-38825	$0.60
1"	09-21200	$0.43	3"	09-38803	$0.85
2"	09-21300	$0.59	4"	09-38804	$1.95
Discount: Less 10% on 50, 15% on 100 (per size)					

ACID OR GLUE BRUSHES

Horse hair with metal handle.
#1- 3/8" Wide ..... P/N 09-21400 ..... $0.29 ea ..... $3.65/dz.
#2- 1/2" Wide ..... P/N 09-21500 ..... $0.42 ea ..... $3.65/dz.

DOLLAR PATCHES

Grade B fabric patches for quick repairs on Grade B & Dacron covering. Smooth edge, 2.5" dia. Also available in Dacron which are more durable & less noticeable on aircraft exterior. Less 10% For 12 or More.

Grade A cotton patches ..... P/N 09-17700 ..... $1.50/ea
Dacron Dollar Patches ..... P/N 09-17705 ..... $1.50/ea
Ceconite C101 ..... P/N 09-00162 ..... $1.50/ea.
Ceconite C102 ..... P/N 09-00163 ..... $1.50/ea.
PF P-103 Med. ..... P/N 09-18750 ..... $1.50/ea.
P99 Heavy Duty ..... P/N 09-00164 ..... $1.50/ea.

RIB LACING & SEWING NEEDLES

3" ..... Curved ..... Needle 3C ..... P/N 09-18705 ..... $2.30/ea
6" ..... Curved ..... Needle 6C ..... P/N 09-18710 ..... $2.09/ea
12" ..... Curved Tip ..... Needle 12C ..... P/N 09-18720 ..... $21.40/ea
12" ..... Straight ..... Needle 12 ..... P/N 09-18725 ..... $3.85/ea
18" ..... Curved Tip ..... Needle 18C ..... P/N 09-18730 ..... $22.15/ea
Needle Assortment includes 1 each of the following: 3" curved, 6" curved, 12" curved, 12" straight, 18" straight.
P/N 09-18735 ..... $39.25

RIB STITCH NEEDLES

Made from the highest quality steel. Heat treated, nickel plated.

2-1/4" ..... Curved ..... 18 Gauge ..... P/N 09-18300 ..... $1.15/ea
4" ..... Straight ..... 15 Gauge ..... P/N 09-18400 ..... $1.39/ea
10" ..... Straight ..... 13 Gauge ..... P/N 09-18500 ..... $3.95/ea
14" ..... Straight ..... 13 Gauge ..... P/N 09-18600 ..... $4.75/ea
18" ..... Straight ..... 12 Gauge ..... P/N 09-18700 ..... $9.90/ea

"T" HEAD PINS

Used to hold fabric in place temporarily in covering operation.
Plated steel, 1-1/2" L. 100 Pins P/N 09-18850 .... $7.50

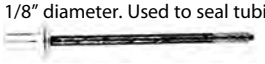
SCREWS

Used on some aircraft models to attach fabric to metal wing ribs and empennage ribs instead of rib lacing. Truss-head, type "A" self-tapping sheet metal screws. Size #4 x 1/4".

Stainless Steel, Phillips Head ..... P/N T4X4 ..... $0.03/ea
Stainless Steel Type A, Phillips ..... P/N 4RX1/2SS $0.04/ea
Stainless Steel Type A, Phillips ..... P/N T4X6 ..... $0.04/ea

AD-41H CLOSED-END BLIND POP RIVET

1/8" diameter. Used to seal tubing vent holes.



P/N 04-01496 ..... $0.12/ea

BLIND RIVETS

Use these 1/8" dia. "Pop" rivets to attach fabric to the ribs on Champion/Bellanca aircraft. 100 Rivets. P/N 09-18900 ..... $22.35

WASHERS

Aluminum washers may be use in place of original plastic washers under screws and pop rivets to attach fabric to metal wing or empennage ribs.

Plastic, 1/8" I.D. x 1/2" OD
P/N 09-19000 ..... $29.50
Aluminum, 0.128" ID x 1/2" OD x 0.016
P/N 09-19100 ..... $7.30

DRAIN GROMMETS

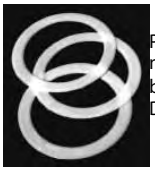
Manufactured from virgin cellulose acetate butyrate resin.

Grommet Type	Part No.	O.D.	I.D.	Price each
Flat	AN231-1	1-1/4"	3/8"	$0.19
Flat	AN231-2	3/4"	5/16"	$0.18

Grommet Type	Part No.	O.D.	I.D.	Price each
Seaplane*	AN231-4	1-1/8"	—	$0.18
Aluminum	09-19110	3/4"	1/4"	--

*Depressed center — LESS 15% ON QTY. OF 100 (per Part No.)

INSPECTION RINGS



Plastic rings, 4-5/8" O.D. x 3-1/2" I.D. x .050" thick, molded from virgin cellulose acetate butyrate resin. To be cemented to fabric as inspection plate retainer. 20% Discount on 100 or more.
P/N 09-19200 ..... $0.55 ea

INSPECTION RING PATCHES

Glued over inspection rings to prevent accidental removal.
P/N 09-18750 ..... $1.50 ea

INSPECTION PLATES

DOMED - Concave aluminum snap-type plate has single clip riveted across full diameter. Snaps to the ring at 2 contact points. Plate is 4.75" dia.
P/N 09-19300 ..... $1.95ea $165.75/100

RECESSED - Recessed center and flanged-edge design will not creep off center due to vibration in propwash areas. 4-3/4" dia. x .020 aluminum. Will not twist or vibrate. P/N 09-18740 ..... $5.50 ea

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PREVAL SPRAY GUN

Sprays paints, primers, gel coats, lubricating oils, cleaners, zinc chromate, etc. Perfect color matches in minutes. No wires, no hoses-portable and disposable. Sprays up to 16 ounces of any liquid thinned to the same consistency as for heavy spray equipment.

#267 Complete Set ..... P/N 09-00339 ..... $8.25
#268 Power Unit ..... P/N 09-00340 ..... $5.95
#269 Product Container ..... P/N 09-00341 ..... $2.75

FLIP TOP POURING LID FOR PAINT CAN

Tight seal for extended storing, controlled pouring, wide opening for easy dipping, wiping bar, and brush rest. Fits metal cans only.

P/N 09-03592 ..... $7.50

SUPER LID WITH SPOUT FOR 1 GALLON CONTAINERS

This two piece aqua lid has a wide mouth spout for easy pouring. Works with just about any 1 gallon paint can.

P/N 09-03784 ..... $5.85

55 GALLON LATCHING DRUM LIDS

Unique design makes it easier to access drum, minimize vapor emissions and meet haz-waste regulations. For 55-gal. New & Reconditioned Open-head Steel Drums. Hinged with One Hand Latch. Latching handle easily opens and closes with one hand. Nitrile gasket and locking mechanism seal lid to help reduce vapor emissions and keep drum contents dry and secure. Easy-access lid closes securely to help you meet haz-waste regs. Hinge stops keep funnel lid upright when open. Durable, chemical-resistant powder coat helps ensure long service life. Lockable latch helps prevent unauthorized access. Hinge pin is made for easy lid removal without loosening band around drum. Multiple lid color options allow you to segregate drums for safe, compliant filling.

Black ..... P/N 08-07708 ..... $289.00
Red ..... P/N 08-07709 ..... $289.00
Yellow ..... P/N 08-07710 ..... $289.00

POURING PAL

Just Snap It On! One size fits pint, quart, gallon and 4 liter paint cans. Snaps onto inner rim of paint can to keep paint out of the gutter and ensure a goo seal after use. P/N 09-22210 ..... $0.75

PAINT STIRRING PADDLE

P/N 09-22205 ..... $0.17

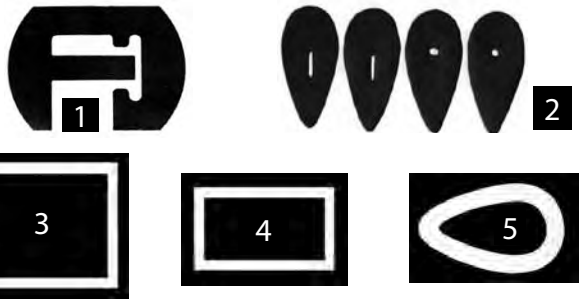
AIRCRAFT SPRUCE PAINT CAN OPENER

P/N 09-02063 ..... $0.85

EXTEND-A-LUBE SUPER STRAWS (PACKAGE OF 3)

Super Straws reduce or eliminate messes from overspray. The high grade plastic is extremely chemical resistant and can be used with various lubricants, harsh degreasers, and compressed gases. Super Straws increase the range and utility of aerosol products by using a 16" high grade plastic tube to access those hard to reach places. Easily cut to any length using a knife or scissors, Extend-A-Lube Super Straws are proudly manufactured, packaged, and sold in the U.S.A.!

P/N 09-02398 ..... $2.95



PIPER INSPECTION FRAMES

Front & Rear Strut Opening Reinforcements - Set of 4
P/N 09-00334 ..... $8.50
Naugahyde Cable Seal Kit - 2 slotted fuselage and 2 aileron punched cable seals ..... Set of 4 ..... P/N 09-00335 ..... $7.50
Front Trim Yoke Inspection Frame ..... Set of 2 ..... P/N 09-00336 ..... $5.95
Underwing Inspection Ring Grommet ..... Set of 2 ..... P/N 09-00337 ..... $7.50
Tear Drop Reinforcement ..... Set of 2 ..... P/N 09-00338 ..... $10.95

POLYESTER FLANNEL

45" width. For leading edge ..... P/N 09-01750 ..... $7.90/yd

SCOTCH-BRITE™ ULTRA FINE HAND PAD 7448

Use for cleaning, scuffing, deburring and finishing by hand with water or solvents. Will never rust.

P/N 09-01753 ..... $1.15/ea

PAINT STRAINERS

Cone type strainer. Medium mesh (48x36), for filtering all pigmented finishes.

P/N 09-22200 ..... $0.20ea.

3M™ PARTICULATE RESPIRATORS

P/N 09-01496

P/N 09-01497

Helps provide worker protection against certain non-oil based particles. Comfortable, easy to use, and promotes greater worker acceptance increasing wear time. Features 3M's patented filter media, nose foam, and adjustable noseclip that helps provide a secure seal and helps reduce eyewear fogging. Workplace applications: woodworking, grinding, sanding, sweeping, bagging, other dusty operations.

Description	Part No.	Price
8210 Standard dust mask	09-01496	$0.95
Vented dusk mask	09-01497	$2.40

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AIRCRAFT SPRAY COATINGS

All Tempo spray products feature the exclusive adjustable Fanspray valve which offers a professional spray pattern so anyone can "paint like a pro". The extra-width pattern evenly coats about 3 times the area with each pass compared with an ordinary spray valve. Packaged in 11 oz. to 16 oz. cans, depending on product.

Discount: 10% on 6 cans, 15% on 12 cans, 25% on 24 cans. (May be assorted.)

ULTRA-HIGH TEMPERATURE PAINTS

Exceptional durability up to 1200°F. Will not burn off, chip or peel when properly applied. No primer required. Ideal for exhaust stacks. Ultra-High Temperature paints air-dry in minutes but require curing at temperatures over 650°F.

- White #13-1
- Black #13-2
- Aluminum #13-8.....$8.75

TEMPO MAINTENANCE & SPECIALTY PRODUCTS

Fluorescent Paint (Red/Orange) — Up to 4 times brighter than other colors. Ideal for aircraft, boat - wherever visibility is vital. For best results, use over light colored base.
#18-1301.....$7.85/ea.

Chrome Paint — restores new chrome appearance to chromed surfaces. #20-199.....$8.75/ea.

Scratch Filler Primer — Ideal for filling nicks, scratches, and minor surface imperfections. They dry fast, are sandable, and provide a smooth uniform surface for top coats.
#7-3500 - Red Oxide.....$5.20/ea.
#7-4500 - Platinum Gray.....$7.90/ea.

PREMIUM SELF-ETCHING PRIMER

Etches and primes in one easy step. Can be used under all today's automotive finishes. Perfect for spot repairs. Creates superior adhesion on most plastics, fiberglass, bare steel, aluminum and stainless steel. Color: Green. 12oz. Spray Can P/N 09-02099.....$9.50

CAN-GUN

Can-Gun is an aerosol spray can trigger handle which makes painting, cleaning, and lubricating jobs safer and easier. The user-friendly form-fit handle and trigger eliminates finger fatigue and provides the user with accurate control over the amount, speed, and direction of spray. The built-in safety shield insures no more messy hands or fingers. Sprays virtually all spray paints, lacquers, polishes, cleaners, lubricants, sealers, and adhesives and Can-Gun fits most spray cans. P/N 09-14760.....$1.85 ea.

EPOXY PROPELLER COATING

Extends blade life. Tempo's Epoxy Propeller Coating is formulated with the extra adhesion and abrasion resistance needed to protect propellers from corrosion and wear. Compared to standard enamel and lacquer paints, our epoxy formula stays on the blade more flying hours; hence, with regular use, this formula can extend blade life.

Flat Black ..... P/N 09-00982 ..... $7.50
Med. Gray ..... P/N 09-00983 ..... $7.50
(Matches Hartzell OE Gray)
White ..... P/N 09-00992 ..... $7.50

KRYLON AEROSOL HIGH HEAT PAINT

Krylon High Heat & Radiator Paint is ideal for mufflers, radiators, and engine blocks. Withstands temperatures to 1200F. Guards against rust. Available in three colors. 12 oz. aerosol cans. 12 oz. Aersol.

Aluminum .....P/N 15-05467 ..... $12.25
White .....P/N 15-08254 ..... $12.50
Black .....P/N 15-08255 ..... $12.25

AIRCRAFT ENAMEL

Excellent adhesion to aluminum and steel

Tempo's Aircraft Enamel has been especially formulated to adhere to aluminum and steel; providing excellent corrosion resistance. Recommended applications are all interior and exterior aluminum and steel surfaces, including wheels, landing gear and inside door hatches. For propeller blades, we recommend Epoxy Propeller Coating.
Neutral Gray Enamel Primer #750.....$6.95/ea.

09-00985 .....Black..... $6.95
09-00989 .....Gloss White..... $6.95
09-00987 .....Medium Gray..... $6.95
09-02070 .....Flat Black..... $6.95
09-00988 .....Flat White..... $6.95

TEMPO ENGINE ENAMEL

Resists heat to 500°F . Tempo's Aircraft Engine enamel withstands the high heat demands of aircraft engines. This modified chain-stop alkyd enamel formula has excellent corrosion and fuel resistance.

All Tempo spray products feature the exclusive adjustable Fanspray valve which offers a professional spray pattern so anyone can "paint like a pro". The extra-width pattern evenly coats about 3 times the area with each pass compared with an ordinary spray valve. Packaged in 11 oz. to 16 oz. cans, depending on product.

WARNING: POSSIBLE LINK BETWEEN CHROMATE PIGMENTS AND LUNG CANCER

Several independent technical studies have suggested that excessive inhalation of zinc chromate dust may cause lung cancer. If conditions are such that this limit may be exceeded, additional protective equipment is required. A respirator that has a NIOSH/MESA approval TC-23C. See catalog for respirators that meet this requirement.

Universal Gray .....P/N 09-01268.....$6.95
Lyc. Gray .....P/N 219 .....$6.95
Olds Cont. Gold.....P/N 239 .....$6.95
Gloss Black.....P/N 09-00995.....$6.95
Chevy Orange Engine.....P/N 09-02405.....$7.50

AIRCRAFT LACQUER

Dries in under 15 minutes

Tempo's Aircraft Lacquer is ideal when a very fast dry is required. This blended nitrocellulose lacquer formula can be applied to all interior and exterior aluminum and steel surfaces, including wheels, landing gear and inside door hatches. When additional corrosion protection is required, we recommend Tempo Aircraft Enamel.

Clear ..... P/N 809 ..... $6.95
Blk Acrylic..... P/N 09-01032 ..... $7.50

ZINC PHOSPHATE PRIMERS

Maximum adhesion to bare aluminum and steel

Tempo's Zinc Phosphate Primers are recommended for priming bare metal. These primers provide maximum bonding to bare aluminum and steel. Tempo's Primers have been the workhorse in the aviation industry for many years.

The A-701 Yellow and A-702 Green Zinc Phosphate Primers meet the performance standards outlined in Federal Specification T-P-1757A. They also exceed the 800 hours of salt spray fog test (ASTM #B117). A-701 will replace A-901 Yellow and A-702 will replace A-902 Green.

Yellow (12oz.) A-701.....P/N 09-02128.....$7.95
Green (12oz.) A-702.....P/N 09-02127.....$7.95

SUPERFLITE AIRCRAFT ENGINE ENAMELS

Superflite engine enamels are fast-drying enamels developed specifically for air-cooled aircraft engines used in light duty aviation industries. The Superflite enamels feature superior adhesion, heat resistance, and a gloss finish. Cure Schedule: Dry to touch: 15 minutes, Dry to handle: 60 minutes Dry through: 24 hours To recoat: Before 60 minutes , or after 72 hours Benefits: Topcoat - Air dry or low temperature cure, For use on bare metal or painted surfaces Specifications: Shelf Life: 12 months at recommended storage temperatures, Heat Resistance: Up to 400 degree F.

Lyc. Grey Paint Quart ..... P/N 09-02558 ..... $27.65
Lyc. Grey Paint Spray ..... P/N 09-02556 ..... $10.65
TCM Gold Paint Gallon ..... P/N 09-02560 ..... $99.50
TCM Gold Paint Quart ..... P/N 09-02557 ..... $25.50
TCM Gold Paint Spray ..... P/N 09-02550 ..... $9.80
Gloss Paint Black Quart ..... P/N 09-02559 ..... $25.60

PREKOTE SURFACE PRETREATMENT

PreKote® Surface Pretreatment from Pantheon Chemical, is a non-chromated surface pretreatment utilizing a safe, hazard-free technology that is flying on over 1,500 United States Air Force aircraft. PreKote® offers superior adhesion, improved paint flexibility, and advanced corrosion protection on painted surfaces, relative to traditional chromate and conversion pretreatments (such as alodine). PreKote® has passed stringent testing by the U.S. Department of Defense, the Boeing Company and other coating industry leaders. By eliminating the need for chromated conversion coatings (such as alodine), acid etches, solvent washes and other toxic processes, PreKote® can reduce paint preparation time and costs by up to 40%. PreKote® can be used on a wide range of surfaces including aluminum, steel, magnesium, titanium, CRES, galvanized surfaces, composite and plastic surfaces. Consistent, high performance results are achieved with a variety of paints and primers. PreKote® is non-toxic, non-corrosive, non-flammable, CFC free, ODS free, odor free, and readily biodegradable upon disposal. FEATURES: • Easy & safe process • Quantified superior results • Immediate cost reductions • Reduces hazardous waste • Decreases material, labor, and hazardous handling costs • Results in a high-performing surface finishes • No short and long term health risks.

Quart .....P/N 09-00825 ..... $26.85 Gallon ..... P/N 09-00826 ..... $59.75
5 Gallon ...P/N 09-00827 .....$279.00 55 Gallon ... P/N 09-00828 .....$1,989.00
Prekote Large area repair kit..... P/N 09-00829..... $89.75

ALUMINUM PREPAINT PRODUCTS

ALUMIPREP USED FIRST MAKES THE PAINT FINISH LAST!

Use on unpainted aluminum aircraft, truck trailers, house trailers, boats, garage doors, outdoor furniture, etc.

FLAMMABLE ALUMIPREP NO. 33 – Use to clean, brighten and transform badly corroded aluminum to its natural appearance. Covers 400 sq.ft. per quart. HAZARDOUS

Qt. ..... P/N 09-01621 ..... $17.85
Gal..... P/N 09-01620 ..... $39.75

ALODINE NO. 1001 – An invisible coat to provide in-depth corrosion proofing to the brightened aluminum surface and act as a firm barrier against the elements and continued corrosion. Covers 250 sq.ft. per quart.

Qt ..... P/N 09-01628 ..... $24.95
Gal..... P/N 09-01629 ..... $43.85

METAL PREP NO. 79 – A non-flammable multi-purpose phosphoric acid based cleaner and prepaint conditioner for most metals. Leaves the surface chemically clean and corrosion free. Can be used to deep clean and etch a metal surface prior to paint or to prepare a surface for a subsequent chemical coating like that produced by GALVAPREP® SG on zinc and steel or ALODINE® 1201 on aluminum surfaces. HAZARDOUS.

Qt..... P/N 09-01625 ..... $24.85
Gal. ..... P/N 09-01624 ..... $38.50

ALODINE NO. 1201 – After precleaning with Alumiprep 33 or Metal Prep 79, rinse with water. Apply Alodine without dilution by brushing or swabbing with sponge. Rinse with water and surface is ready for paint. This is a visible coating which leaves the surface with a golden coloration. The alodized surface provides protection against weather and firmly bonds paint. One quart treats about 200 sq. ft. HAZARDOUS.

Qt. ..... P/N 09-01619 ..... $25.50
Gal..... P/N 09-01618 ..... $41.85

ALODINE TOUCH-N-PREP 1132

Touch-N-Prep Alodine 1132 no-rinse conversion coating effectively phosphates most metals including aluminum, ferrous and galvanized substrates. Doesn't require rinsing, and can be air dried or force dried with hot air or an infra-red lamp. High density acrylic tip of the Touch-N-Prep applicator can be modified with a single edge razor blade to form any shape. The application method controls the amount of coating applied to the surface. Covers 20 sq.ft. P/N 09-01630 ..... $98.65

AKZO FAST DRYING INTERIOR EPOXY PRIMER

AKZO interior epoxy primer #463.12-8 is a chemically cured 2-component epoxy primer designed to provide maximum protection from various chemicals, hydraulic fluids, aviation fuels, hydraulic fluids, and corrosive causing media. Drying time to touch is 15 minutes and to recoat is 1-24 hrs. Shelf life: 2yrs, Color: Green. Used extensively in military and aerospace applications and popular with aircraft builders. Uses 1 gallon of primer and 1 gallon of catalyst.

2 gal. kit ..... P/N 09-24735 ..... $207.95
TR-19 Thinner ..... P/N 09-00439 ..... $97.80

RANDOLPH W-2248 EP-420W EPIBOND EPOXY PRIMER (WHITE)

FLAMMABLE

This white heavy duty chemical & solvent resistant amine cured primer is fast drying and corrosion inhibiting. Can be applied & cured to temps down to 35°F. Mixing ratio is 2 parts base primer: 1 part EP-430 Catalyst. Order in kits.

Product	Part No.	Quart Price	Gallon Part No.	Price
W2248/EP420 Primer White kit	09-00573	$83.50	09-00574	$293.95
Epoxy White base	09-00564	$48.35	09-00565	$165.40
Rand E-500 Reducer	09-00566	$15.00	09-00567	$58.80
Rand EP430 Catalyst (pt)(qt)	09-00570	$20.65	09-00571	$35.00

RANDOLPH B-6433 RAND-O-PLATE EPOXY PRIMER (DARK GREEN)

FLAMMABLE

This green primer is solvent resistant, amine cured, fast drying and corrosion inhibiting. Can be applied & cured to temperatures down to 35°F. Mixing ration is 2 parts base primer: 1 part EP-430 Catalyst. Order in kits.

Product	Quart Part No.	Gallon Price	Part No.	Price
Rand B6433 PrimerGreen kit	09-00575	$83.50	09-00576	$292.95
Epoxy Green base	09-00568	$48.35	09-00569	$165.40
Rand E-500 Reducer	09-00566	$15.00	09-00567	$58.80
Rand EP430 Catalyst (pt)(qt)	09-00570	$20.65	09-00571	$35.00

RANDOLPH EPOXY VARNISH EV-400/EV-410

An excellent clear gloss epoxy varnish for interior and exterior use. It provides superior weather durability and excellent chemical and solvent resistance. Can be used over a one component varnish primer if desired. Mixing ratio is 2 parts base varnish: 1 part EV-410 Catalyst. Order in kits.

Quart Kit (yields 2.5 qts) Incl. EV-410 Catalyst & E-500 Thinner P/N 09-00670 ..... $59.40
Gallon Kit (yields 2.5gal) - Incl. EV-410 Catalyst & E-500 Thinner P/N 09-00671 ..... $198.00

FLAMMABLE

Base: Quart ..... 09-00666 ..... $43.25
Gallon..... 09-00667 ..... $146.70
Catalyst: Pint..... 09-00668 ..... $18.25
Quart ..... 09-00669 ..... $30.55
E-500 thinner (Reduce 50%)
Quart ..... 09-00566 ..... $15.00
Gallon..... 09-00567 ..... $58.80

RANDOLPH EPOXY ACCELERATOR EX-501

FLAMMABLE

A chemical curing accelerator for use in W-2248 EP-420W Epibond Epoxy Primer, B-6433 EP-420G Rand-O-Plate Epoxy Primer, and EV-400 Epoxy Varnish according to direction on base component label. Reduces polymerization time, not solvent evaporation.

1/2 Pint ..... P/N 09-04650 ..... $12.00

RANDOLPH C-2210 PAINT SURFACE CLEANER

A mild solvent blend formulated to remove oil, silicone, wax, and other contaminants from all metal surfaces before priming. Also removed tape gum from painted surfaces and acrylic windshield materials.

Qt ..... P/N 09-40810 ..... $11.95
Gal..... P/N 09-40820 ..... $45.00

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STEWART SYSTEMS EVERSHIELD CERAMIC SURFACE TREATMENT

An Easy-To-Apply Glass-Like Finish With Many Incredible Protective Properties For Almost Any Aircraft Surface.
In tests it resists blow-torch heat (yes, blow-torch flame) above 2000°F It is impervious to virtually any chemical. It is excellent for hardness, flexibility, impact and scratch resistance, adhesion, and corrosion protection. On any aircraft, EverShield has applications from nose cone to tail cone. Wiped on a prop, this incredible film sheds bugs, pebbles, salt spray, whatever. On an exhaust, it seals the metal from corrosion and by refraction reduces heat transmissions to cowling and elsewhere. On leading edges bugs slide off. Over the entire plane, the slick surface fortifies the boundary layer, reduces drag. It is non-hazardous (like all SS products). Cleans up with water (or solvents). Grips most any surface, from stainless steel, to plexiglass, to paint. EverShield is a true breakthrough miracle coating. There's nothing comparable available. Once you use it you'll continue to find a myriad of applications. Better give it a try soon. STEWART SYSTEMS EVERSHIELD is a two-component, ceramic clearcoat/chemical treatment system designed for Original Equipment Manufacturers (OEM) to protect the substrate over which it is applied from corrosion and oxidation. Will not yellow, chip, crack, or peel. If gouged or damaged, the finish will not experience creepage and is repairable. A low VOC and EPA compliant coating. Considered non-hazardous by EPA definitions and does not contain lead or chromates. Please follow local and state regulations in the proper use and disposal of this product.

Size	Part No.	Price
2 oz.	09-00465	$37.85
4 oz.	09-00466	$65.50
8 oz.	09-00467	$75.50

STEWART SYSTEMS WATERBASE STEEL CONVERSION COATING

A water-based product that eliminates rust. First, rust is converted to ferric iron, a black organic compound. Second, a coating of clear acrylic is formed over the coated area. The surface that remains after the transformation can be either left black or coated with Stewart Systems wide range of products for the desired outcome. Product tests have shown that it has extended the life of equipment or products for several more years after probable replacement. Can be used on all rusted surfaces. P/N 09-00482 ..... $45.75

STEWART SYSTEMS ALUMINUM ETCH / CLEANER

EkoEtch Aluminum Etch is a concentrated combination acid based detergent and degreaser. Removes scale, corrosion, light oil, processing fluids and brightens aluminum. A non-hazardous, water reducible and non-flammable. Use it to prepare both old and new aluminum surfaces before applying Stewart Systems Primer/ Sealers. P/N 09-00473 ..... $26.50

STEWART SYSTEMS EKOBOND

Stewart Systems EkoBond EkoBond is a revolutionary water based cement for the application of fabric. EkoBond has extreme bond strength for fabric to fabric and fabric to non-fabric surfaces in both peel and shear tests. EkoBond is very user friendly since it has very little odor and can be used in a closed shop with no health or fire hazards. EkoBond dries quickly and will not attack primers or enamel paints. EkoBond is non-flammable and environmentally friendly.

Quart ..... P/N 09-41195 ..... $58.75
Gallon ..... P/N 09-41200 ..... $177.75

EKOBOND LINEN - For the look of old linen with the convenience of Dacron. EkoBond linen will make the fabric look just like old cotton, while giving you not only the antique look, but also the strength and durability of EkoBond. Quart ..... P/N 09-03064 ..... $56.75
Gallon ..... P/N 09-03065 ..... $180.75

STEWART SYSTEMS EKOFILL

Part of the Stewart Aircraft Covering System, Stewart Systems EkoFill seals the fabric, provides UV protection, fills the weave and acts as a primer for application of EkoPoly. On fabric airplanes, all covering, rib stitching and tapes are complete and the fabric has been cleaned with EkoClean before applying EkoFill. EkoFill is used on Dacron/polyester fabric, glass cloth, gel coat and composite materials. It has excellent adhesion, superior high build properties and is an outstanding UV barrier on fabric and composite surfaces. EkoFill dry sands very easily with open coat sand paper. EkoFill is non-flammable, has little odor and is water cleanup. Attention: Cold weather warning for shipping: It is possible for product to freeze based on weather conditions.

Grey Quart ..... P/N 09-06700 ..... $54.75
Grey Gallon ..... P/N 09-06800 ..... $172.75

STEWART SYSTEMS EKOSTRIP

Stewart Systems EkoStrip is an environmentally safe paint stripper that can be sprayed, brushed or rolled on your painted surface. EkoStrip is not solvent borne and does not dry out and stop working overnight. In most cases the stripping action will take place in 2-4 hours. EkoStrip has no harsh odors, is not caustic and is biodegradable.

1 Gallon ..... P/N 09-03080 ..... $62.75
5 Gallon ..... P/N 09-03081 ..... $420.00

STEWART SYSTEMS EKOPOXY

Stewart Systems EkoPoxy Primer/Sealer is a high quality water based Epoxy primer for use on many substrates. Stewart Systems EkoPoxy can be used on interior and exterior surfaces where there is more chance of corrosion from the environment. Excellent adhesion to bare metals, resists flash rusting which can occur with latex based primers. Stewart Systems EkoPoxy has superior chemical resistance, is fast drying and mar resistant. Stewart Systems EkoPoxy is low in VOCs and compatible with a wide range of top coats including EkoPoly Top coat. Nonhazardous, nonflammable and water cleanup, Stewart Systems EkoPoxy is your best choice for Primer.

Quart White ..... P/N 09-03066 ..... $52.75
Quart Smoke Grey ..... P/N 09-03068 ..... $59.75
Quart Charcoal Grey ..... P/N 09-03070 ..... $58.75
Quart Green ..... P/N 09-03072 ..... $59.75
Gallon White ..... P/N 09-03067 ..... $189.95
Gallon Smoke Grey ..... P/N 09-03069 ..... $208.95
Gallon Charcoal Grey ..... P/N 09-03071 ..... $198.75
Gallon Green ..... P/N 09-03073 ..... $209.95

STEWART SYSTEMS EKOPRIME PRIMER/SEALER

Stewart Systems Primer Sealer is a high quality, water-based single component primer, not requiring any catalyzing agent. Performance obtained is equal or superior to that of two-component, catalyzed epoxy systems. Primer Sealer offers good coverage, excellent durability, and ease of application, as well as being a low VOC and EPA compliant coating. It is a low VOC (Volatile Organic Compound). high performance production coating. It is considered non-hazardous by EPA definitions and does not contain lead or chromates. The solid and semi-solid sludge produced in spraying and clean up can be flocculated; dried and sent to a "Class B" landfill. Check with your local and state regulations for proper handling.

Quart White ..... P/N 09-00464 ..... $38.50
Quart Smoke Grey ..... P/N 09-03074 ..... $41.85
Quart Charcoal Grey ..... P/N 09-03076 ..... $41.75
Quart Green ..... P/N 09-03078 ..... $41.75
Gallon White ..... P/N 09-00481 ..... $123.85
Gallon Smoke Grey ..... P/N 09-03075 ..... $128.75
Gallon Charcoal Grey ..... P/N 09-03077 ..... $125.75
Gallon Green ..... P/N 09-03079 ..... $128.80

STEWART SYSTEMS EKOCLEAN

EkoClean Heavy Duty Cleaner/Degreaser concentrate is used with the Stewart Covering System to clean fabric before application of EkoFill. For cleaning fabric, EkoClean is diluted 30-1 with water, and lightly applied with a spray bottle, and rinsed with clear water. EkoClean is a non-butyl, water soluble, concentrated degreaser and general purpose cleaner. In stronger concentrations EkoClean attacks grime, exhaust stains and grease spots from painted surfaces. EkoClean does not contain phosphates and is USDA approved. Quart ..... P/N 09-03089 ..... $14.85
Gallon ..... P/N 09-03090 ..... $61.85

STEWART SYSTEMS EKOSEAL E1800/E1850

E1800 - EkoSeal is a water dispersible top coat, offering outstanding coverage, durability and ease of application. EkoSeal is a low VOC, EPA compliant coating. Use on wood spars and plywood before installation of fabric. Wood sealer is resistant to UV yellowing in exterior applications and is also available in a satin finish. Size: 1 quart.

Quart Clear ..... P/N 09-03082 ..... $45.85
Quart Satin ..... P/N 09-03083 ..... $41.75

E-1850-EkoSeal Sanding Wood Sealer E1850 is a wood sealer with a sanding filler added to fill light voids and grain in wood products. After sanding, apply EkoSeal Wood Sealer or any other top coat. Size: 1 quart. Quart Clear ..... P/N 09-03084 ..... $48.50

STEWART SYSTEMS PROCEDURES 21 MANUAL

A complete written manual for the Stewart Systems Covering Process. It includes product application, painting instructions, continued airworthiness and more. Also contains many helpful hints for each step of the process.

P/N 09-03091 ..... $21.50

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

NUVITE POLISH - PROTECTANT SYSTEMS

NUGLAZE SUPER PAINT GLOSSER

Nuvite introduces NuGlaze to create a super high gloss "show quality" finish for paint in new or excellent condition, and it adds a U/V and sealant protection . It will put that final "wet-look" finish on good paint, and can be used as a final step for maximum gloss after using a drywash cleaner/polish such as Nuvite NuPower II. With regular NuGlaze use, a continuing surface barrier against most of the effects of airborne chemicals and ultraviolet radiation is created. Paint can be maintained in "new" condition longer and maintain the color balance intended by the manufacturer with regular use.

Bugs and normal soil remove easily from a NuGlaze surface, and the added gloss keeps the "new paint" look longer. NuGlaze is simple to use and avoids complicated setups and special application or buffing equipment. Proven techniques and continuing technology advancement from Nuvite have come together to produce NuGlaze - the best thing you can do to maintain and protect your near-new or "new-looking" paint.

1Gal.....09-01224..... $43.95
5Gal.....09-01225.....$197.95

NUVITE CITRI-CUT CLEANER

NuVite CitriCut is a citrus based airframe wetwash and wipe-down cleaner. Pleasant citrus smelling wet wash or wipe down cleaner that is especially friendly to the environment. Works great for standard wet washing with mops or scrub pads. When used as a wet wash, water sheets off, minimizing water spotting. CitriCut is also handy for hand debugging or hand wipe down without need for rinse -so there is no need for water or floor cleanup. Spray CitriCut at 1:8 from hand trigger sprayer for hand debugging or wipedown and wipe with terry towel until clean. Use a clean towel to buff up surface shine. No need to rinse surface. Supplied as concentrate—use 1:8 for hand wipe down or 1:16 in wet wash water.

P/ N 09-00584..... $12.95

NUVITE ONE-TIMER KITS

Clean & Polish in One Step!

Two quarts of Famous Nuvite NuPower II cleaner/polish. Will clean tough dirt & oil and give your paint a slick, shiny "New Paint" look and leave a protective coating against the sun's U/V damage. Includes three terry application towels and two special finishing gloss microfiber cloths. For Nuvite NuPower II details see Part No. 09-00581 & 09-00580. P/N 09-02026..... $59.50

Restore Your Paint to Look Great Again!

Two quarts of super Nuvite NuPol heavy-duty cleaner and paint restorer—will clean up a really "grimy one", removing paint surface oxidation to reveal the bright color paint you once had, and leave an amazing super shine with UV protection! Includes two special spun fiber application pads and three terry polishing cloths.

For Nuvite NuPol details see Part No. 09-00583 & 09-00582.

P/N 09-02027..... $57.85

NUVITE C-49 SUPERCLEANER

Nuvite C-49 SuperCleaner is the most versatile and effective cleaner you can buy when you want to clean fabrics, leather, carpet, plastics, laminates and even metals! In other words, for cleaning all types of surfaces generally found in commercial & private aviation, building or institutional interiors, RV, truck and marine interiors, or even home interiors!

P/N 09-02089.....$6.95

NUVITE SS9-3 CLEANER

Nuvite SS-9-3 is the championship-caliber answer to the need for an effective and safe all-purpose liquid alkaline cleaner. It will clean the toughest of underbelly grease, oils and fluid leakage at full strength, or can be diluted to 1:12 to make an easy-to-use debugger and whole-airframe wipe-down fluid that leaves a beautiful squeaky-clean and shiny surface that does not need to be rinsed. It works great for in-place cleaning during other airframe or engine maintenance.

Quart.....P/N 09-02084 .....$5.50
Gallon.....P/N 09-04072 ..... $13.95
5 Gallon.....P/N 09-04074 ..... $68.75
55 Gallon.....P/N 09-04075 .....$654.50

NUVITE LEATHER GUARD

Nuvite Leather Guard helps you keep that brand-new, supple, fine finished leather look and feel for luxury aircraft, RV or automotive seating, fine furniture or institutional use. Leather Guard is the finest enrichening formula available for leather nutrition . P/N 09-02091..... $11.95

NUVITE POLISH/PROTECTANT SYSTEMS

Nuvite's surface finish enhancement and protection echnology offers the highest-performance surface maintenance and protection systems available. These products are designed to be used on your aircraft, boat, recreational vehicle, truck, auto or other vehicle anywhere, anytime. Nuvite has the answer for your operations in an EPA-sensitive environment.

NUPOL POLISH / RESTORER / UV PROTECTANT

Same easy wipe on, let dry, wipe off surface cleaner with enhanced cleaning and oxidation removal capabilities. Ideal for tough cleaning due to long intervals between cleanings. Leaves a beautiful shine and an effective UV protective barrier.

Qt..... P/N 09-00583 .....$11.95
Gal. ..... P/N 09-00582 .....$34.95

NUPOWER II POLISH/UV PROTECTANT

Dry Wash Cleaner and Polish (Routine dry wash cleaning with gloss enhancement and UV protectant barrier) - Use for routine cleaning where wetwashing is not possible or gloss enhancement is desired. Contains non-abrasive media to remove even stubborn soiling. Cleans dirt, carbon and oil and leaves a protective barrier against UV deterioration of paint. Can also be used to clean bare metal surfaces. Apply with mop, spun cotton pad, towel or by hand. Agitate uniformly over area to be cleaned, spreading material to a very thin layer. Let dry completely and buff off by hand with clean terry towel. Supplied ready-to-use. Qt..... P/N 09-00581 .....$10.95
Gal. ..... P/N 09-00580 .....$32.95

NUSHINE II POLISH/ SYSTEM

Nuvite engineers have formulated a system of polishes to meet the needs for almost any metal and paint polishing project. New metal to antique, the formulations in the NuShine II Polishing System will give superior definition, highlights, imagery, clarity, and will retain the finish longer than normal polishes. Nuvite's NuShine II graded polishes use high technology materials with programmed abrasive characteristics and are blended with superior carriers to offer the ability to produce cutting action when needed, yet offer micron-level finishing in the finer grades that produces highest reflectance and image excellence.

Grade S (for final finishes) – The finishing grade that gives the really deep, clear image when used as a final finish over a properly prepared, oxidation-free surface. 0.5 Lb. jar..... P/N 09-00578 .....$36.60

Grade G6 (SS & titanium or heavily oxidized aluminum) – When a heavy cut of the surface is needed, G6 may be a good answer. G6 has a high-tech abrasive system that is designed to do a quick, aggressive cut, and immediately break down to a finer cut, similar to Grade C. Use when there is heavy oxidation on the surface of aluminum, or even when very light corrosion is evident. Can also be used to blend surface scratches in aluminum. Can also be used for polishing stainless steel. 0.5 Lb. jar..... P/N 09-00586 .....$37.50

Grade C (for unpolished aluminum and repolishing degraded brightwork) - C is a cutting grade polish that we recommend to prep for using Grade S. Use Grade C to begin polishing on clad aluminum that has never been polished. Will also remove the cloudy/hazy white background found in many otherwise good polish finishes.

0.5 Lb. jar ..... P/N 09-00587 .....$36.85

NUSHINE II POLISH SYSTEMS

Polishes for both metal and paint finishing that will provide the finest surface finish available. Has been shown to outperform all other aviation, automotive and marine polishes in side-by-side testing by users throughout the world. Affords the operator the choice to select the grade of polish to match the needs of the surface to be polished, be it brand new, oxidized in use, or with atmospheric corrosion. NuShine II not only polishes paints and metals to an incredibly deep, clear and image-reflecting surface, but also imparts a protective chemical barrier to inhibit corrosive oxidation to the metal.

Grade F9 1/2 lb.....P/N 09-02086 ..... $37.50
Grade F7 1/2 lb.....P/N 09-02087 ..... $37.50
Grade F7 1 lb.....P/N 09-02087-1 ..... $52.75
GradeGrade A 1/2 lb.....P/N 09-02088 ..... $37.85

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AERO GLOSS

Aero Gloss polish is used by 80% of the worlds major airlines. It is now available to the general aviation and experimental aircraft market. Removes turbine soot and exhaust stains from paints. It is an excellent plexiglass polish and can be applied with a power buffer. It takes 1-2 pints and 3-4 hours to polish an average Cessna 182 with Aero Gloss.

Pint..... P/N 09-38100 ..... $19.95
Gallon..... P/N 09-38101 ..... $63.75
5 Gallon..... P/N 09-02180 ..... $289.95

STAR BRITE AIRCRAFT POLISH

This exceptional new polish cleans off dirt, stains and oxidation and restores the original bright color of the aircraft leaving a dazzling shine. StarBrite also cuts fuel consumption and boosts speed by reducing drag an amazing 5.5%. Contains no wax, oils or acids. 16 fl.oz. P/N 09-23900..... $23.50

SKYWASH DRYWASH & WAX

Cleans gently, maintains and conserves in one step, especially aluminum and chrome surfaces, is value preserving and leaves a clean and high-gloss surface. Can also be applied on damp surfaces. Protects long term against harsh environment, salt, UV-rays and oxidation. Protects from corrosion by its environmentally friendly additives. Can be used on all painted or unpainted surfaces, does not attack metals, paints, plastics, glass and plexiglass. Due to its high production safety, it also works particularly well on aluminum and chromium plated surfaces.

16 oz..... P/N 09-03805 ..... $12.95
1 Gallon..... P/N 09-03806 ..... $69.95
5 Gallon..... P/N 09-03807 ..... $249.95

TOP GUN ULTRA FINISH

One-step product for all aircraft finishes. Removes surface contaminates and oxidation though a unique chemical process, rather than using harsh abrasives. The coating left behind is not a wax, but an extremely hard and durable sealant. This affords superior long term protection (up to 12 months or longer), and easier cleaning of your finish. Once applied, bugs and corrosive elements remove more easily. Very effective in restoring clarity to plexiglass windshields, side windows, and lenses. 16 fl. oz. Made in the U.S.A. 16 oz..... P/N 09-00192 ..... $16.75

AUTO GLOSS POLYMER WETCOAT

Polymer Wetcoat removes mild oxidation leaving your auto's finish protected for one full year. No other product can make that claim. A combination of polymeric resins and 100% premium carnauba creates the most durable finish on the market.

16 FL. OZ..... P/N 09-00157 ..... $14.65

SEAL-A-PLANE

Unlike products that were designed for the automobile industry, Seal-A-Plane is for aircraft and protects the aircraft surfaces from harmful UV rays and corrosion. Common waxes breakdown in the sun. Seal-A-Plane actually gets harder in the sun and is stable up to 500 degrees F. Seal-A-Plane contains no silicones and is non corrosive. It normally only requires application once a year (depending on the planes operating environment) and can be used on any surface including fiberglass and Plexiglas. One 16 ounce bottle will be enough for most single engine planes and two will do most light twins. P/N 09-01650..... $27.50

MASTER FORMULA - SEALER GLOSS

Master Formula Sealer Gloss Protective Sealer waterproofs, protects and seals any hard surface. It leaves a durable, glossy protective coating that's easily maintained and lasts up to one full year. Master Formula Sealer Gloss is excellent for use on any metal or painted surface. These surfaces include all car finishes including clear coasts, gel coasts, plastics fiber glass. They also include all metal surfaces such as aluminum, chrome, brass, stainless steel, gold, silver and more. 16oz..... P/N 09-02077..... $22.75

MET-ALL

An aluminum polish which removes and prevents pitting. Makes aluminum shine with mirror-like brilliance. Non-toxic, non-abrasive and non-flammable. A non-silicone product which resists further corrosion. Meets military specifications. 1 Lb. Can..... P/N 09-24200 ..... $10.90
2 Lb. Can..... P/N 09-24300 ..... $19.90

BUG BLASTER SPRAY

Dissolves and removes bugs without scrubbing - no elbow grease is required! This is a quick, time saving product. Just spray, wait and wipe. Finally a product that solves messy problems without being messy!! Unlike other formulations, when sprayed, Bug Blaster instantly attacks bug proteins and acids. You will not have the dripping, messy run-off you have with conventional bug removers. Perfect for use in paint shop environments where run-offs need to be avoided.

32 OZ ..... P/N 09-02080..... $18.85
1 GALLON..... P/N 09-02081..... $37.75

MET-ALL DETAIL POLISHING KIT

Met-All's Detail Polishing Kit will produce a show room finish on bare metal, painted surfaces and fiberglass using Met-All polishes and premium bonnets. Each bonnet features a recessed loop back so the edge and face can be effectively used with less concern for marring the finish. Change pads quickly and easily. Ideal for polishing aircraft, cars, motorcycles, boats etc.

P/N 09-00448..... $34.50

BLUE MAGIC METAL POLISH

Blue Magic produces a deep mirror shine. The oxide residue left after polishing is easily wiped off with a rag. A small amount will polish a large area. Airshow aerobatic pilot Chuck Lischer, Jr., whose high performance Swift is shown here, recommends Blue Magic as the best polish available for polished aluminum aircraft.

#500 1 lb. Can..... P/N 09-24600 ..... $10.50

210® PLASTIC CLEANER/POLISH

•Anti-static, Anti-fog • Will remove marks from crayons, magic markers and paint oversprays • Removes residue glue from protective backings and masking tape • Evaporating properties in the formula - cleaning is quick and easy without leaving any streaks or swirl marks • Resists fingerprints • Seals pores in plastic and leaves a protective coating • Pleasant clean aroma • Gives plastic a clear, lustrous look.

7 oz..... P/N 09-00518..... $8.95
14 oz..... P/N 09-00517..... $9.85

210® PLUS PLASTIC SCRATCH REMOVER

•Extremely mild abrasive compound, with anti-static and anti-fog properties in its formula • Ideal for the removal of surface scratches and blemishes from windshields or heavy cleaning of all plastic materials • Water soluble, excess can be wiped off with a wet sponge or cloth •Easy to use.

15 oz..... P/N 09-00519 ..... $12.95

210® WINDSHIELD CARE KIT

Recommended by LP Aero Plastics and other leading aircraft windshield manufacturers, our 210® Plastic Cleaner & 210® Plus will help keep your windshield crystal clear and scratch free for safe, enjoyable flying. Our Windshield Care Kit Contains: (1) 7 oz. 210® Anti Static/Anti-Fog cleaner & polish, (1) 7.5 oz. 210® Plus Anti-Static plastic scratch remover, (100) 9"x 16" Sontara Aircraft Wipes. P/N 09-00521 ..... $39.95

CLEAR VIEW PLASTIC POLISH AND PROTECTANT

Clear View™ makes clear plastics look like new. It is designed to fill in fine scratches on plastic windshields and windows, leaving a perfect like new finish. It leaves no residue, just spray it on and wipe it off. It is safe on all plastics and is non-abrasive. 13 oz..... P/N 09-00531 .....$7.50

EASY ALUMINUM POLISH

EASY ALUMINUM POLISH – Imagine a metal polish so brilliant that billet aluminum looks like chrome! How about achieving these results in seconds with no effort! And what if this "mirror" shine you've just created lasted for an unbelievably long time before needing touch-up? This is PPC's EASY POLISH! Months of tedious research and formulation led to the development of this incredible product – easiest to use, shiniest by far, longest-lasting protection in the industry. Find out why EASY is the metal polish most endorsed by both wheel manufacturers and auto enthusiasts! Dazzling Shine in Seconds! Polishes without scratching. Removes hazing, discoloration and water spots. Restores depth, gloss, clarity. Protects with acrylic polymer barrier. Works on all metals, even jewelry.

32 oz..... P/N 09-04365 ..... $35.70

XHAUST & SOOT REMOVER

A powerful, concentrated, multipurpose aircraft cleaner / degreaser formulated to clean the touhest exhaust soot, belly grime and bug splats – all while being gentle on all aircraft surfaces. MEETS BOEING D6-17487 REVISION R. Earth friendly! It is water soluble, nonflammable, nontoxic and biodegradeable. It will not harm rubber, insulation, plastics or wiring.

1 Gallon ..... P/N 09-03836 ..... $23.95
5 Gallon ..... P/N 09-03837 ..... $108.85
30 Gallon ..... P/N 09-03838 ..... $336.56
55 Gallon ..... P/N 09-03839 ..... $658.00

AERO GLIDE DRY WASH

One-Step Dry Wash, Polish & Friction Reducer. Leaves a high gloss protective finish on aircraft and other vehicles that reduces surface friction and exhaust stains. Apply either directly onto the surface to be cleaned or pour a small amount onto a cloth and wipe on. Any soft, lint free cloth will work fine. Microfiber rags or applicator pads are excellent for this purpose. As you wipe away dirt, grime and exhaust away, Aero-Glide will leave a bright lustrous brilliant shine.

16 oz. ..... P/N 09-03815 ..... $16.65
1 Gallon ..... P/N 09-03816 ..... $49.90
5 Gallon ..... P/N 09-03817 ..... $230.95
30 Gallon ..... P/N 09-03819 ..... $1,250.00
55 Gallon ..... P/N 09-03821 ..... $2,087.00

MR DETAIL INSTANT DETAILER

The instant detailer that cleans and shines like magic. Get that 'just detailed' look between regular washing and waxing (or RejeX-ing). Quickly and easily removes dust, road film, fingerprints, streaks and water spots safely from most vehicle surfaces. Make sure surface to be treated is cool to the touch. Mist Mr. Detail onto a small area (approximately 1-8 square feet). Wipe until area is clean and shiny, and Mr. Detail is absorbed into the cloth. Do not allow excess product to dry on the vehicle.

16 oz. ..... P/N 09-03822 ..... $8.90
32 oz. ..... P/N 09-03823 ..... $15.90
1 Gallon ..... P/N 09-03824 ..... $35.90
5 Gallon ..... P/N 09-03825 ..... $139.75

NVIRO SOLVE AIRCRAFT BELLY CLEANER / DEGREASER

A bio-based organic cleaner made from various plant and fruit derivatives. Removes baked-on oil deposits, as well as heavy grease, from painted or unpainted surfaces. Totally biodegradeable when rinsed with water. Can be diluted 3:1 with water to dissolve lighter accumulations.

16 oz. ..... P/N 09-03826 ..... $14.90
1 Gallon ..... P/N 09-03827 ..... $33.59
5 Gallon ..... P/N 09-03828 ..... $184.75
30 Gallon ..... P/N 09-03829 ..... $741.00
55 Gallon ..... P/N 09-03830 ..... $1,280.00

PRO WASH RX PH NEUTRAL SOAP

Super-concentrated, pH balanced, shine enhancing soap. Contains special rinsing agents that help eliminate spotting and streaking. Apply with a sponge or soft bristled brush, and agitate the rich foamy suds, rinse, and towel dry or air dry.

1/2 Gallon ..... P/N 09-03831 ..... $17.90
1 Gallon ..... P/N 09-03832 ..... $22.68
5 Gallon ..... P/N 09-03833 ..... $114.75
30 Gallon ..... P/N 09-03834 ..... $422.00
55 Gallon ..... P/N 09-03835 ..... $736.00

XTREME FINISH DRY WASH & WAX

Professional Grade Dry Wash & Wax. Designed to clean and provide short-term, high gloss protection for vehicle finishes – all in one step! As you wipe the dirt away, Xtreme Finish will leave a bright, glossy shine.

16 oz. ..... P/N 09-03840 ..... $21.50
1 Gallon ..... P/N 09-03841 ..... $53.59
5 Gallon ..... P/N 09-03842 ..... $244.95

5 STAR FOAM MULTI PURPOSE CLEANER

Use on interior smudge marks, nicotine stains, oily fingerprints and food stains. On exteriors, will effectively clean carbon exhaust, oil and bugs. Can also be used on vinyl, leatherette, plastic, sinks, enameled, varnished and similar surfaces.

P/N 09-03843 ..... $12.90

A-PLEX PLEXIGLAS CLEANER

A-Plex is an anti-static aircraft and marine Plexiglas cleaner, protectant and polish. A-Plex produces a microscopic, high luster, soil retarding, water repellant finish. A-Plex dries with no smears, no smudges and no oily residue. Can be applied in seconds. 19 oz. aerosol.

P/N 09-03844 ..... $12.95

SKYWASH GALLEY CLEANER

Safe, Thixotropic Aircraft Cleaning Concentrate – Biodegradable. Water dilutable acid based cleaning concentrate. Removes strongest residues of soil, scale, stains and calcification special in galleys. Is absolutely safe. Is thixotropic performed, clings therefore safe on vertical surfaces. Safe on high strength steel, stainless steel, aluminum , most plastics and good quality paint. Does not contain dangerous ingredients, non flammable. The product is also performed to clean coffee maker, coffee pots, teapots etc.

16 oz. ..... P/N 09-03857 ..... $9.95
1 Gallon ..... P/N 09-03858 ..... $59.95
5 Gallon ..... P/N 09-03589 ..... $299.95

SKYWASH COCKPIT CLEANER

Aircraft Cockpit Cleaner with disinfection - environmentally safe biodegradable. Multifunctional water-soluble effective special cleaner, deodorant and disinfection product for cleaning aircraft interiors and fuel tanks. Safe on vertical or overhead surfaces, non - flammable, no flash point, pleasant odor, vapors non toxic. Safe on aluminium, high strength steel, magnesium and other metals, plexiglass, most plastics and good quality of paint, retards corrosion of aluminium and magnesium structures. Controls odor, is lavender scented.

16 oz. ..... P/N 09-03848 ..... $9.95
1 Gallon ..... P/N 09-03855 ..... $59.95
5 Gallon ..... P/N 09-30856 ..... $299.95

SKYWASH WINDOW CLEANER

Environmentally safe. Aircraft Window Cleaner with disinfection – biodegradable. A clear liquid solution for cleaning acrylic and glass windows. Rapidly and effectively removes soils from glass and acrylic. Free rinsing and fast drying without streaking. Safe on acrylic and glass.

16 oz. ..... P/N 09-03851 ..... $9.95
1 Gallon ..... P/N 09-03852 ..... $59.95
5 Gallon ..... P/N 09-03853 ..... $299.95

SKYWASH CABIN CLEANER

Aircraft Cockpit Cleaner with disinfection - environmentally safe biodegradable. Multifunctional water-soluble effective special cleaner, deodorant and disinfection product for cleaning aircraft interiors and fuel tanks. Safe on vertical or overhead surfaces, non - flammable, no flash point, pleasant odor, vapors non toxic. Safe on aluminium, high strength steel, magnesium and other metals, plexiglass, most plastics and good quality of paint, retards corrosion of aluminium and magnesium structures. Controls odor, is lavender scented.

16 oz. ..... P/N 09-03848 ..... $9.95
1 Gallon ..... P/N 09-03849 ..... $59.95
5 Gallon ..... P/N 09-03850 ..... $299.95

SKYWASH LAVATORY CLEANER

Safe and thixotropic aircraft lavatory cleaning concentrate – biodegradable. Effectively removes water scale and stains from stainless steel. Allows for in-place cleaning, eliminating the need to remove toilet systems from the aircraft. Cleans and decalcify galley equipment. Thickened for better cling on vertical surfaces. Safe on stainless steel, most plastics and good quality paint. Not safe for use on high strength steel, zinc or magnesium.

16 oz. ..... P/N 09-03845 ..... $11.95
1 Gallon ..... P/N 09-03846 ..... $69.95
5 Gallon ..... P/N 09-03847 ..... $329.95

SKYWASH LEATHER CLEANER

Environmentally safe, biodegradable - non-flammable, solvent free. Cleans and maintains in one step. Removes things like coffee, cocoa, tea, fruit juices, tomato juice, Coca Cola, wine, sparkling wine, beer, Cognac, pen, environmental dirt etc. Leather surfaces remain natural.

16 oz. ..... P/N 09-03863 ..... $18.95
1 Gallon ..... P/N 09-03864 ..... $119.95
5 Gallon ..... P/N 09-03865 ..... $495.95

SKYWASH POLISH & SEALANT

Can be used on all surfaces painted or unpainted, cleans, gently protects, and conserves at the same time. Particularly well on aluminum and chromium plated surfaces. Protects long term against harsh environment, salt, acid rain, other pollutants, UV-rays and oxidation.

16 oz. ..... P/N 09-03860 ..... $39.95
1 Gallon ..... P/N 09-03861 ..... $289.95
5 Gallon ..... P/N 09-03862 ..... $1,295.00

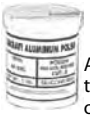
CS

ROLITE METAL AND FIBERGLASS POLISH

Rolite Metal and Fiberglass Polish will restore the original brilliance of virtually any metal surface, as well as being ideal for fiberglass and plexiglass parts. Rolite products are preferred by many EAA members maintaining bare aluminum aircraft as well as by commercial airlines and prop shops worldwide. Will create a mirror-like shine like you have never seen. Recommended for maintaining brilliant propellers and spinners.

10 Oz. Can ..... P/N 09-42555 ..... $17.50
2 Lb. Can ..... P/N 09-42560 ..... $33.75

ROLITE AP-300 ALUMINUM POLISH



A super-fine, high quality aircraft cleaner/polish that improves the appearance of alcald aluminum. It removes light to medium oxidation, soil, and jet blast residue with ease. Finished gloss and reflection of aluminum: extremely high.

1 Lb. Jar ..... P/N 09-00183 ..... $63.85

ROLITE SUPRA 90 ALUMINUM POLISH

Researched and developed for the commercial aircraft industry. This precision aluminum polish is widely used by many domestic airlines. Manufactured to meet all Boeing and McDonnell Douglas Specifications (Boeing D6-17486; CSD-1, Type 1 &V). Supra 90 will give you a mirror-like shine on your aluminum (or any other metal) surface that was never before believed possible!

2 Lb. Can ..... P/N 09-42420 ..... $65.75

ROLITE PREMIUM POLISH AND SEALANT

A World-Class, One-Step Product. Silicone and wax free, easy-to-use, one-step cleaner, polish, and sealant. This product produces a lasting, brilliant shine never believed possible. It is uniquely formulated with polymers to level the surface, seal in the shine, and protect the painted finish from UV rays, calcium, salt, and other pollutants. Safe for all painted surfaces, including clear coat. It is superb on non-porous materials like fiberglass, plastic, and stainless steel. Because it is formulated for aviation, it is a step above any off-the-shelf product available for autos, trucks, RVs, motorcycles, off-road vehicles, boats, and watercraft. P/N 09-00385 ..... $19.85

MAAS ALUMINUM & FIBERGLASS POLISH

Maas polish removes fine scratches, prevents clouding on plexiglass windshields and windows, reduces air resistance, and repels moisture. It is used by major air carriers and has provided them with a 10% savings on fuel due to Maas' ability to substantially reduce parasitic drag and friction on the leading edges of the aircraft. Excellent for use on anodized or bare aluminum, painted surfaces, plastics, plexiglass, and fiberglass. 1 lb. can ..... P/N 09-23545 ..... $19.50

ROLITE PREMIUM VINYL & LEATHER PROTECTANT

"The Sun Protector". Protect your aircraft interior by using Rolites' maximum sun block formula. Contains no solvents, silicone oils, or petroleum distillates. Its anti-static formula will produce a shine on your vinyl or leather seats without being slippery or tacky. And will actually repel dust! Comes in spray pump bottle.

8 oz. Bottle ..... P/N 09-42435 ..... $8.95

VOODOO WAX™ RACING FORMULA

Developer for high speed aircraft applications. Voodoo Wax™ is the wax of choice for Team Voodoo's P-51 Mustang Unlimited Air Racer. The Voodoo Wax™ formula is ideal for application on aircraft, boats, automobiles and motorcycles.

Voodoo Wax™ Cleaner Polish contains the finest blends of ultra fine polishing agents, polymers and imported waxes.

Voodoo Wax™ Cleaner Polish rapidly cleans and removes fine and medium scratches, oxidization, water spots and environmental contaminates leaving a deep, rich luster and durable finish. Safe for clear coat and non-clear coat finishes, cleans and restores Lexan and Plexi-Glass.

Voodoo Wax™ Cleaner Polish is the ideal companion product to use prior to Voodoo Wax™ Racing Formula.

P/N 09-01594 ..... $16.95

VOODOO WAX™ CLEANER POLISH

Voodoo Wax Cleaner Polish contains the finest blends of ultra fine polishing agents, polymers and imported waxes.

Voodoo Wax Cleaner Polish rapidly clans and removes fine and medium scratches, oxidization, water spots and environmental contaminated leaving a deep, rich luster and durable finish. Safe and clear coat and non-clear coat finishes. Cleans and restores Lexan and Plexiglass.

Voodoo Wax Cleaner Polish is the ideal companion product to use prior to Voodoo Wax Racing Formula. P/N 09-01593 ..... $16.95

NEWSTAX AIRCRAFT EXHAUST POLISHING KIT

Restores polished aircraft exhaust stacks to a flawless mirror finish, fast! Specifically developed to allow anyone to achieve a professional grade finish without the high cost or downtime associated with sending the exhaust stacks to the manufacturer for polishing. 2 step nonabrasive process. This complete kit contains everything needed to revitalize and polish 4 exhaust stacks.

P/N 09-04024 ..... $129.95

PLAS-TEC® ACRYLIC SHEET/ PLASTIC CLEANER

Plas-Tec® cleans, shines, and protects today's high-tech plastics. Plas-Tec® is a non-aggressive, optically clear cleaner that lifts fingerprints and smudges, leaving a protective, anti-static coating that resists dirt build-up. Plas-Tec® is excellent for use on acrylic, Lexan, or Plexiglass windshields and windows as well as aircraft instrument panels, and many other applications.

4 oz. Can ..... P/N 09-00308 ..... $4.50
16 oz. Can ..... P/N 09-00309 ..... $9.50
1Gal. Can ..... P/N 09-00310 ..... $29.75

REJEX SOIL BARRIER & STAIN PROTECTOR

RejeX™ is an advanced polymer system that seals painted surfaces to guard against corrosive exhaust gas, oil, and bug stains. It forms a slick, long-lasting, glass-like barrier that allows easy removal of turbine and piston-engine exhaust stains with mild detergents. Bugs can be removed quickly and easily with just a stream of plain water. On paint in good condition, RejeX eliminates the need for waxes and polishes, and one application will last a minimum of 4 months. Surfaces to be protected should be clean, dry, and cool to the touch and the product should not be applied in direct sunlight. Damaging contaminants, such as bug acids and exhaust stains will no longer be a problem. High Gloss Finish

12oz. Can ..... P/N 09-01729 ..... $13.95
16 oz. Can ..... P/N 09-00303 ..... $17.95
1 gal. Can ..... P/N 09-00924 ..... $129.95

BRILLIANIZE

Brillianize makes shiny surfaces brilliant. The cleaned surface resists finger marking, has anti-static properties, repels dust. It is a nonflammable and nontoxic liquid. Use it to clean Plexiglas, Lexan, mirrors, chrome - any shiny surface. Apply and polish with Kleenmaster shop towels.

8 oz. spray bottle ..... P/N 09-24000 ..... $9.50
#128P -1 gal. plastic bottle ..... P/N 09-24100 ..... $27.50

SPEED CLEAN™ -PLASTIC CLEANER/PROTECTOR

Just spray it on, let it work, and gently wipe off with a soft cloth. The surface is clean, protected and will be even easier to clean the next time! Now you can safely Clean and protect just about anything in your life that gets messy.Plastic surfaces, are found everywhere. Aircraft, autos, watercraft, kitchens, motorcycles, watches, and the list goes on. Once you clean the surface, Speed Clean™ leaves an invisible velvety smooth surface that helps dust and dirt from sticking to it. Cleaned surfaces will be static & dust free for weeks, and everything will be even easier to clean the next time. 16 oz. bottle ..... P/N 09-01962 ..... $14.85

OMR BUG & EXHAUST REMOVER

OMR bug & exhaust remover designed to remove organic matter, bug juice, and engine exhaust soot from surfaces of aircraft, automobiles, & trucks. Dissolves most dried up bug matter and exhaust soot in seconds. It eliminates scrubbing and does not affect painted surfaces.

1 Qt. (Spray Bottle) ..... P/N 09-35710 ..... $9.75
1 Gal. Refill ..... P/N 09-35712 ..... $15.85

ACTION CHIPKIT
FIXES PAINT CHIPS AND SCRATCHES

The Action Chipkit stops rust around paint chips and scratches and produces repairs which are flush with the rest of the paint. The kit includes the Eliminator rust remover which is used to prepare the surface, and then the kit's clear paint sealer is applied. The kit's microfine sanding papers and sanding block are used to create a smooth and flush finish. Extrafine polishing compound completes the job by removing irregularities and restoring gloss. Everything you need for small paint chip repairs is included in the easy-to-use Action ChipKit.

P/N 09-27225 ..... $16.50

PLEXIGLASS CLEANERS & POLISHES

NOVUS PLASTIC POLISH #1 CLEANS & PROTECTS

Novus Plastic Polish #1 gently cleans all plastics without scratching and leaves a lustrous shine that resists fogging, repels dust, and eliminates static. Leaves a shield that resists fingerprints and smudging, and is nontoxic and free of strong odors. Contains no abrasives or harsh chemicals.

8 oz. .....P/N 09-38110 ..... $4.65
64 oz. .....P/N 09-38115 ..... $12.75

NOVUS PLASTIC POLISH #2 RESTORES & REFINISHES

Novus Plastic Polish #2 removes fine scratches, haziness, and abrasions from most plastics. With repeated use, it will restore faded and discolored plastics. Contains mild abrasives, but is nontoxic and has no strong odor. Creates a deep shine which resists scratching, marking, and aging.

8 oz. .....P/N 09-38120 ..... $9.75
64 oz.. .....P/N 09-38125 ..... $25.50

NOVUS PLASTIC POLISH #3

Novus No. 3 removes heavy scratches and abrasions from most acrylic surfaces. This is an aggressive polish and is not intended for use on coated plastics or polycarbonates. Requires both Novus No. 1 and No. 2 polishes for final finishing.

8 oz. .....P/N 09-38130 ..... $7.50
64 oz .....P/N 09-02397 ..... $33.25

SCRATCH OFF WINDSHIELD REPAIR KIT

Developed by an A&P and manufactured since 1993, Scratch Off has become the leading Plexiglas and Lexan restoration system worldwide and is guaranteed, when used as directed, to permanently improve the clarity of aircraft windows and windshields. Scratch-Off is being used worldwide and highly recommended by airframers, aircraft window/windshield manufactures and enthusiasts to restore optical clarity back to aircraft windshields and windows. The 8 panel instruction booklet walks you through a step by step process on how to determine where to start the process as all four steps are not always needed.

Standard Kit ..... P/N 09-42600 ..... $36.75
Deluxe Kit..... P/N 09-00252 ..... $65.75

Please see our website for a complete list of all kit details.

POLY-SAND SCRATCH REMOVER

This is the original Poly-Sand process. Consists of a series of cloth-backed cushioned abrasives which when used in proper sequence will restore the finish of plastics. Also used for fine finishing of wood and precious metals. Recommended by Rohm & Haas Co., manufacturers of Plexiglas. Kit includes series of Poly-Sand cushioned abrasive cloth tapes, all required accessories and instructions.

PCA Kit #40..... P/N 09-24800 ..... $27.95

UNIGRIT™ SANDING PRODUCTS

Unigrit™ Finishing Papers & Sanding Blocks use precise, uniform grit particles to eliminate deep sanding scratches and the need for compounds. More economical to use because they work faster, last longer and won't load up as quickly as conventional sanding products.

FINISHING PAPERS				SANDING BLOCKS			
Grit	Sheet Size (in)	Part No.	Price Each	Grit	Block Size (mm)	Part No.	Price Each
1000	5.5x9	09-23580	$0.85	1000	60x30x20	09-23640	$16.95
1200	5.5x9	09-23590	$0.85	1500	60x30x20	09-23650	$17.00
1500	5.5x9	09-23610	$0.92	2000	60x30x20	09-23660	$17.00
2000	5.5x9	09-23620	$0.96				

PLEXUS AIRCRAFT PLASTIC CLEANER, PROTECTANT & POLISH

Plexus™ was developed for use in aviation, specifically for cleaning and protecting aircraft windshields and painted surfaces. It's quite simply the most effective product you can buy for cleaning, polishing and protecting all clear and colored plastics and painted surfaces. Plexus is easier to use, and leaves a noticeably cleaner, more lustrous finish than conventional polishes. It protects by actually sealing the pores in plastic making it more resistant to debris, oil, bugs or scratches. Because it's anti-static, it repels dust and lint. It's perfect for windshields and the leading edges of the wings, as well as for removing exhaust stains and cleaning wheel wells. Also, Plexus polishes without harmful abrasives. It leaves an invisible, micro-thin layer of wax without smears or smudges. It dries to a crystal clear luster, leaving no oily, sticky or tacky residue. It's the ultimate detailer for your aircraft. So, if you're looking for a better way to save time, money and help protect your valuable investment, it's clearly brilliant. Plexus. Clearly the best. Plexus contains no CFC's, so it's safe for the environment. And because it's an aerosol, there is virtually no waste.

7 Oz. Can.....P/N 09-29715 ..... $16.50ea
13 Oz. Can .....P/N 09-29710 ..... $19.65ea

PERMATEX PLASTIC CLEANER

Removes grease, stains and insects. Retards fogging. Rain repellent, anti-static. Cleans Plexiglas, fiberglass, stainless steel and painted surfaces without scratching.

#403D Pint Can..... P/N 09-00344 ..... $8.75

LP AERO'S ACRYLIC POLISH SEALANT FOR AIRCRAFT WINDSHIELDS

A superior no-wax, non-yellowing formula containing polyethylene poymers. This product not only gives a super slick surface to your windshield and windows, but can also be used on your entire aircraft, including all the painted gloss surfaces, aluminum & fiberglass. Ease of application and removal is unmatched. Sold in 16 oz. bottles.

P/N 09-42055 .....$17.85

SPRAYWAY #848 PLASTIC CLEANER

Sprayway plastic cleaner contains no chemicals or abrasives that will cause damage to transparent surfaces. This formula is anti-static, anti-fog, fast-drying, non-streaking, and it reduces glare. It also repels finger smudges, dirt, and dust. Great for use on acrylics, plexiglass, lexan, glass, and polycarbonates. No. 848 meets the following miitary and commercial specifications: • MIL P5425 • MIL P25690A • Douglas Aircraft CSD-1 • ANSI/ASTM F484-77 • Boeing Letter-Lexan 9600. Product is free of ozone-depleting chlorfluorocarbons (CFC's)

P/N 09-42060..... $7.95

PLEXI-CLEAR ACRYLIC CLEANER

Plexi-Clear is an anti-static aircraft plexiglass cleaner, protectant, and polish. Plexi-Clear produces a microscopic, high luster, soil retarding and water repellent finish to all aircraft plexiglass and plastic and makes small scratches less visible,leaving a surface that is fresh, lustrous, and protected. Plexi-Clear dries perfectly with no smears, no scratches, no smudges, no oily, tacky or sticky residue.Plexi-Clear can be applied in seconds, in one easy step. Boeing and MIL spec Approved.

P/N 09-37960 ..... $13.50ea

WINBRIGHT PLASTIC CLEANER

WinBRIGHT is safe to use on any polycarbonate, acrylic, or plexiglass window. Developed for aircraft transparencies, but perfect for any plastic surface:AIRCRAFT, MOTORCYCLE WINDSCREENS, BOATS, AQUARIUMS, CONVERTIBLE WINDOWS, INSTRUMENT PANELS, BIMINI TOPS, SAFETY GLASSES, RVs, CDs This professional strength spray with Micro-Brighteners leaves surfaces sparkling clear and clean. Removes, dust, dirt, stains, smudges and finger prints. Optical clarity improves with extended use. Clean surface with water first, then simply spray WinBRITE onto a dampened flannel cloth and polish into the surface of the window until polish disappears. Contains no wax, solvents or ammonia and leaves no residue or build-up. 8OZ Spray.....P/N 09-02079..... $13.85

CS

MICRO-MESH LEADING EDGE POLISHING KIT

This kit will restore up to 100 sq. feet of unpainted aluminum surface. Perfect for leading edges, vertical and horizontal stabilizers, engine nose cowls and thrust reversers, removes oxidation, corrosion, orange peel, and surface scratches. Provides a uniform high-luster gloss.

Specifications:

- 1 - instructions
- 2 - 5" loop discs, Micro-Mesh 1800 AO
- 2 - 5" loop discs, Micro-Mesh 3200 AO
- 1 - 1/4 lb. container aluminum polish
- 1 - 5" x 3/4" nap TUFBUF lambswool polishing pad
- 1 - 5" white, loop back foam pad
- 1 - 5" soft interface pad with hook
- 2 - 5" loop discs, Micro-Mesh 1500 AO
- 2 - 5" loop discs, Micro-Mesh 2400 AO
- 1 - 16 oz. bottle aluminum cutting fluid
- 2 - flannel cloths
- 1 - 5" soft interface pad with hook.

P/N 09-00785 ..... $109.95

BOOTYWAX PURPLE GLAZE

A easy on and even easier off polish, wax and light hand glaze, all in one bottle. Deep cleans, deep shines, and gently removes light oxidation, fine scratches, buffer swirl marks. It's deep penetrating high gloss finish is safe on all windows, paint surfaces chrome trim and wheels. Repels dirt, bugs and even brake dust on aircraft and vehicle Sheds water like crazy.

16 oz..... P/N 09-02436..... $17.50

BOOTYPREP LIQUID GOLD

When wax alone is not enough. Body Shop Safe - No wax or silicone. Can apply by hand. Deeply penetrates as it cleans, polishes, a controlled 1500 cut safely removes heavier oxidation, fine surface scratches, swirl marks and is an excellent color restorer.Follow with a coat of BootyWax Purple Glaze to "Seal the Deal" with an even deeper shine.

16 oz..... P/N 09-02438..... $21.50

BOOTYMARINE CRUD CUTTER GRAY

Deep cleans the way for a micro sanding-polishing action that waxes and seals itself all in one step saving you time and money. Great protection against all future harsh weather elements, sun, water lines, mildew, salt and river scum.

16 oz..... P/N 09-02440..... $28.85

3M™ PREMIUM LIQUID WAX

Clear coat safe wax. Use on all cured paint finishes. For use by hand or with an orbital polisher. Produces a high-gloss, deep-luster, durable finish on both new and used car paints. Special formulation is capable of removing road film or light oxidation from car finishes. Heavily oxidized finishes may require compounding with 3M™ Super Duty Rubbing Compound (PN39004) prior to applying wax. Quart Size.

P/N 09-01440..... $22.50

THOR AERO BRUSH

This a 10" foam block that is completely filled with a one threaded green nylon. This brush will effectively remove oil, grease, exhaust fumes, and other oily residues. 60" length metal handle not included, order separately.

Thor Aero Brush ..... P/N 09-00897..... $18.50
Handle For Brush ..... P/N 09-02097..... $10.65

KPC PRODUCTS, CLEANERS AND PRESERVATIVES

WINDSHIELD SPEED CLEANER & POLISH - KPC Windshield Shield Speed Cleaner & Polish for Transparent Plastic Aircraft Materials. Meets U.S.A. Military Requirements MIL-C-18767A (ASG). This product is non-static, non-glaring, and abrasive free, will help prevent hazing and discoloration of clear plastic materials. Can be used in arid, humid, rain or sunny conditions. Recommended for: plastic windows, windshields, windscreens, and instrument faces, AS-2 safety glass, plexiglas, lexan and mylar, formica and other structural plastics. Safe, quick, easy to use.

12 oz. ..... P/N 09-00544 ..... $12.65
1 gal. ..... P/N 09-00545 ..... $49.05

KPC VINYL COATED CLEANER AND PRESERVATIVE - KPC Vinyl Cleaner and Preservative is a neutral biodegradeable spray on - wipe off chemical. The finest chemical available for cleaning and preserving your breathable or solid vinyl, deep grained vinyls, pearlized vinyl, hercolyn, leatherette, naugahyde, or any synthetic fabric. No abrasives, residue, coating, or discoloration. KPC Vinyl Cleaner will not damage cloth, rugs, chrome, painted walls or any of the threads or seals that hold the vinyls together, or any backing of breathable vinyl as used on some of the imported cars. Leaves article soft and pliable.

12 oz. ..... P/N 09-00542 ..... $9.27

KPC RUBBER CLEANER AND PRESERVATIVE - KPC Rubber Cleaner and Preservative restores new look to your rubber accessories. All rubber parts will look like new (no painted or artificial look). Cleans and preserves all rubber molding of aircraft, auto, commercial, etc. Cleans and restores floor mats whether clear, red, brown, etc. to their original color. Not harmful to paint, glass, chrome, rugs, aluminum, etc., and will not change the original color of any rubber material.

16 oz. ..... P/N 09-00548 ..... $8.95

KPC LEATHER CLEANER & PRESERVATIVE - KPC Leather Cleaner and Preservative cleans genuine leather with a saddle soap base -preserves leather with pure neatsfoot oil. A one step leather care for all leather goods. Wipe on -wipe off. No oily residue is left on your leather. Kleenmaster uses only natural animal oils which penetrate into the leather. It preserves the finish even if leather becomes hot. Product is nonflammable, free of offensive odor, and will not irritate skin. Helps prevent mildew.

4 oz. ..... P/N 09-00550 ..... $4.75
8 oz. ..... P/N 09-00551 ..... $9.65

AEROSHELL FLIGHT JACKET POLISHES AND CLEANERS

AEROSHELL FLIGHT JACKET POLISH - Frees leather of ground-in dirt. Works well on vinyl, plastic, & rubber. Contains no silicone.

P/N 09-00392..... $14.65

AEROSHELL FLIGHT JACKET PLEXICOAT - Increases visibility of aircraft windows. Protects Plexiglas and glass surfaces from UV yellowing and clouding. Removes and prevents light scratches. Commercial Aviation Certified. Contains no silicone. (16-oz. Bottle)

P/N 09-00393..... $12.95

AEROSHELL FLIGHT JACKET OIL & EXHAUST REMOVER - Non-abrasive formula removes exhaust residue without removing Aeroshell Flight Jacket Polish or damaging paint. Safe for all paint surfaces.16 oz

P/N 09-00394..... $9.85

AEROSHELL FLIGHT JACKET INTERIOR CLEANER - Flight Jacket Interior Cleaner frees leather of ground-in dirt and debris. Can also be used on interior trim surfaces including vinyl, plastic and rubber (not recommended for cloth).

P/N 09-00395..... $6.95

AEROSHELL FLIGHT JACKET INTERIOR CONDITIONER - Moisturizes and protects leather and vinyl from wear and UV rays. Dries without leaving an oily residue. No messy overspray. Contains no silicone.(7.5-oz. Bottle)

P/N 09-00396..... $7.95

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AERO CLEANING PRODUCTS

AERO SHINE DRY WASH AND PROTECTANT

SHINE is a revolutionary new method of washing and shining your aircraft. It provides a protective coating on your paint in minutes, without water. No buckets, no hoses, no rinsing and drying! Simply spray on the surface and wipe dry. The unique formulation dissolves dirt and stains such as tree sap and bugs. Special lubricating agents encapsulate the dirt so that it can easily be wiped off your aircraft's delicate surface without scratching. It also leaves a protective film that provides gloss, color enhancement and smoothness that conventional washes fail to deliver.

16 oz. Spray ..... P/N 09-04031 ..... $22.49
Gallon ..... P/N 09-04039 ..... $79.95

AERO SUDS EXTERIOR SOAP

SUDS Exterior Soap has been specially formulated to powerfully clean your car or aircraft as it protects your wax finish. SUDS is the perfect balance of shielding your wax and protective coatings, while also removing unsightly dirt and road grime. SUDS, the ultimate soap that helps to keep a shine on your paint without harsh stripping agents that can damage surfaces, is environmentally friendly and biodegradable. With SUDS you do not have to worry about water spots or causing "spider web" marks in your paint finish because of its revolutionary lubricating agents to remove the dirt.

2.5 oz. ..... P/N 09-04056 ..... $4.49
16 oz. ..... P/N 09-04064 ..... $19.99
Gallon ..... P/N 09-04065 ..... $77.50

AERO FINALE FINAL DETAILER

Water spots, streaks and undesirable dust between washes are a thing of the past once you use FINALE on your aircraft. Formulated for both interior and exterior surfaces. Its lubricating agents encapsulate dirt and grime allowing fragile surfaces on your plane, such as paint, to be safe from scratches. Not only does FINALE add a desirable shine and polished look to your plane, but it also places a thin, protective barrier between your car and the elements.

16 oz. ..... P/N 09-04030 ..... $18.89
Gallon ..... P/N 09-04038 ..... $68.85

AERO POLISH METAL POLISH

POLISH delivers shine and protection to aluminum, stainless steel, chrome, gold, silver, copper, brass and magnesium. Other paste-type polishes only permit small areas to be shinned at once. Their polishing products cannot be allowed to dry or they become difficult (if not impossible) to remove. But with POLISH, users can polish an entire surface, allow it to dry and simply dust it off. What's left is a beautiful shine without the repetitive rub-on, wipe-off exercise required by other polishes. This product actually has certain proprietary ingredients that allow our POLISH to become finer and finer the more you rub it in.

16 oz. ..... P/N 09-04037 ..... $35.99
Gallon ..... P/N 09-04046 ..... $129.50

AERO IMMACULATE INTERIOR CLEANER

Trusted to outperform all other interior cleaners. To ensure that Aero's aerospace clients keep their planes looking their best, they recommend they use this product between every major detail service. Now available to you, IMMACULATE is the secret to how flight crews around the globe keep their VIP aircraft looking brand new. Imagine how IMMACULATE your car or aircraft's interior will look after using it.

16 oz. ..... P/N 09-04033 ..... $18.89
Gallon ..... P/N 09-04042 ..... $68.85

AERO VIEW INTERIOR AND EXTERIOR WINDOW CLEANER

VIEW Glass Cleaner is excellent for cleaning all glass surfaces. It quickly dissolves fingerprints, smudges, dust and dirt while leaving glass and mirrors with a brilliant streak-free shine. This fast acting formula does not streak and will not leave any residue making everything on your plane from plexiglass to lights crystal clear. The ammonia-free product is safe, yet powerful enough to remove unsightly dirt and grime.

16 oz. ..... P/N 09-04048 ..... $17.99
Gallon ..... P/N 09-04041 ..... $63.95

AERO SPOT CARPET AND UPHOLSTERY CLEANER

SPOT will allow you to maintain your carpet and fabric upholstery just as owners of VIP aircraft have for years. Allows every pilot to have pristine, impeccable carpet and fabric upholstery. Whether using SPOT to treat a large area or a persnickety, set-in stain from juice or stubborn dirt, the results are Spotless. While some carpet and fabric cleaners leave residues that attract dirt for future stains and spots, Does not leave film and will keep the surface looking flawless. Perfect for colorfast carpet and fabric surfaces, is an all-natural cleaner making it both biodegradable and perfect for your plane.

16 oz. ..... P/N 09-04034 ..... $18.89
Gallon ..... P/N 09-04043 ..... $68.85

AERO SUPPLE LEATHER AND VINYL CONDITIONER

SUPPLE Leather Conditioner was developed to maintain the elite leather seats found on VIP aircraft, and now it is available for your plane. Using SUPPLE will ensure that your leather seats last for the life of your aircraft. Using products containing substances such as silicone and waxes that are not specifically designed to condition and protect delicate surfaces similar to leather. When exposed to the elements and everyday traffic, it is essential to replace natural oils into leather interior to prevent deterioration and aging.

16 oz. ..... P/N 09-04032 ..... $21.59
Gallon ..... P/N 09-04040 ..... $77.85

AERO AWAY TIRE AND ENGINE DEGREASER

Formulated to remove heavy soil, brake dust and grease found on aircraft safely and effectively, AWAY is an environmentally friendly degreaser. AWAY degreaser will replace a shelf or two of cleaning products in your hangar. It works as a bug & tar remover, a wheel cleaner, a tire cleaner and an engine degreaser. AWAY cleaner is powerful enough to cut through grease on engines and baked-on brake dust… even on roughcast aluminum wheels. Tar, sap, and bugs will break down in just a matter of seconds.

16 oz. ..... P/N 09-04035 ..... $19.79
Gallon ..... P/N 09-04044 ..... $69.95

AERO PROTECT TIRE AND VINYL POLISH

PROTECT has been designed to penetrate the surface it is applied to. This prevents "SLING" which occurs when products are applied to tires and then "flies off" leaving dirt spots all over your freshly cleaned plane, which means no more dirt spots showing up behind wheel wells or down the side of the fuelage. PROTECT is formulated to recondition a plethora of surfaces. Anything from plastic, fiberglass, vinyl and rubber is a candidate for PROTECT's astounding protection and conditioning. PROTECT also prohibits UV damage and other natural.

16 oz. ..... P/N 09-04036 ..... $22.49
Gallon ..... P/N 09-04045 ..... $79.95

AERO 6 PACK TRAVEL CLEANING KIT

To add convenience on the go, AERO has packaged six of their top selling interior and exterior products into a customer embroidered AERO carrying case. The set also includes AERO's 300 GSM microfiber towel or towels depending on the size, so pilots have all the necessary tools to clean and detail their plane anywhere. 6 Pack Traveler Series is perfect for that shine on the fly.

Mini 6 Pack Traveler includes 2.5 oz. bottles of: - SHINE, FINALE, AWAY, IMMACULATE, VIEW and SPOT. We also include 1 300GSM Pro Series Microfiber towel, a custom AERO embroidered travel bag and the AERO brochure.

P/N 09-04047 ..... $33.95

The 6 Pack Traveler includes 16 oz. bottles of: - SHINE, FINALE, AWAY, IMMACULATE, VIEW and PROTECT. Also included are: 4-300GSM Pro Series Microfiber towels, 1-600GSM Pro Series Microfiber towel, a custom AERO embroidered travel bag and the AERO brochure.

P/N 09-04063 ..... $139.99

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POLISHES & CLEANERS

ALL KLEER

Black Labs Corporation is proud to introduce, All Kleer, the ultimate plastic windshield cleaner and polish. All Kleer was invented by a pilot over 25 years ago for cleaning and maintaining plastic aircraft windshields that require absolute clarity.

All Kleer is different than most windshield products on the market as it not only cleans dirt, bugs and grease but leaves a very fine, slick finish. This finish helps to repel water, dust, bugs, and water spotting - making it easier to see and to clean the next time. All Kleer contains no wax, ammonia, or abrasives and does not require the use of any water. A non-pressurized leak proof 8oz bottle is designed to be carried on board if desired.

Simply apply All Kleer with a clean towel to a dry windshield cleaning off any bugs and dirt and allow 30-60 seconds for a haze to form. After it has completely dried, wipe off with a clean towel and feel the All Kleer finish. P/N 09-01602.....$5.85

PRIST® ACRYLIC, PLASTIC AND GLASS CLEANER: FOR ALL TYPE OF WINDOWS

The convenient 13-ounce can is ideal for use on acrylic, stretched acrylic, poly carbonate, glass, and coated glass. It may also be used for cleaning many other sources including aircraft interiors, goggles, helmets, lenses, and plastic and metal surfaces. Prist® cleaner contains no abrasive cleaning agents and cleans without scratching glass or plastic surfaces. This prevents scratches in acrylic windshields that necessitate costly replacement. Unlike other cleaners, Prist® cleaner dispenses as foam and leaves no residue. The cleaning agent soaks into the dirt, grease and insects to remove them with minimum effort. Suitable for interior and exterior cleaning, Prist® cleaner prevents static charge build-up with regular use.

13oz. Can..... P/N 09-02049.....$6.50
Case (12 Cans)..... P/N 09-02049-1..... $78.00

PILOT'S VIEW POLISH & CLEANER

Put a coat of Pilots View Polish on your aircraft windshield and Improve your vision up to 300% in the rain. This product will shed the rain in a huge way! Ideal for GPS, Avionics, Plexiglas Windows and much more! This Product Will Not Scratch Anything! Safe on: Eyeglass/Sunglass lenses, Anti-reflective, protective-coated and shaded lenses, sun visors and plexi windshields

1 oz. Spray..... P/N 09-01583 .....$4.75
27 oz. Sprayer..... P/N 09-01584 ..... $11.90
Kit (27 oz. Sprayer / 1 oz. Spray) ..... P/N 09-01585 ..... $10.95

GLARE PROFESSIONAL POLISH

A non-stick high-gloss all-weather sealant. The finest polish for your car, airplane, boat, motorcycle, glass, stainless steel, fiberglass, chrome, Carbon Graphite, and RV in the world's market. Filters out UV Rays, turns to glass on and within your paint. Contains Glassplexin®. Bonds molecularly to your paint. The most revolutionary polish ever developed. Beyond 22nd century technology. Lasts up to five years.

12oz. P/N 09-01055.....$27.50

GLARE SPIDER

"Another innovation of Ultra 2000 MFG Int'l, Inc.
Beyond 22nd century technology."

GLARE Spider is the most advanced swirl, spider web, and scratch removal product in the market. Ultra high purity metal interlinked fusion of glass particles to Glassplexin forming a unique highly advanced swirl mark remover polish. GLARE Spider fills in permanently, it is NOT a temporary solution - not found anywhere. 12oz.....P/N 09-01061.....$26.75

GLARE ULTRA WASH

"Cleans your vehicle, keeps your shine."

The most advanced wash ever developed. A PH balanced concentrated wash. Safe for all paints and finishes including the new clear-coated paints. New technology that leaves your vehicle clean and glossy like no other vehicle wash can. Contains Glasplexin.

12oz.....P/N 09-01062 .....$11.50

GLARE VINYL • LEATHER ALL WEATHER PROTECTANT

A special blend of natural ingredients and a chemical formulation called SUPPLEXIN which is designed to beautify, soften, deodorize, preserve, and protect against damaging agents found in the everyday usage of your vehicle's interior. This product cleans, conditions, preserves, and protects in one easy step. Contains no harmful silicons, or adverse active ingredients. Blocks harmful UV rays.

12oz. .....P/N 09-01056..... $27.50

GLARE TIRE MAGIC

"The ultimate all in one tire appearance protection product!"

Glare Tire Magic will filter out harmful Ultra Violet Rays from the sun. Extreme temperature resistant formula for all climates. Stops tires from cracking and fading. Gives a beautiful rich natural high gloss finish. Splatter resistant formula. Easy to use - just spray and wipe!

16 oz. ..... P/N 09-01058.....$10.50

GLARE KNOCK OUT!

"Restores all paints, removes & reverses oxidation, and fills in scratches." – Glassplexin actually fills in the surface scratches and reverses oxidation to bring the painted surfaces to a new level of beauty not available with any other compounds. One step compound: NO WAX! NO SILICONE! NO POLYMER! • Great for all clear coats •Easy to apply. Works quickly! Saves time! • Removes swirl marks from all paint including clear coats • Preps paint with the most advanced ingredient - Glassplexin

12 oz. ..... P/N 09-01064 ..... $23.25

GLARE TURBO ACTION WHEEL CLEANER

Glare Turbo Action Wheel Cleaner is the most powerful, effective, & fastest working wheel cleaner on the market. Safe for ALL types of wheels - Aluminum, Chrome, Magnesium - as well as clear coated & painted wheels. Makes your wheels look show room bright and shiny the easy and safe way. Removes and dissolves dirt, grime, brake dust, and grease. Spray on Glare Turbo Action Wheel Cleaner to dirty wheels & hose off with clean water to get your wheels looking like new again!

16oz..... P/N 09-01063.....$8.75

GLARE (GALLON) PROFESSIONAL POLISH • MICRO-FINISH • ULTRA WASH

GLARE Professional Polish – A non-stick high-gloss all-weather sealant. The finest polish for your car, airplane, boat, motorcycle, glass, stainless steel, fiberglass, chrome, Carbon Graphite, & RV in the world's market. Filters out UV Rays, turns to glass on and within your paint. Contains Glassplexin®. Bonds molecularly to your paint. The most revolutionary polish ever developed. Beyond 22nd century technology. Lasts up to 5 years.

GLARE Micro-Finish – "We burn out the competition." – A non-stick high-gloss all-weather sealant that lets paint breathe. Contains Glassplexin®. Ultimate scratch and oxidation removoval for Cars, Planes, Boats, Motorcycles, Fiberglass, Plastic, Stainless Steel, Chrome & Polished aluminum. For use with GLARE Professional Polish.

GLARE Ultra Wash – "Cleans your vehicle & keeps your shine" – The most advanced wash ever developed. A PH balanced concentrated wash. Safe for all paints and finishes including the new clear-coated paints. New technology that leaves your vehicle clean and glossy like no other vehicle wash can. Contains Glasplexin ®.

Glare Micro Finish - 12 oz..... P/N 09-02362 .....$26.95
Glare Micro Finish - Gallon..... P/N 09-01065 ..... $237.95
Glare Pro Polish - Gallon..... P/N 09-01066 ..... $233.95
Glare Ultra Wash - Gallon..... P/N 09-01060 ..... $105.95

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MICRO-MESH WINDSHIELD SCRATCH REMOVAL KIT

Micro-Mesh is a cloth backed cushioned abrasive with a resilient layer of material between the back and the abrasive. When pressure is applied, the abrasive crystals recede into the resilient layer and find an even plane for cutting. The result is a smooth shaving action with an ultra fine scratch pattern which restores scratched, discolored, or damaged fiberglass or acrylics to like-new condition. Kit includes everything needed to repair approximately 30 sq. ft.

Standard Kit (restores up to 30 sq. ft.)..... P/N 09-24700..... $22.75
Large Kit (restores up to 60 sq. ft.) P/N 09-24701. $45.50 .....
Professional Kit (restores up to 100 sq. ft.) ..... P/N 09-24716..... $69.95

MICRO-GLOSS POLISH

Safe for use on bare acrylic, bare polycarbonate, and coated polycarbonate. Tests using Micro-Gloss were completed according to ASTM F791 standards and to USAF specification 16ZK002F (Addendum2) at stress levels of 2000 and 3000 PSI in both dry and humid conditions. Approved for use on the inside and outside surfaces of F-16 aircraft. * Removes fine scratches . * Removes swirls created by improper cleaning methods. * Removes haze and milkiness from interior/exterior windows. * Provides a final polish, leaving you wiht an ultra-clear finish. * Can be applied by hand or machine * Approved for use by Boeing, Spec D6-52021 * Approved for military use, NSN #5350-01-334-89978 oz..... P/N 09-24710..... $11.50

MICRO-SURFACE WINDSHIELD RESTORATION KITS

Micro-Surface Finishing Products, Inc. FAA Repair station #KY2R969K, has been a leader in acrylic restoral for the past 30 years. The following kits were developed for use with rotary buffer. Micro-Mesh is approved by Boeing/McDonnell Douglas, the Military and FAA. All kits come with easy to read instructions. Designed to save you both money and time, these kits will restore acrylic back to optical clarity using a minimum of steps. Re-order individual components as you need them. All kits restore up to 100 sq. ft.

ACRYLIC MAINTENANCE KIT - Remove scratches, halos and haze. • 5" White Foam Sponge Pad• 5" TufBuf, All Natural Lambswool Polishing Pad• 5" Back-up Pad• 8 Ounce Bottle Micro-Gloss• 8 Ounce Bottle Anti-Static Cream• 2 Cotton Flannel P/N 09-24715..... $72.75

LIGHT DAMAGE REMOVAL KIT - Remove minor scratches and scuff. 2-5" Loop Back Discs, Micro-Mesh 1500, 2-5" Loop Back Discs, Micro-Mesh 2400, 2-5" Loop Back Discs, Micro-Mesh 3600, 5" White Foam Sponge Pad, 5" TufBuf All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream 2 Cotton Flannel P/N 09-24720 ..... $97.50

HEAVY DAMAGE REMOVAL KIT - Remove crazing, scratches, and gouges. 5-5" Loop Back Discs, Wet/Dry 120 Grit, 5-5" Loop Back Discs, Wet/Dry 220 Grit, 5-5" Loop Back Discs, Wet/Dry 400 Grit, 2-5" Loop Back Discs, Micro-Mesh 1500, 2-5" Loop Back Discs, Micro-Mesh 2400, 2-5" Loop Back Discs, Micro-Mesh 3600, 5" White Foam Sponge Pad, 5" TufBuf All Natural Lambswool Polishing Pad, 5" Back-up Pad, 8 Ounce Bottle Micro-Gloss, 8 Ounce Bottle Anti-Static Cream, 2 Cotton Flannel P/N 09-24725 ..... $109.75

MICRO-MESH POLYCARBONATE RESTORATION KIT

Excellent for restoring polycarbonate such as Lexan on aircraft, boats, cars, & motorcycles. Will restore up to 100 square feet material. Kit includes: • 5" disc w/ loop 2400 MicroMesh • 5" disc w/loop 3600 MicroMesh • 5" random orbital or drill back-up pad • 5"x 3/4" TufBuf lambswool polishing pad • (2)11.5"x 12" flannel sheets • Instructions • 5" white sponge pad • 8 oz. Micro-Gloss #5 • 8 oz. Micro-Gloss • 8 oz. Final Finish

P/N 09-00490..... $89.50

MICRO-MESH FINISHING KIT FOR WOOD

This kit is designed for craftsmen for use in hand finishing applications and without the mess of steel wool, rottenstone or pumice. MicroMesh may be used on bare or finished wood with wet or dry application method. A high reflective finish, satin or matte finish can be achieved, depending on how many MicroMesh steps are completed. This makes it an excellent product for spot matching of finishes.

P/N 09-24705 ..... $38.50

PLEXIGLASS LENS REPAIR KIT

Protect your investment by restoring crazed, scratched, hazy lenses. Perfect for recognition light lenses, navigation light lenses, and landing light lenses. Lenses can be restored on the plane without removal. Soft Touch pads in this kit fit nicely in your hand and allow you to polish both concave and convex surfaces with ease. Dry pads, store and reuse again and again. P/N 09-01603 ..... $12.50

PERRONE LEATHER PRODUCTS

DEEP CLEANER FOR LEATHER

Perrone's Leather Cleaner / Conditioner is a premium blend of gentle cleansers and light conditioners formulated to clean and rejuvenate finished leather, vinyl and plastic surfaces. Perrone's Leather Cleaner/ Conditioner removes dirt, dust and oils without drying or damaging the surface.

Perrone's Leather Cleaner/ Conditioner helps protect leather from weathering and fading. Leaves leather surfaces soft, supple and smelling like new again. The wipes are treated with the same leather cleaner/ conditioner as in the spray bottle.

32 oz. w/Trigger Spray..... P/N 09-00557 .....$16.50
1 Gallon Refill..... P/N 09-02062 .....$41.50
Sontara Wipes (45 Wipes)..... P/N 09-00559 .....$39.85

DEEP CLEANER FOR LEATHER

This unique formula is custom blended to clean and rejuvenate fine leather surfaces. Leather Cleaner with Conditioner features a unique protective barrier that, when used regularly, helps to prevent soiling from stains such as dirt, grease, ink, grime and body oils.

P/N 09-02120 .....$17.85

LEATHER CONDITIONER

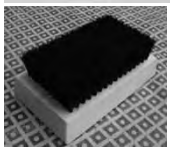
This unique formula is custom blended to clean and rejuvenate fine leather surfaces. Leather Cleaner with Conditioner features a unique protective barrier that, when used regularly, helps to prevent soiling from stains such as dirt, grease, ink, grime and body oils. 16 oz.

P/N 09-02121 .....$16.50

INK REMOVER

Perrone Ink Remover will help to effectively remove most ink and highlighter stains from finished leather surfaces. Removes lipstick and other stains quickly and effectively. Will not harm the finish system of finished leather. 2oz

P/N 09-02122 .....$12.50



LEATHER CLEANING BRUSHES

Specifically designed for leather cleaning, Perrone's Leather Cleaning Brushes dig out tough soils and stains from the pores of natural and corrected grained leather. For best results use in conjunction with Perrone's cleaning products. Can also be used for suede and nubuck. Sturdy Wood Block with 3-1/2"x2" Bristle Bed..... P/N 09-02123 .....$19.60

PERRONE LEATHER CARE & CLEANING KIT

This kit features the professional-use aviation leather cleaning products in a custom leather bag. KTS-09 Leather Cleaning & Care Kit

P/N 09-04274 ..... $59.85

HEADLIGHT REPAIR & SCRATCH-AWAY RESTORE KITS

PLEXIGLASS LENSE REPAIR KIT - Removes crazing, scratches, scuffs, and haze from navigation light lenses, recognition light lenses and landing light lenses. Not necessary to remove lense to restore to optical clarity. PN 09-01603 ..... $12.50

SCRATCH AWAY HEADLIGHT RESTORE KIT - This kit will remove haze, cloudiness, and light scratches. Process will resurface the lense rather than fill in scratches. Once the process is complete, damage will not return. This is a spot repair kit. We also have larger kits available.

PN 09-02170 ..... $15.60

ACRYLIC HEADLIGHT LENSE RESTORATION KIT - Easy to use double sided MICRO-MESH SOFT TOUCH PADS make removing cloudiness and haze from lenses, lense covers, tail lights, tail light blackouts, and bug deflectors a snap! Each kits contains: 3 IN. x 4 IN. double sided pads in 120/220, 400/1500, 2400/3600, 4000/12000, 1 oz. bottle MICRO-GLOSS liquid abrasive, and 2 cotton flannel cloths. Clean, dry, and reuse over and over - A FANTASTIC VALUE! PN 09-02172 ..... $34.50

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GRANITIZE CLEANING PRODUCTS

GRANITIZE METAL POLISH SYSTEM

Simple but effective system of six polishes designed to polish painted surfaces, aluminum 22916T6 & 2024T6 both clad and bare, and other metals including steel and titanium. All polishes are color coded to reduce cross contamination and aid in taking the guesswork out of any polishing procedure. When used properly, The Granitize System will produce a smooth, highly reflective mirror-like surface on brightwork that can be treated with Xzilon molecular adhesion to maintain the finish.

FINISH

XMP-S METAL POLISH (SUPERFINE) - Final polish for a mirror like finish. Can also be used on painted surface

P/N 09-02181 ..... $48.50

XMP-M METAL POLISH (MEDIUM) - For Light oxidation/scratches, Rain Spotting. Can also be used on painted surfaces

P/N 09-02184 ..... $48.50

XMP-F METAL POLISH (FINE) - Color: Yellow. Use on: Swirls, Very fine scratches, Can also be used on painted surface.

PN 09-02183 ..... $48.50

CUTTING

XMP-C METAL POLISH (COARSE) - For Medium oxidation/scratches

P/N 09-02233 ..... $48.50

GRANITIZE HARD SURFACE CLEANER CONCENTRATE

Hard Surface Cleaner is a powerful all purpose cleaner. This blue solution is designed for post flight wipedown or general dry wash cleaning of complete airframe. It is concentrated blend of alcohol and grease cutting agents that contains no soap or ammonia and can be diluted for lighter cleaning jobs. It is economical, easy to use and leaves no residue or streaking. Safe for use on Xzilon 3 coated aircraft. Aviation Industry Certified.

Gallon ..... P/N 09-04340 ..... $28.46
5 Gallon ..... P/N 09-04341 ..... $128.09
55 Gallon ..... P/N 09-04342 ..... $968.00

GRANITIZE SPRAY AND SHINE CLEANER / COLOR BRIGHTENER

Spray & Shine is an exterior, light duty cleaner. This pink liquid is a spray on, wipe off formula to clean, enhance and maintain painted surfaces and brightwork. It is recommended for removing bugs, smudges, spotting and light carbon buildup on exterior surfaces. This product is highly recommended for post flight wipe down of leading edge and engine inlet debris. Leave on as a film during coastal or tropical parking to preserve brightwork treated with Xzilon 3. It is also used as a lubricant/cleaner when micro-polishing paint with Grana-Clay Bars. Safe for use on Xzilon 3 coated aircraft. See XC11CL-Q on page 11 for interior use. Aviation Industry Certified.

Gallon ..... P/N 09-04334 ..... $29.61
5 Gallon ..... P/N 09-04335 ..... $133.23
55 Gallon ..... P/N 09-04336 ..... $1,007.00

GRANITIZE WASH AND WAX CONCENTRATE

Wet Wash is a multi-use product that can be used on General, Corporate and Commercial aircraft for new or in-service aerospace paint. This liquid contains carnauba wax and will remove moderate carbon build-up and light stains. It has a low usage cost because it is highly concentrated and can be watered down to meet the specific needs. The pH formulation and low alkalinity has excellent sheeting action, and the high foaming action lifts and holds dirt in suspension for thorough rinsing. Safe for use on Xzilon 3 coated aircraft.

Gallon ..... P/N 09-04349 ..... $25.68
5 Gallon ..... P/N 09-04351 ..... $115.56
55 Gallon ..... P/N 09-04352 ..... $983.00

GRANITIZE ZERO V.O.C DEGREASER

Zero V.O.C. Degreaser is an environmentally friendly, aggressive, concentrated, non caustic all purpose degreaser. It is bio-degradable and effective even when diluted 20:1 which makes it a low usage item. This is the ideal product for cleaning engine cowlings, landing gear, wheel wells and aircraft bellies. This green liquid contains fortified surfactants that help to loosen and remove dirt and grime. It is great as a wipe on, but can be sprayed on and pressure rinsed for a quick effective cleaning. Available in gallon, 5 gallon and 55 gallon containers.

Gallon ..... P/N 09-04337 ..... $27.82
5 Gallon ..... P/N 09-04338 ..... $125.19
55 Gallon ..... P/N 09-04339 ..... $946.00

GRANITIZE OXIDATION REMOVER FOR PAINT

Oxidation remover is formulated as a medium range aggressive cleaner. It is ideal for removing light to medium scratches and oxidation from all painted surfaces. Quickly and effectively removes imperfections while buffing out oxidized paint when detailing which helps to minimize work time. This white crème has medium grade abrasives in it and requires very little product to get the job done. Can be applied by hand or machine. Available in gallons.

Gallon P/N 09-04333 ..... $49.94

CARNAUBA CREME PROTECTANT

Carnauba Crème Protectant contains the highest quality fortified carnauba wax that produces a deep gloss and long lasting protection. This tan crème is easy to apply and easy to remove. It provides great durability and an excellent shine. It will fill most "spider web" scratches and will provide protection from the sun's UV rays. It is best used on new paint. Applied either by hand or orbital buffer. Available in gallons. Aviation Industry Certified.

Gallon ..... P/N 09-04355 ..... $39.94

GRANITIZE HI GLOSS TIRE DRESSING

Hi-Gloss Tire Dressing is perfect for that "Show" aircraft look as it is a highly durable, concentrated, water-based dressing that can be mixed to the desired gloss level. This milky white product leaves a long lasting hi-gloss finish because it contains the highest quality silicone and no harsh solvents. The gloss can be reduced by mixing water with the product. It will shine and protect tires and any other vinyl, rubber or plastic surface. Allow product to dry, or wipe off with a sponge, before rolling wheels.

Gallon ..... P/N 09-04353 ..... $48.44
5 Gallon ..... P/N 09-04354 ..... $217.98

CS

AERO COSMETICS CLEANING PRODUCTS

WASH WAX ALL

Wash Wax ALL is a waterless wash and wax that is safe to use on all aircraft surfaces. Leaves a non-stick anti-static UV protective coating on everything you clean. Removes dirt and bugs without scratching, simply spray on and wipe dry. Safely cleans and protects aluminum, composite, and fabric aircraft. Also excellent on aircraft windows and avionics. Meets (or *conforms to*) Boeing aircraft cleaning specification Exterior D6-17487 and interior D6-7127M. Wash Wax ALL is water based, non-toxic, biodegradable, and contains no alcohol or ammonia. Also use our Wash Wax Mop for hard to reach areas.

Pint ..... P/N 09-02514 ..... $8.95
Quart ..... P/N 09-00493 ..... $14.75
Gallon ..... P/N 09-00494 ..... $27.80

WASH WAX ALL DEGREASER

Wash Wax ALL (Degreaser) is a waterless wash and wax. Removes exhaust soot, Carbon residue, oil, and grease from all aircraft surfaces including belly and landing gear. Simply spray On and wipe dry. Safely cleans and protects aluminum, composite, and fabric aircraft. Meets Boeing aircraft cleaning specification Exterior D6-17487 and interior D6-7127M. Wash Wax ALL (Degreaser) is Water Based, non-toxic, biodegradable, and does not contain Alcohol or Ammonia. Use with our Wash Wax Mop for hard to reach areas.

Pint ..... P/N 09-02418 ..... $9.95
Gallon ..... P/N 09-00496 ..... $28.75

AERO BELLY WASH

Belly Wash will clean the dirtiest aircraft bellies. Removes exhaust soot, carbon residue, oil, and grease from all aircraft surfaces including the belly and landing gear. Simply spray on and wipe dry. Safely cleans aluminum, composite, and fabric aircraft. Meets Boeing aircraft cleaning specification D6-17487 and interior D6-7127M. Belly Wash is Water Based, non-toxic, biodegradable, and contains no alcohol or ammonia.

Pint ..... P/N 09-02518 ..... $14.75
1/2 Gallon ..... P/N 09-02410 ..... $39.50

AERO PLEX ALL

Plex ALL an aircraft window cleaner that is safe to use on all aircraft windows. Leaves a non-stick, anti-static UV protective coating on both glass and plastic aircraft windows. Safe on heated glass and avionics. Sheds (possible *Beads up and sheds*) water for better visibility. Removes dirt and bugs without scratching. Simply spray on and wipe dry. Meets Boeing aircraft cleaning specification D6-17487 Plex ALL is water-based, non-toxic, biodegradable, and contains no alcohol or ammonia.

8 oz. ..... P/N 09-02517 ..... $9.75
Gallon ..... P/N 09-02519 ..... $24.85

AERO CABIN CLEANER

Cleans and removes beverage spills and stains from aircraft carpets, seats, tray tables, side panels, cockpit and galleys. Works well with the Aero Scrubber.

Pint ..... P/N 09-00497 ..... $9.95
1/2 Gallon ..... P/N 09-02520 ..... $24.00

AERO SAFESOLV SOLVENT

All purpose citrus solvent. Removes tar, oil, hydraulic fluid, adhesives and gum. A safe, effective alternative to toxic chemicals that is safe to use on paint, plastic, glass, bare metal, carpet and seats.

8 oz. ..... P/N 09-00499 ..... $10.50
1/2 Gallon ..... P/N 09-02521 ..... $35.75

AERO LEATHER SOAP

Leather Soap gently cleans and removes dirt, grease, body oils, and lotions from leather and vinyl. Meets Boeing Aircraft Interior cleaning specification D6-7127M. Condition with Leather Care. For everyday cleaning use Wash Wax ALL (Blue). Water Based, Nontoxic, biodegradable, Alcohol and Ammonia free. Does not contain animal oils, solvents, or petroleum products.

Pint ..... P/N 09-00502 ..... $9.95
1/2 Gallon ..... P/N 09-02516 ..... $23.65

AERO LEATHER CARE

Leather Care restores, moisturizes, conditions, and protects Aircraft leather and vinyl. Repels dust and dirt without leaving an oily residue. Provides a long lasting barrier against drying and cracking from damaging ultra-violet rays.

Pint ..... P/N 09-00503 ..... $8.85
1/2 Gallon ..... P/N 09-02522 ..... $27.75

AERO RUBBER CARE

Easy to use water-based rubber and de-ice boot care product. Restores and protects rubber, giving that new semi-gloss look without leaving oily residue. Excellent on weather stripping, tires or any rubber or plastic item.

Pint ..... P/N 09-00505 ..... $9.95
1/2 Gallon ..... P/N 09-02515 ..... $25.50

WATER SPOT REMOVER

Removes hard water spots from paint, gelcoat, plastic, chrome, aluminum and stainless. Clear Coat safe, waterbased. To prevent water spots, use Wash Wax ALL. Use Aero Scrubber to softly scrub without scratching.

Pint ..... P/N 09-00507 ..... $9.90
1/2 Gallon ..... P/N 09-02523 ..... $22.65

AERO POLISH ALL

Polish ALL is an easy-on, easy-off, liquid finishing polish. It will remove oxidation and fine scratches from paint, plastic (Aircraft Windows), aluminum, and other metals. Polish ALL can be applied by hand or with a power polisher. Keep the finish clean and protected after polishing by applying Wash Wax ALL.

8 oz. ..... P/N 09-00508 ..... $15.50
1/2 Gallon ..... P/N 09-02524 ..... $43.85

WASH WAX CLAY

Safely removes surface contaminants such as over spray, tree sap, Acid Rain & Rail Dust allowing wax to bond better. Use on paint, plastic, glass, chrome, gel coat and other surfaces. For use on aircraft, RVs, cars, boats, and motorcycles.

2 oz. ..... P/N 09-00512 ..... $19.85

AERO SCRUBBER

The Aero Scrubber is a soft, non-scratching, long-lasting, reusable scrubber pad. Use with Wash Wax ALL to help remove bugs from leading edges or use with Wash Wax ALL (Degreaser) or Belly Wash on tough cleaning jobs such as aircraft bellies, engine areas, wheels and tires.

Pack of 5 Pads ..... P/N 09-00509 ..... $33.50
Scrubber Kit - Includes 4 pads and one holder
P/N 09-01616 ..... $26.50

AERO TOWELS

Aero Towels are an All purpose reusable Microfiber towel. Super soft, absorbent, long-lasting and lint-free. The best towel for all of your aircraft cleaning needs. Four (4) washable 16"x16" Aero Towels per package4 pack ..... P/N 09-00510 ..... $9.95

AERO DIAPER

AeroDiapers are soft, absorbent, lint-free, 100% cotton 1-ply diaper for all your cleaning and polishing needs. 12 washable 16"x18" Aero Diapers per package ..... P/N 09-00511 ..... $27.50

AERO STARTER KIT

ALL you need to get started with Wash Wax ALL
Kit includes: 16oz Wash Wax ALL, 16oz Wash Wax ALL (Degreaser), 4oz Belly Wash, Aero Scrubber Pad , Package of 4 Aero Towels
Starter Kit ..... P/N 09-00513 ..... $33.85

AERO LEATHER/VINYL KIT

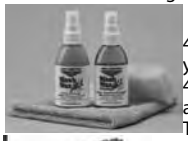
The Leather Vinyl Care Kit is ALL you need to clean, restore, and protect leather and vinyl in one kit. Kit Includes: one 16oz Leather Soap, one 16oz Leather Care, one package of 4 Aero Towels, one mini Aero Scrubber, and a 4oz Wash Wax ALL.

..... P/N 09-00514 ..... $28.50

AEROSCRUBBER BUG AND BELLY KIT

All you need to get those stubborn bugs and hard to clean bellies looking new again. The Aeroscrubber Bug and Belly Kit includes two soft, non-scratching, long-lasting, reusable Aero Scrubber pads, an Aero Scrubber handle, 4oz Wash Wax ALL, 4oz Belly Wash and two Micro Fiber Aero Towels.

Bug and Belly Kit ..... P/N 09-01616 ..... $26.50



TRAVEL KIT

4 of our most popular products packaged to fit in your glove box. Kit includes: 4oz Wash Wax ALL, 4oz Wash Wax ALL (Degreaser), One Aero Towel and a mini Aero Scrubber.

Travel Kit ..... P/N 09-00515 ..... $7.85

AERO WASH WAX MOP

Specifically designed for aircraft and is the only mop with two sides. One wet and one dry. Now you can waterless wash and wax with the reach and leverage of an extension pole. No ladder needed. Customers report time savings up to 50% over waterless hand application. Simply spray Wash Wax ALL on the Wet Side of the mop, wipe the aircraft with the wet side, flip the mop over, and wipe dry with the dry side.

Wash Wax Mop. ..... P/N 09-02526 ..... $94.85
Mop Pads (Pack of 4) P/N 09-02527 ..... $26.75
Mop Scrubber (1 each) ..... P/N 09-02528 ..... $29.95
Mop All - a multi surface floor and glass cleaner that is formulated to be used with the Wash Wax Mop. Safe to use on all floor types.
Pint ..... P/N 09-02529 ..... $9.95

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CESSNA AIRCRAFT CLEANING PRODUCTS

FLYERS SPEED WAX

This carnauba-enriched waterless aircraft dry wash is a high-gloss protectant with an easy-on, easy-off application process. Can be used to remove carbon, oil, bugs and airborne contaminants. Safe on all aircraft painted surfaces including composite and fabric.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02713 .....$19.50

QUICKTURN

Quick Turn keeps aircraft looking just waxed. Will remove harmful contaminants before they damage aircraft surfaces. Use Quick Turn between flights or as often as needed when wet washing or waxing is not required. Product is safe for use on exterior painted surfaces, polished aluminum and de-ice boots. Not intended for interior use.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02657 .....$22.95

ULTRA MAGNUM MULTI-PURPOSE AIRCRAFT DEGREASER

Ultra Magnum is a non-corrosive, heavy duty alkaline cleaner designed to remove carbon, oil and bugs from aircraft exterior painted surfaces.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-03478 .....$23.50

AIRCRAFT LEATHER CLEANER

Will effectively clean, condition and preserve the beauty of new and worn leather. Will not bleed onto fabric. Contains no silicone or heavy waxes that can damage stitching or become slippery.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02659 .....$16.95

M-RON GLASS CLEANER / WAX

M-Ron Glass is not your ordinary wax. It is a CLEANER & WAX so you are not waxing over a dirty surface or getting a waxy build up. That's why M-Ron Glass gives you such an AMAZING SHINE! Because of how this works, it is recommended that once applied; let it sit and bake in the sun for 15 to 30 minutes. You will get a deeper shine and a higher luster than you would if you were to apply it and take it off right away. It will NEVER bake itself to the surface!
12 oz..... P/N 09-03483 .....$15.95

AIRCRAFT STAIN REMOVER

Aircraft Carpet and Upholstery Stain Remover is a powerful stain and spot remover. Will remove stains caused by grease, dirt, wine, coffee, juice, soft drinks, tea, food and more.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry. P/N 09-02658 .....$15.50

MICROFIBER DETAILING CLOTHS AND TERRYCLOTH APPLICATORS

Microfiber Detailing Cloths make cleaning your aircraft easy, inside and out. These scratch and lint free cloths work well on aircraft instrumentation, windows, gauges, screens, painted and unpainted surfaces. Can also be used for applying and removing Cessna Detailing Products on aircraft surfaces.
The multi-dimensionally knit fabric will not unweave or wear out, but due to the quantity of dirt lifted and trapped, the cloths should be frequently machine washed. The cloths will withstand several hundred washings with standard laundry detergents. Terry cloth applicators are used for applying wax and cleaning leather seats.
This Cessna detailing product has been approved by Cessna Aircraft Company. It has been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior. Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning product that is among the best in the industry.
P/N 09-02660 .....$15.25

AIRCRAFT GRADE MICROFIBER WASH MITT

The Aircraft Wash Mitt - like no other mitt - has been custom designed specifically for aircraft use. Its extra-long length (without abrasive wristband) protects your delicate windscreens and other surfaces from accidental scratches from watches and jewelry! You will enjoy the fully lined protection for delicate hands of lady pilots and co-pilots! PLUS your can of spray cleaner stores easily inside the mitt for safe, quiet storage inside your plane.
The Aircraft Wash Mitt is made from two of the softest materials available - Chenille and Microfiber. It's an absorbent, super soft, and non-scratching mitt that delivers an amazing wash like no other! The expanded surface area of the Chenille fibers allows the mitt to stay cleaner 3x longer than any other wash mitt.
Clean without worry because this product delivers a premium wash without abrasion. It is safe on all acrylic aircraft or marine windscreens and polycarbonate windows. Also great for custom or collector automotive paint finishes. The mitt can be laundered and re-used for many years!
P/N 09-04087 ..... $7.25

CESSNA AIRCRAFT CLEANING KIT

This Cessna detailing kit has been approved by Cessna Aircraft Company. The products provided in the Aircraft Cleaning Kit have been developed and tested by industry professionals specifically to protect and safely care for your aircraft's exterior and interior.
Cessna remains committed to it's legendary customer service by authorizing and approving this safe, reliable, and high quality cleaning kit that is among the best in the industry. Cessna has built a reputation for rising above the competition and their approval of this Aircraft Cleaning Kit is another example of their continuous attention to customer care.
Your Cessna Aircraft Cleaning Kit contains the following detailing products: • Flyers Speed Wax (16 oz) • Quick Turn (16 oz) • Ultra Magnum (16 oz) • Plexiclear (16 oz) • Leather Cleaner (8 oz) • Stain Remover (8 oz) • Terry Cloth Applicators (2) • Microfiber Cloths (2) • Care Guide • Carry Bag P/N 09-02661 ..... $139.95

AEROLIFE POLYSHINE AIRCRAFT POLISH

Aircraft Polish with Tef Easy to use liquid Polymer formula polishes and protects, acts like a glaze to eliminate microscopic imperfections in the aircraft finish, helps reduce drag, adds to increased speed and keeps the bugs off leading edge components. Contains UV inhibitors for protection from the UV rays, is PH compatible for the new LSA market place. "Contains No Silicone".
For optimum performance application aircraft must be clean, AeroLIFE PolyShine with Tef is a Premium Aircraft Polish and Sealer, contains no cleaning agents. May be applied by hand or machine by the professional AeroLIFE complete line of cleaning products can be found at www.aerolifeindustries.com all products Made In the USA. 8 oz. P/N 09-02536 ..... $6.50

AEROLIFE AIRCRAFT CLEANER & BELLY WASH

Emulsifies oil and scum, the non-foaming biodegradable formula cleans without "Phosphates". The water-based degreaser also cleans aircraft carpets, upholstery, fabrics and leaves a pleasant fragrance. Economical concentrate 50/50 ratio saves money; one gallon makes two gallons of cleaner and can be applied with a power washer or by hand. Can also be used in the engine compartment and is safe on rubber products and hoses. The ladies love this product for washing machines, as it does a great job removing oil from work clothes. Can also be used to clean up oil spills.

1 oz. ..... P/N 09-02539 ..... $2.95
Gallon ..... P/N 09-02533 ..... $28.75

AEROLIFE AEROWAX AIRCRAFT WAX

AeroWax Aircraft Wax is made from Poly-Carnauba. Easy Application and Aerospace Developed. 16 oz. .....
P/N 09-02535 $14.95

METAL ARMOR METAL POLISH

Formulated to give incredible results on the following metals: Aluminum, brass, bronze, chrome, copper, gold, magnesium, nickel, pewter, platinum, silver, stainless steel, and sterling silver. Not recommended for use on plated surfaces with the exception of chrome. Can be safely and effectively used on paint, clear coat and power-coated surfaces. Can be applied by hand or by buffer. 8oz bottle.

P/N 09-02569 ..... $19.95

REKRETE WATERLESS CONCRETE CLEANER

Clean Your Oil Stains with No Water, No Pressure Washer, In Less Time and For Less Cost with ReKRETE Waterless Concrete Cleaner! Power washing sends detergents and oils directly into the storm water systems. ReKRETE 's bio-enzymes consume stains reducing contaminated water run off. ReKRETE works with its own specific gravity by penetrating deep into the pores of the concrete where petroleum-based stains are trapped. ReKRETE then breaks down the hydrocarbon chain of the petroleum-based stains. Once the chain is broken ReKRETE decomposes and dissolves the hydrocarbons with bio-organic compounds that actually consume the stains.

10-lb ..... P/N 09-03498 ..... $31.50
30 lb ..... P/N 09-03501 ..... $92.80

METAL ARMOR PAINT & HARD SURFACE POLISH

Specially formulated to address polishing of clear coat paints, enamels, lacquers, acrylics, powder-coated surfaces, polycarbonates, ABS plastics, glass, fiberglass, Corian™, and cultured marble. Can also be used as a second step on all metal surfaces. Creates an unmatched finish and treats the surface with a protective barrier when applied as directed. 8oz bottle.

P/N 09-02570 ..... $22.50

METAL ARMOR FINAL POLISH & SEALANT

Cutting edge technology lead to the creation of this "next level" formula. We recommend this product for all surfaces as a "Final Step." It is a PDF (Petroleum Distillate Free) blend that offers the highest degree of reflective qualities while adding a barrier that protects against oxidation, UV rays and "acid" rain. The product can be applied by hand or by buffer. Leaves crystal clear results and "No Swirls" when applied as directed. A must on reds and blacks. 8oz bottle.

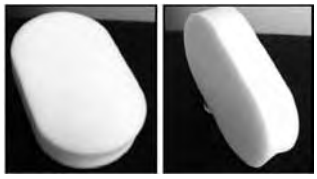
P/N 09-02571 ..... $20.95

METAL ARMOR BY HAND TOOL KIT

This kit is specially designed to be used as an application and removal system of our products when using by hand. The materials have been developed using specially developed foams and optical quality micro-fiber cloths. The foams do not create static and produce an absolute scratch free result. Can be washed and resused many times.

P/N 09-02575 ..... $16.95

METAL ARMOR MATERIAL APPLICATION PAD (WHITE)



This Pad is made from material that is compatible with Metal Armor Products. It is designed as a by hand applicator for their products. It produces no static and produces scratch free results. Can be washed and re-used many times. Can also be used as applicator for other products. P/N 09-02573 ..... $4.65

METAL ARMOR DETAILING PAD (BLACK)

This pad was designed to act as a removal device of (spent) material after it has been used. The pad is very absorbent and collects the residue before using the polishing cloth. The pad can be washed and re-used many times. It is static free and produces no scratches.

P/N 09-02574 ..... $4.60

CS

RPM TECHNOLOGY CLEANING PRODUCTS

POLYGONE 310-AG

PolyGone™ stripping agents are unique formulations that remove polysulfide (PRC) and silicone RTV sealants from metal, ceramic, and some plastic substrates. The top polysulfide producers include PRC DeSoto (now PPG), AC Tech, and Flamemaster. The top silicone producers are GE, Dow, and Wacker. Both polysulfide (polysulphide) and silicone RTV are difficult to remove completely since they actually bond into surface/substrate. The typically, sealant removal method requires scraping that results in damaging the substrate. There are also products that try to "dissolve" the sealants but due to their inertness, this does not work. PolyGone however, reacts with the polymers chemically and breaks them down so they can be rinsed away without damage to the surface/substrate. This offers significant advantages over other removal methods. PolyGone emulsifiers are specialty blended chemistries that wet and penetrate the polymer and relatively quickly emulsify it. This emulsification prevents redeposition of the reaction by-products and allow for water rinsing (except PolyGone 535 which requires an alcohol rinse). The polysulfide (polysulphide) sealant remover is also available as a gel for use in vertical, inverted and non-immersion applications. PolyGone is effective at removing silicone RTV and polysulfide (polysulphide) sealants at room temperature, are fast acting and environmentally friendly as opposed to regularly used solvents. PolyGone is currently being used by several MRO organizations as a sealant remover.

6 oz. ..... P/N 09-03492 ..... $29.50
Gallon ..... P/N 09-03491 ..... $144.95
5 lb. Tub ..... P/N 09-03493 ..... $294.00

POLYWIPES

RPM Technology is proud to introduce a revolutionary product for anyone using sealants, mastics, adhesives, silicones, paints, drilling oils, or greases. PolyWipes contain no solvents or abrasives; no fuss, and no mess! Why clean your hands with a product that has a NFPA heath rating of 1 and is flammable? PolyWipes have a health rating of 0 and are NOT flammable! They safely remove uncured or partly-cured adhesives and sealants by breaking the surface tension between the material and the substrate. The material then transfers to the wipe for disposal. Can be used anywhere adhesives or sealants are applied. To clean up after applying sealant to fuel tanks, access doors, windshields, and any other location where sealants are used. Biodegradable – a "green" product, Non-Toxic – eliminates the need to dispose of hazardous solvents, Not flammable, unlike other wipes, Mild – employees may not need hand protection to use this product, NFPA rating is 0,0,0, Inexpensive – less expensive than cloth towels and solvents .....

Small box (25 wipes) ..... P/N 09-02447 ..... $27.75
Large Box (150 Wipes) ..... P/N 09-02448 ..... $53.65

EOX AIRCRAFT CLEANER

eOx Aircraft Cleaner (AC) is a specialty product for the aviation industry. eOx AC is suitable for external and internal cleaning of virtually all metal and/or painted surfaces. Completely removes difficult substances such as hydraulic oil, grease, carbon, brake dust, "blue stains", and dirt safely and easily. Removes chemicals and dirt from the grain of the paint thus making it look new and extending its useful life. eOx AC conforms to Boeing D6-17487, Douglas CSD #1, AMS 1525B and AMS 155A. Non-toxic, Non-flammable, Non-hazardous - Not subject to dangerous goods regulations., No phosphates, acids or silicones High biodegradability (tested by the University of Ghent, Belgium), Very economical to use., Contains no phosphates, acids, silicones and is non-butyl., Safe to use on all surfaces including metal, plastic & rubber materials with no stock loss., Fast, intense cleaning action surpasses other cleaners' performance., Cleaned surfaces become slightly antistatic and corrosion inhibitive for up to 4 weeks., Can be effective used as a spray-on & wipe-off process., Safe for use in high-pressure washers, immersion systems and ultrasonic machines., Fresh smell – NOT citrus.

Quart ..... P/N 09-02449 ..... $11.45
Gallon ..... P/N 09-02451 ..... $27.65

EOX AIRCRAFT HYDRAULIC FLUID REMOVER

eOx Aircraft Hydraulic Fluid Remover (AHFR) is a proprietary cleaner designed to easily remove all hydraulic fluids, baked on carbon, and corrosion protecting compounds. An excellent replacement for chlorinated products and solvent based cleaners. Meets AMS–1526B. Application: specially developed to remove sticky hydraulic oil deposits from the aircraft fuselage, wheel wells, landing gear, wings, and any area or part where hydraulic fluid accumulates. eOx AHFR also removes numerous oils, greases and stubborn carbon deposits; especially from around engine exhaust areas. Ready to use and intended as a spot cleaner on the aircraft. Non-toxic, Non-flammable, Non-hazardous - Not subject to dangerous goods regulations. No phosphates, acids or silicones, High biodegradability (tested by the University of Ghent, Belgium) Neutral pH of 6-8, Very economical to use. Contains no phosphates, acids, silicones and is non-butyl. Fast, intense cleaning action surpasses other cleaners' performance. Can be effective used as a spray-on & wipe-off process. Safe for use in high-pressure washers, immersion systems and ultrasonic machines. Fresh smell – NOT citrus

Quart ..... P/N 09-02452 ..... $27.95
Gallon ..... P/N 09-02453 ..... $67.75

DIGESIL NC GEL

Digesil NC de-polymerizes uncured and cured silicone elastomers, resins, oils, and greases from components, surfaces, tools, electronics and process equipment used in engineering, construction, and glazing industries. Digesil NC is effective and fast working. It has a high flash point for safety and contains less than 0.2% aromatics. Benefits: Quickly dissolves cured silicone, Leaves a silicone free surface, Chlorinated and fluorinated solvent free, Negligible aromatic solvent content, Environmentally responsible, Low odor for operator comfort, High flash point for safety, Low density for ease of handling, Rinses with water or solvent, Safe on glass, metal, and most plastic (except nylon), Safe on paint and powder coating, Water free. Specifications: Appearance: Liquid, Color: Brown, Odor: Aliphatic-hydrocarbon, Sp.Gr.: 0.82

6 oz. ..... P/N 09-02454 ..... $24.50
5 lb. ..... P/N 09-02455 ..... $199.50
1 Gallon ..... P/N 09-02456 ..... $72.85

DIGESIL NCX

Digesil NC de-polymerizes uncured and cured silicone elastomers, resins, oils, and greases from components, surfaces, tools, electronics and process equipment used in engineering, construction, and glazing industries. Digesil NC is effective and fast working. It has a high flash point for safety and contains less than 0.2% aromatics. Benefits: Quickly dissolves cured silicone, Leaves a silicone free surface, Chlorinated and fluorinated solvent free, Negligible aromatic solvent content, Environmentally responsible, Low odor for operator comfort, High flash point for safety, Low density for ease of handling, Rinses with water or solvent, Safe on glass, metal, and most plastic (except nylon), Safe on paint and powder coating, Water free Specifications: Appearance: Liquid, Color: Brown, Odor: Aliphatic-hydrocarbon, Sp.Gr.: 0.82

Gallon ..... P/N 09-02457 ..... $85.75

POLYSCRAPER KIT

Red Canvas Pouch with black trim. Kit contains 10 Polyscrapers, each having its own pocket. Pouch can be rolled and secured with black tie. ..... P/N 09-02458 ..... $48.50

CS

SPRAY NINE CLEANERS & DEGREASERS

SPRAY NINE MULTI-PURPOSE CLEANER

Cleans • Disinfects • Degreases • Deodorizes • Removes Stains Tough Task Cleaner - Spray Nine's no-nonsense power tackles your worst cleaning jobs, even when others fail. And it does it FAST! Money Saver - The only product necessary to clean up facilities & maintenance costs. One "does it all" formula reduces chemical use and gets the job done with less labor in less time than the competitors. Broad Spectrum Disinfectant - EPA-registered disinfectant kills harmful germs like HIV-1, Staphylococcus aureus, Salmonella choleraesuis & E. coli in just 45 seconds. Also helps prevent cross contamination. Authorized by USDA for use in federally inspected meat & poultry plants with an C-1 rating.

24 oz. Multi-Purpose ..... P/N 09-01974 ..... $5.50
25 oz. Multi-Purpose ..... P/N 09-01975 ..... $4.95
32 oz. Multi-Purpose ..... P/N 09-01976 ..... $6.95
1 Gallon Multi-Purpose ..... P/N 09-01977 ..... $22.60
5 Gallon Multi-Purpose ..... P/N 09-01978 ..... $72.75
55 Gallon Multi-Purpose ..... P/N 09-01979 ..... $657.50

EARTH SOAP CONCENTRATED CLEANER/DEGREASER

FROM SPRAY NINE

Premium Environmentally Preferable Cleaner Cutting-edge biodegradeable technology combines powerful surfactants with low emulsifying action to create Earth Soap, a potent, yet environmentally thoughtful product. Earth Soap's innovative formula dissolves dirt, grease, grime and other hard-to-remove soils from most hard, washable surfaces. This versatile, concentrated cleaner may be "custom-formulated" by diluting in any proportion with water - from 1:1 for heavy soil loads to 50:1 for routine light-duty cleaning. Additionally, Earth Soap contains NO solvents, butyl, phosphates, or other harsh chemicals. Earh Soap is low-emulsifying and will not negatively impact oil/water separators and other pollution abatement systems. Corrosion Inhibiting - Corrosion-inhibiting formula cleans metal parts without damaging parts or parts washers (metal and plastic, traditional and heated up to 180 degrees F) Ideal uses: Dip Tanks • Engines • Concrete/Hangar Floors • Vehicles (Inside & Out) • Wash Racks • Tools & Equipmen • CTK Took Kits • Plastic & Vinyl • Floors & Walls • Parts Washer (both traditional and heated up to 180°F)

32 oz. ..... P/N 09-01980 ..... $7.95
1 Gallon ..... P/N 09-01981 ..... $21.50
55 Gallon ..... P/N 09-01983 ..... $753.00

GREZ-OFF HEAVY DUTY DE-GREASER

FROM SPRAY NINE

When Nothing Else Cuts It - Grez-Off works hard so you don't have to. This heavy-duty answer to heavy-duty grease and grime leaves engines, machinery, asphalt, garage floors and more whistle clean. Top Rated Track Record - Twice rated the #1 degreaser in an independent consumer report with top marks for effectiveness, safety and environmental impact. Made With You And Your Environment In Mind - Biodegradable, non-flammable formula hits hard and fast with less impact on user and environment. Finally a water based product that really works!

Ready-to-Use Formula is Gentler to the User: • Non-Flammable • Non-Combustible • No Acids • No Fumes or Unpleasant Odors

32 oz. ..... P/N 09-01984 ..... $7.85
5 Gallon ..... P/N 09-01986 ..... $87.75
55 Gallon ..... P/N 09-01987 ..... $921.00

POLY SCRUB HEAVY-DUTY HAND CLEANER

FROM SPRAY NINE

Industrial Strength Paste-Type Hand Cleaner - Hits hard with millions of dirt busting "poly scrubbers" to dig out and mop up even the toughest soils.

Tough On Dirt, Gentle On Hands - Contains no harsh solvents that dry out hands yet powers off dirt, grease, ink, adhesives, hydraulic fluid, carbon and more while leaving behind a refreshing lemon-lime fragrance.

Fights Foul Odors - Combats fish, onion, garlic, fuel, oil, lubricant & printer's ink odors.

Poly Scrub Easily Removes:
Grease • Oil • Hydraulic Fluids • Glues • Ink • Asphalt • Varnish • Paint • Carbon • Adhesives • Tar • Stains • Cement

3.8 Pound ..... P/N 09-01991 ..... $18.50
26 Pound ..... P/N 09-01992 ..... $139.75

COCO SCRUB HEAVY-DUTY HAND CLEANER

FROM SPRAY NINE

Tough On Dirt - Industrial strength hand cleaner formulated with millions of dirt busting poly "scrubbers" that dig out and mop up even the toughest soils.

Easy On Hands - Fortified with emollients to prevent drying & cracking. Leaves behind a pleasant coconut fragrance.

Fights Foul Odors - Combats fish, onion, garlic, fuel, oil, lubricant & printer's ink odors.

Poly Scrub Easily Removes:
Grease • Oil • Hydraulic Fluids • Glues • Ink • Asphalt • Varnish • Paint • Carbon • Adhesives • Tar • Stains • Cement

4 Pound ..... P/N 09-01994 ..... $18.85
26 Pound ..... P/N 09-01995 ..... $145.95

POLY 500 HAND CLEANER DISPENSING SYSTEM

FROM SPRAY NINE

Economical - Use just one "dollop" of Poly Scrub to clean even the dirtiest hands. Each 4 lb. cartridge packs 500 "dollops" when dispensed through the POLY 500 - so each wash is only "pennies per use!"

Convenient - Simply insert a fresh 3.8 lb. tub - no mess, no waste.

Durable - Rugged injection molded construction and tough, durable plastic components will hold up to the toughest use and abuse.

Lockable - Lockable lid keeps Poly Scrub fresh & Secure

P/N 09-01996 ..... $24.75

BOSS AIRCRAFT CLEANING PAD

Boss Pad & Holder

The BOSS Aircraft Cleaning Pad is the most advanced aircraft cleaning pad available. The BOSS Aircraft Cleaning Pad will safely clean bugs, carbon, fuel residues, dirt, grime, etc., from all your aircraft surfaces, leaving your plane the cleanest it's ever been or your money back.

• Safe for all paints, clear coat, plastics, graphics, metals, etc.
• Works extremely well with soap & water, waterless cleaners or just a small amount of chemicals!
• Reusable
• Eco-friendly
• Requires no harmful chemicals
• Best product to use to clean leather or vinyl interiors
• The pads chosen to clean the Blue Angels
• Cleans your car just as well as your aircraft

Aircraft Cleaning Pad ..... P/N 09-03474 ..... $8.75
Aircraft Pad Holder (flat) ..... P/N 09-03475 ..... $20.95
Aircraft Pad Holder (curved) ..... P/N 09-03476 ..... $21.95

CS

COMPOSICLEAN AIRCRAFT CLEANING PRODUCTS

COMPOSICLEAN BUCKET-WASH

Bucket-Wash™ concentrate is neutral pH and safe and effective on all aircraft. Bucket-Wash™ will not attack composite components or assist corrosion. With several cleaning agents, real Carnauba Wax & U.V. protection additives this IS the right stuff. 64 ounce with pump top.

P /N 13-05254.....$22.75

COMPOSICLEAN SUPER SPRAY-WAX

Super Spray-Wax™ is neutral pH and SAFE on all aircraft. Will not attack composite components or assist corrosions. With real Carnauba wax and other cleaning and conditioning additives, this product is sure to satisfy. Provides a great shine and superior protection. Try it with one of our MicroFiber cloths. 1 Quart with commercial quality trigger sprayer.

P/N 13-05255.....$19.65

COMPOSICLEAN MULTI-PURPOSE CLEANER

This multi-purpose ALKALINE cleaner is very effective at breaking down grease, oils, carbon & other stains. Use with brush or rag to agitate for tougher Stains & soils. 1 quart with commercial quality trigger sprayer. This is not a neutral pH product.

P/N 13-05256.....$10.95

COMPOSICLEAN HAZE GLAZE

A neutral pH mild abrasive cleaner & polish in one. Removes oxidation haze, surface-stains, swirl marks and paint overspray. Haze Glaze also removes minor acid rain contamination, light scratches & increases gloss on base coat & clear coat finishes. A great one-step or fist step product in the detailing process. Use Composiclean Haze Glaze by hand or with orbital/random style buffers. Use Composiclean Haze Glaze on clean dry surface. Apply Haze Glaze to buffing cloth/pad or directly to surface. Rub or buff in circular motion then flip cloth or change to dry pad for finish buff. 1 quart with flip-top.

P/N 09-02065.....$34.95

COMPOSICLEAN VIEW POLISH

Composiclean™ View Polish™ will probably be the best glass cleaner you will ever use, try it around the house too. Use View-Polish™ on windscreens, side windows, plastics, Lexan, acrylic and glass. You will see No streaking! View-Polish™ is guaranteed to leave no film. Non-caustic-non-flammable, Non-ammonia formula dries fast and contain no CFC's that deplete the ozone layer. View-Polish™ is also a great bug remover for the leaning edges, wheel pants, car grills etc. Spray product onto area to be cleaned (the thick foam helps it hang there), wait 2 to 3 minutes then wipe clean. Give View-Polish™ a try with our MicroFiber cloths, you'll love it! Offered in big 19oz aerosol can.

P/N 13-05257.....$9.65

COMPOSICLEAN LEATHER CLEANER & CONDITIONER

A rich conditioning cream that cleans leather as it brings back softness. Leaves leather looking natural with no greasy residue. 1 quart with flip top. 32oz.

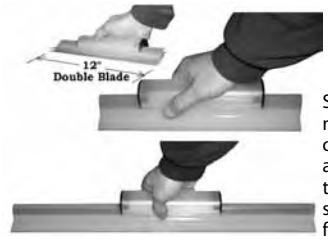
P/N 13-05258.....$24.95

COMPOSICLEAN MICRO- FIBER CLOTH

MicroFiber is a man-made product that consists of two fibers, Polyester and Polymide. The Polyester is the scrubbing and cleaning fiber, while the Polymide is the absorbing and quick drying fiber. Each square inch in a MicroFiber towel contains approximately 90,000 MicroFibers. MicroFiber is a lint free, non-abrasive, and hypoallergenic products. Unlike ordinary cotton towels that move, or push, the dirt and dust from one point to another, MicroFiber actually gets underneath the dirt and lifts it from the surface. It then stores the dirt particles in the towel until it is washed. MicroFiber is very absorbent and can hold up to seven times its weight in moisture providing "streak-free" cleaning. MicroFiber cloths are safe on all surfaces.

Keep MicroFiber cloths clean and separate from cotton towels. To ensure the effectiveness of your MicroFiber Towels only wash with other MicroFiber Towels. If MicroFiber is washed with cotton is will grab onto the cotton fibers and hold on to them. Washing by hand with mild hand soap is the best way to maintain this high quality cloth. MicroFiber cloths along with Composiclean™ Super Spray-Wax™ will provide a great streak free deep shine even in direct sun. When buffing off Super Spray-Wax™, it is best to NOT let cloth get to saturated, dryer is better. Try a MicroFiber cloth with Composiclean™ View Polish™ for streak-free window cleaning.

P/N 13-05259.....$16.85



COMPOSICLEAN SUPER SQUEEGEE

Super Squeegee is perhaps the most versatile squeegee you'll ever own. It works great and is extendable from 12" to 22". It is designed to be used in a back n' forth motion saving time and effort. It's perfect for use on the irregular and curved surfaces of an airplane.

P/N 13-06323.....$12.95

COMPOSICLEAN WASH MOP

Soft chenille mop has 180° Swivel Head, handle extends up to 45". Includes 1 replacement head cover.

P/N 13-05261.....$19.95

COMPOSICLEAN SOLAR SCREEN

This is a Composiclean™ Solar-Screen™ statically attached to the inside of a window looking right into the sun. Comes in 6" x 9" and 9" x 12". Great for airplanes, cars, boats, RV's and can be cut to fit inside motorcycle & ski helmets too.

6X9 .....P/N 13-05263.....$5.75

9X12 .....P/N 13-05262.....$8.95

COMPOSICLEAN PROPER CARE KIT

1 - 64oz Composiclean Bucket-Wash with pump top
1 - 32oz Composiclean Super Spray-Wax with trigger sprayer
3 - Plush 14" x 14" Micro-Fiber cloths
1 - Super-Soft Chenille wash mitt
1 - 11" Composiclean Super Squeegee

P/N 13-05264.....$79.95

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K&N POWER KLEEN

K&N Air Filter Cleaner is the only cleaner recommended to clean K&N Air Filter elements. K&N Air Filter Cleaner works to dissolve dirt build up and old filter oil and can be washed away with water. It is environmentally friendly and safe on paint, chrome, cast aluminum, plastic, rubber and vinyl when used as directed (do not use on polished or anodized aluminum). Complete instructions on bottle.

12 oz. Squirt Spray ..... P/N 05-01944 ..... $7.50
32 oz. Trigger Spray ..... P/N 15-06511 ..... $11.50
1 Gallon Refill ..... P/N 15-05451 ..... $28.65
5 Gallon Pail ..... P/N 08-07461 ..... $89.75

WAX AS-U-DRY

After washing your aircraft leave it wet, then spray Wax-As-U-DRY on the surface. After the water sheets away, you dry the surface with a chamois towel. The result is high gloss shine without spending the afternoon buffing. A one step spray wax is a blend of water reactive polymers and waxes that are safe for all painted surfaces, windows, trim & wheels. P/N 09-00370 ..... $7.95

STRIKE HOLD II CLEANER/PENETRANT/LUBRICANT

One of the most significant long term enemies to aviation is corrosion. Strike Hold is a potent anti-corrosive and has a dielectric strength of 38,000+ volts so it can also be used on electrical contacts and connections. It "finds" the small spaces which allow filiform corrosion to form. Its capillary action will quickly encapsulate metals by flowing against gravity and under overlapping sheets of metal.

It is a highly penetrating and mobile liquid with CFC's and is non-flammable by flame projection test as opposed to other liuids containing butane or propane propellants. The lubricant in Strike Hold doesn't harden or become brittle.

It completely seals out water with a shield film. The carrier agent evaporates (unlike ACF 50) and does not leave a dust collecting film to re-contaminate a surface. The flash point is in excess of 450°F and the freezing point is -85°F. This product is heavier than water and does not damage polymers, rubber or plastics. Strike Hold can be used on virtually any surface that is susceptible to corrosion and that needs lubrication.

2 oz. Squirt Bottle ..... P/N 09-02412 ..... $3.50
8 oz. Squirt Bottle ..... P/N 09-02593 ..... $10.95
13 oz. Spray Can ..... P/N 09-00890 ..... $22.65
32 oz. Spray Bottle ..... P/N 09-02594 ..... $30.50
1 gallon bottle ..... P/N 09-02595 ..... $15.85

PRO WASH RX PH NEUTRAL SOAP

Pro Wash RX is a super-concentrated, pH balanced, premium shine enhancing soap designed to provide superior detergency while at the same time being extremely gentle on all vehicle finishes. Pro Wash RX contains special rinsing agents that help eliminate spotting and streaking. It's everything you want in a soap to baby your car, boat, airplane, motorcycle or RV!

Add approximately 2 ounces of Pro Wash RX per 1 gallon of water. Apply with a sponge or soft bristled brush, and agitate the rich foamy suds lightly, allowing Pro Wash RX to release dirt and grime. Rinse thoroughly and either towel dry or air dry.

P/N 09-03835 ..... $736.00

THERMAPLEX BEARING GREASES

THERMAPLEX® BIO GREEN™ BEARING GREASE - Environmentally responsible, biodegradable grease. Qualified to the USDA Biopreferred program. NLGI 2 grease that prolongs bearing life. Provides outstanding extreme pressure performance. Offers superior rust and corrosion protectionDelivers exceptional water resistance

P/N 09-02367 ..... $11.50

STRIKE-HOLD® BRAND MICROFIBER CLOTH

These high quality 16"x16" Microfiber® Cloths are machine washable and won't scratch, mar or streak surfaces. Features; • lint-free • non-abrasive •machine washable • eco-friendly "Green" • inexpensive and long-lasting

P/N 09-02043 ..... $2.95

V & S AIRCRAFT CLEANERS & ADHESIVES

V&S #581 FOAM & FABRIC SPRAY ADHESIVE - V&S 581 Foam & Fabric Spray Adhesive is specially formulated for bonding flexible urethane or latex foams to themselves or most other material (wood, metal, paper, corrugated, fabrics, etc.) Produces bonds with foam-tearing strength.

P/N 09-42650 ..... $6.80

SUPER TRIM ADHESIVE #1081 - A high temp high strength contact type adhesive. Bonds metal, foam, decorative laminates, fabrics, headliners. Variable width spray pattern. Meets Fed. Spec. MMM-A-130B. P/N 09-42652 ..... $7.50

V & S DRY SILICONE SPRAY- Exceptionally high quality dry silicone lubricant that stops adhesion of urethane foam backings, foam rubber and other non-sliding materials to metal, wood or rubber. Non-staining, will not harm painted surfaces.

P/N 09-42654 ..... $5.95

CITRUS CLEANER #609 - Can be used safely on many surfaces to remove adhesives, grease, inks, and residue from various tapes. Environmentally safe, biodegradable and pleasantly scented. P/N 09-42656 ..... $12.95

AERO-600 AVIONICS CLEANER

The secret formula used in the film and photography industry, is now available for the aviation community! Eliminate fingerprints, streaks, dust, dirt, oils, from your avionics, glass cockpit screens, electronic flight bags, GPS screens, Laptop, and plasma screens. Aero 600™ tested for well over three years by professionals in the aviation industry with outstanding results. It's designed to have industrial strength; be powerful, yet mild and gentle to your screens. "We keep a bottle in the side pocket of our corporate aircraft and have been using it exclusively to clean our instruments, laptop screens and even our eyeglasses. It never streaks and helps keep the dust at a minimum."Nina Anderson, Hawker pilot. Aero 600™ is also safe for use on Laptop & TFT LCD screens, LCD, Plasma & Projection TVs (LCD and Projection screens have a soft membrane in place of glass which can easily be degraded by harsh chemicals. Plasma screens have a thin delicate protective coating which also can be damaged.

P/N 09-02040 ..... $14.85

AEROSPACE PROTECTANT

The World's most effective UV-screening product. AAP leaves a like-new, non-oily, anti-static finish that does not attract dust. Protected surfaces not only last much, much longer, but are easier to maintain. AAP treated surfaces repel soiling and stains, clean up easier and stay clean longer. 100% prevention of UV caused slow-fade - Plastics, Plexiglass, Lexan, Door Seals, Wing and Prop De-icing Boots, Tires, Vinyl & Leather Interiors.

2 oz. ..... P/N 09-02414 ..... $3.95

STEWART SYSTEMS PROPOLISH

Stewart Systems ProPolish is the perfect metal polish to use in conjunction with Stewart Systems EverShield. ProPolish holds it's shine longer than most other polishes and is very easy to use. Wipe on, wipe gently until polish is black, and wipe off. Repeat until you achieve the desired shine. Use SS ProPolish on bare metal or chromed surfaces, and then apply EverShield to make the shine permanent. SS ProPolish is available in green for cleaning and white for finishing.

Green 8 oz. ..... P/N 09-02054 ..... $13.85
White 8 oz. ..... P/N 09-02055 ..... $13.85
Green 16 oz. ..... P/N 09-02056 ..... $18.70
White 16 oz. ..... P/N 09-02057 ..... $18.70

CS

X-IT CARBON REMOVER & CLEANER

Powerful enough for difficult cleaning applications, but safe enough for daily routine aircraft cleaning & maintenance. X-IT™ Carbon Remover & Cleaner is safe on all surfaces (rubber, plastic, metal, painted or unpainted) & quickly removes heavy carbon, dirt, grease, grime and oil. X-IT™ Carbon Remover & Cleaner is non-toxic, non-corrosive, nonhazardous, odorless, and aqueous-based.

32oz. spray bottle.....P/N 09-00768.....$10.50
Carb Cleaner &Remover Gal.....P/N 09-00769.....$21.50
Carb Cleaner &Remover 5 Gal.....P/N 09-00770.....$83.75
Carb Cleaner &Remover 55 Gal.....P/N 09-00771.....$574.00

HYDRASOLVE

Hydrasolve is a thickened, heavy duty, water soluble gel degreaser formulated for efficiency an dperformance in a broad range of cleaning and degreasing applications. It will easily and safely remove carbon exhaust, exhaust tracks, hydraulic fluid, thrust reversers, soot areas, oil & bugs. Hydrasolve is a gel product that clings to the surface being cleaned and has the ability to rinse spot free. Meets Boeing & McDonnell Douglas approvals.

1 gal.....P/N 09-00528.....$25.75
5 gal. pail.....P/N 09-00529.....$118.75

PURPLE METAL POLISH

Purple Metal Polish is in a class of it's own. This is truly a no-rub metal polish. When you see just how easy it actually is to polish aluminum, chrome, brass and even plastic, you will be totally amazed. Specially formulated for easability, durability and a super high quality shine. It is a super quick and easy maintenance product. Purple Metal Polish contains a superior abrasive along with Hi-tech cleaners and sealers to safely clean, shine and protect all metal surfaces without scratching! Also removes scratches from acrylic windshields.....P/N 09-02860.....$13.85

FAST WING PAINT SEALANT

T-500 Paint Sealant with PTFE-M is more than a wax or polish. T-500 provides a tough, long-lasting, mirror-like finish that protects paint longer. Works great on aircraft, cars and boats. Fast Wing will increase performance by reducing parasitic drag. The performance of the aircraft actually increased due to the slick surface the Teflon Sealant left on the paint. 100% Satisfaction Guaranteed.

16 oz. (1 pint).....P/N 09-00186.....$17.95

FAST WING CLEANER

Originally designed to remove over spray, Fast Wing T-11 cleans and restores the paint to the original luster without the use of harsh abrasives found in most rubbing compounds. Rubbing compounds almost always use some sort of abrasive material, such as volcanic ash, which can leave microscopic scratches. Abrasives may actually accelerate the oxidation process.16 oz. (pint).....P/N 09-00187.....$8.95

EAGLE ONE A2Z ALL WHEEL & TIRE CLEANER

The ever-popular A2Z thick foam formula safely removes brake dust, grime and grease. Easy-to-use (spray on, hose off), no scrubbing required. Acid-free - Safe for ALL types of wheels, hubcaps and tires. Tip: Make sure your wheels and tires are cool to the touch before applying and clean one wheel/tire at a time. For extremely dirty wheels/tires, agitate with a soft sponge or brush. P/N 10-04938.....$6.85

SAFETY WASH

Safety Wash is a mild neutral PH water based exterior wash & wax concentrate designed to be gentle on your aircraft. It provides detergency and built-in easy rinse characteristics that will enhance gloss and eliminate the risk of streaking. Formulated for general routing washing of aircraft. Meets Boeing & McDonnell Douglas approvals. Safety Wash is NOT designed to clean heavily soiled areas.

1 gal.....P/N 09-00526.....$23.50
5 gal. pail.....P/N 09-00527.....$106.95

HEAVY DUTY CONCENTRATE DEGREASER

Oil Eater® Cleaner Degreaser is "Ultra" concentrated, biodegradable and non-flammable. It safely dissolves grease and oils from asphalt, concrete and much more! This unique non-flammable cleaner has passed the Boeing D6-17487 Rev P Test, is South Coast Air Quality Certified per 2012 standards and USDA approved A1, A4 and A8.

32 oz.....P/N 09-04011.....$4.35
1 Gallon.....P/N 09-04012.....$13.60
5 Gallon.....P/N 09-04013.....$51.75
30 Gallon.....P/N 09-04014.....$362.00
55 Gallon.....P/N 09-04016.....$499.00

WORX INDUSTRIAL WIPES

- 70ct High powered pre-moistened multipurpose cleaner
- Automotive, industrial, manufacturing, construction
- Natural oils and emollients, safe for hands and skin
- Durable non-scratching fabric for maximum cleaning
- Simple to use - just wipe down surface and dispose

P/N 09-02604.....$12.95

PS WORKPLACE HAND CLEANER TOWEL

- Uniformly premoistened towel
- Superior terpene blend
- Deep cleaning, non-scratching abrasives quickly remove embedded dirt and grime
- Fast acting
- Disposable
- Eliminates the need for soap, water and a sink
- Improves workplace productivity by reducing costly clean-up time
- Does not require water
- Easy to carry and store
- Convenient
- Bucket of 72 Towels

P/N 09-02546.....$15.50

ROYCO 756 HYDRAULIC WIPE

This 6" by 6" wipe is an excellent choice for cleaning chrome piston cylinders and struts. The wipe is presaturated with top of the line hydraulic fluid: Royco 756. It is lint and static free, made of 100% cotton cloth woven and finished without starch, binders, or any foreign substances. The cloth finish gives this wipe a softer and better dirt-trapping capacity and has incredible retention to minimize fluid drip.

P/N 09-02668.....$2.45

ROYCO 782 HYDRAULIC WIPE

This 6" by 6" wipe is an excellent choice for cleaning chrome piston cylinders and struts. The wipe is presaturated with top of the line hydraulic fluid: Royco 782. It is lint and static free, made of 100% cotton cloth woven and finished without starch, binders, or any foreign substances. The cloth finish gives this wipe a softer and better dirt-trapping capacity and has incredible retention to minimize fluid drip.

P/N 09-02669.....$2.45

ALUMINUM DEOXIDIZER

Want a product that really takes the elbow grease out of polishing? This is a very Hi-Tech chemical designed to clean and deoxidize all metal surfaces without streaking, hazing, burning or damaging the surfaces. Removes scale, road film, most acid stains and even rust on Chrome! It is the easiest and safest way to prep the metal before polishing. It really works great!

Can be used with most cream type polishes. If your aluminum has a milky look to it even after being polished, try this Aluminum Deoxidizer before polishing, you will achieve a Crystal Clear Shine.

P/N 09-02859.....$13.85

FLOOR AND ALL PURPOSE CLEANER

This pre-measured 1.5 Oz Floor & All Purpose Cleaner is Concentrated, Non-Corrosive, and Biodegradable. The superior quality of this product is proven better, use one pouch per mop bucket, it is safe on all surfaces, it won't dull high gloss finishes, and helps keep floors safe.

P/N 09-04017.....$0.67

WATER SPRITE SYNTHETIC CHAMOIS

Water Sprite is an exclusive PVA material that gently cleans and dries fine finished surfaces. It actually lifts off residual dirt and grime away from the surface, leaving it clean and dry. It is not affected by mildew, bacteria or common household chemicals.

It is used in place of a sponge or towel and when wet, can be used immediately upon removal from its package. It is individually packaged in a reusable plastic tube for convenient storage, moist or dry, in glove compartment or trunk. Size 3.0 square feet. P/N 09-03062.....$14.80

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AVL LUBRICANTS & RUST INHIBITORS

AVL LIGHT - The premium light lubricant and rust inhibitor that penetrates and displaces moisture fast, leaving a delicate coating for excellent lubrication and rust protection. A fine, light film that resists the accumulation of dust and dirt. Ideal for drying and protecting electrical connectors and delicate machinery. Can sprays upright or inverted. P/N 09-02106 ..... $8.65

AVL MEDIUM - The premium medium lubricant and corrosion preventor is specifically designed to penetrate and displace moisture fast. It leaves a medium weight oily coating for long term lubrication and rust prevention. Can sprays upright or inverted. P/N 13-02963 ..... $7.50

AVL THICK - The premium thick lubricant and corrosion preventor penetrates and displaces moisture. It stops corrosion on contact leaving a thick coating for long term lubrication and corrosion prevention. Can sprays upright or inverted. P/N 13-02964 ..... $4.75

AVL NO CHLOR CLEANER/DEGREASER

The powerful flushing action and a high solvency formulation makes cleaning metal parts faster and easier. Penetrates quickly into hard to reach areas, cleaning thoroughly. AVL NO CHLOR Cleaner/Degreaser does not contain any 1,1,1 Trichloroethane or any solvents or CFCs known to deplete the stratospheric ozone layer. Evaporates quickly leaving no residue. Removes oil and grease on contact. This is the best non-chlorinated degreaser we have ever produced. 14 oz. P/N 13-02961 ..... $6.85

AVL ELECTRO CONTACT CLEANER

The premium aviation cleaner that penetrates fast, cleans and degreases, removes dust and dust buildup without leaving a noticeable film or oil residue. Both penetrate and dry quickly. Ideal for air and ground, electrical and avionics, and sensitive mechanisms. Non-flammable. P/N 13-02958 ..... $12.65

AVL FAST ACTING CLEANER/ DEGREASER II

AVL Fast Acting Cleaner/Degreaser II is a highly concentrated solvent designed to remove dirt, grease, oil and grime from metallic and non-metallic surfaces. Cleaning is quick and simple without the danger of injury to working parts. Ideally suited for use on electronic motors even while running, electronic equipment, ignition systems, geneerators, power tools, etc. It is non-flammable and non-conductive so it can be used while motors and equipment are operating. Cleans & degreases very fast and dries quickly leaving little residue. P/N 13-02960 ..... $7.95

MACH #1 DEGREASER/CLEANER

A citrus scented degreaser and cleaner designed for the aircraft industry. This surface degreaser is non-irritating but will remove heavy encrustations. Mach #1 (formally known as Big Orange Plus)combines solvent power with an emulsifier system that removes hydraulic fluids, fuel stains, and exhaust soot. P/N 13-00031 ..... $27.50

CLEAR VIEW PLASTIC CLEANER

Clear View™ glass and plastic cleaner is safe on all plastics and glass, contains no ammonia. This foaming cleaner leaves a shiny finish with no residue. It easily removes bugs and grime from windshields and all surfaces. 15 oz. P/N 13-02959 ..... $6.85

CRAZY CLEAN ALL PURPOSE CLEANER

Crazy Clean is an all purpose cleaner which is excellent for removing fuel stains, exhaust stains, an dgrease and grime from your aircraft. Ideal fro removing bugs from leading edges. Crazy Clean produces a cinging foam which cleans and deodorizes and leaves a clean, not waxy surface. Keep a can in the airplane to use when travelling. Recommended by Aviation Consumer. 15 oz. aerosol can. P/N 09-00563 ..... $8.50

EXTREME SIMPLE GREEN AIRCRAFT CLEANER

Unique cleaning & anti-corrosion chemistry delivers superior performance and materials-safety all in one. Cuts through tough, built up grease, oil, dirt, pollution, insect residue & impact soils. Gets its superior cleaning from a unique "triple play" cleaning formula. 2 high performance surfactants and new generation grease lifter/cutter combine to get the soil away from the aircraft surface quickly and keep it away so it can be cleanly rinsed away. Also able to go into oil/water separators and have oil break from solution. Extreme Simple Green's safety upon aircraft materials and precision cleaning surfaces comes from a combination of proven anti-corrosion agents. Time tested coupling agent allows these to work together to battle corrosion & hydrogen embrittlement. This makes it safe to put through pressure washing equipment, rack wash systems, dip tanks & parts washers, without any equipment damage.

32 oz..... P/N 09-00809.....$10.95 Gallon..... P/N 09-00810.....$16.75
5Gal..... P/N 09-01236.....$82.50
55 Gallon Drum..... P/N 09-01606 ..... $596.00

SIMPLE GREEN PRO HD CLEANER

Simple Green® Pro HD is a non-toxic, non-corrosive, professional grade product developed for multi-purpose contractor applications including use on floors, walls, industrial equipment, appliances; automotive or recreational vehicle cleaning and degreasing; commercial kitchens and baths; and for pressure washing, parts washing, ultrasonic cleaning, and more. It quickly eliminates tough grease and grime, removes stains, and is safe on metal surfaces. Simple Green Pro HD is your one-stop cleaner and degreaser!

P/N 09-02399 ..... $14.85

SIMPLE GREEN SAFETY TOWELS

Non-toxic and Biodegradeable. Pre-moistened, quick and versatile with no color and no added scent. Non-abrasive and abrasive sides. ..... 09-01297 ..... $13.50

CRYSTAL SIMPLE GREEN INDUSTRIAL CLEANER/DEGREASER

Use for equipment and machinery degreasing, parts washers and dip tanks, mechanized applicators. Non-toxic & biodegradeable, non-abrasive & non-flammable.

1 Gallon..... P/N 09-01299 ..... $17.85

SIMPLE GREEN HAND CLEANER GEL

Simple Green® Hand Gel is the safer solution for heavy-duty hand cleaning. With over 25 years of environmental leadership, Simple Green has customized a hand cleaner that has the powerful cleaning ability of Simple Green All-Purpose Cleaner/Degreaser, while being easy on the hands. It contains natural pumice to enhance the cleaning of stubborn dirt and grease; and lanolin for moisturizing and protecting skin.

5 oz..... P/N 09-01301 ..... $1.65
1 Gallon (pump) ..... P/N 09-01302 ..... $16.95

SIMPLE GREEN 30 GAL. PARTS WASHER

15" depth soak basin at deepest point). Stainless steel workshelf, flex spigot & nylon flow-thru brushClean out plug for easy draining, includes filter kit and circulating pump. Overall dims: 36"L x 24"W x 39"H..... P/N 09-01303 ..... $998.00

SIMPLE GREEN 4-WAY PROPORTIONER

Assures proper mixing, controls material usage costs, minimizes excessive packaging disposal, and saves time. Dispenses diluted Simple Green® concentrates in four strengths at 1 gallon per minute. Also includes six foot hose with trigger handle for bucket fill and pre-formed tube for bottle fill. ..... P/N 09-01304 ..... $149.85

SIMPLE GREEN FOAMING CRYSTAL INDUSTRIAL CLEANER/DEGREASER

Fragrance-free and color-free solution.

P/N 09-01305 ..... $4.95

SIMPLE GREEN CONCENTRATED CLEANER/DEGREASER DEODORIZER

Clean & deodorize grease filters/traps.

24 oz. (Trigger Spray) ..... P/N 09-01306 ..... $6.50
1 Gallon ..... P/N 09-01307 ..... $15.75

SIMPLE GREEN LIME SCALE REMOVER INDUSTRIAL/INSTITUTIONAL DESCALER

Dissolves soap scum & mineral deposits. Deodorizes-contains no bleach, ammonia or phosphorus. Non-abrasive & non-flammable.

Spray ..... P/N 09-01308 ..... $5.95
Bottle..... P/N 09-01309 ..... $12.90

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MICROFIBER CLEANING TOWELS

These non-abrasive, super absorbent cleaning towels are excellent for cleaning plexiglass, rotors, props, and fronts of aircraft to remove bugs and dirt without fear of scratching. Microfiber needs only water to work due to it's unique construction. Used extensively on aircraft, boats, RVs, and motorcycles. Available in Terry style (16"X16", blue) and in Chamois style (16"X 24", gold).

Terry style ..... P/N 09-00272 ..... $2.75 ea
Chamois style ..... P/N 09-00273 ..... $6.65 ea

KIMTEX SHOP TOWELS

The heavy-duty oil and solvent disposable wiper to replace cloth. Excellent for machine shop use.

Each..... P/N 09-03473 ..... $0.35
Pkg of 10 ..... P/N 09-02996 ..... $3.95
Pkg of 50 ..... P/N 09-02997 ..... $14.95

MICROFIBER CLEANING CLOTH

The Mystic Maid® Microfiber Cleaning Cloth will clean all hard surfaces to a streak-free brilliance without chemicals. No cleaning agents, soap, or detergent is needed; just the cloth and water. Simply wet the cloth, wipe the surface, and the cloth leaves a brilliant surface that air-dries in seconds. Machine washable and reusable for countless applications. Removes grease, dirt, and dust. Excellent for cleaning the aircraft windscreen and on leading edges for bug removal.

13"x 20" cloth ..... P/N 09-00191 ..... $11.50 ea

SONTARA AIRCRAFT WIPES

Tough Dupont Sontara® AC™ aircraft wipes are the smart choice bor both aircraft manufacturing and maintenance. Their strength and durability make them ideal for a wide variety of general purpose & pre-paint applications. Sontara® AC™ wipes leave surfaces clean because they're exremely low-linting. Tackles tough cleaning agents without falling apart. every Sontara® AC™ is clean right out of the box. No chemical residues or stains. Sontara® is specially engineered to resist snagging on metal parts and corners. Superior to paper wipes which snag & tear. Outperforms cheesecloth which leaves strings behind when it snags on a rivet. Sontara® AC™ is great for wiping surfaces dry because it contains no additives that hamper absorbency.

9" x 16' Wipes (Box of 100) ..... P/N 09-00369 ..... $18.75
12" x 16' Wipes (Box of 125) ..... P/N 09-00368 ..... $49.85

DISPOSABLE MICROFIBER TOWELS

These disposable Microfiber Towels are a generous 16 x 17 inch size and are made of the highest quality, aviation-grade Microfiber. Use these scratch-free/lint-free towels with All-Spray (PN: 09-02379) to leave your aircraft windows clean, smooth and brilliant.

10 Pack..... P/N 09-02384 ..... $14.80
50 Pack..... P/N 09-02376 ..... $31.50

AIRCRAFT MICROFIBER POLISHING CLOTH

This Polishing Cloth is an aviation grade, reusable microfiber cloth designed to remove any residue, dust or fingerprints from aircraft windows. Can also be used to go over painted surfaces and helps restore a brilliant shine. The smaller cloth can be used on avionics and helps remove dust and fingerprints.

Large Cloth: 22" x 25"
Small Cloth: 7.5" x 7.5"

Large Polishing Colth (22 X 25 inches) ..... P/N 09-02380 ..... $9.65
Small Polishing Cloth (7.5 X 7.5 inches) ..... P/N 09-02377 ..... $8.75

NEVR-DULL NATURAL STAIN REMOVER

Nevr-Dull® Stain Remover is a proprietary blend of natural cleaning agents, plant-based surfactants, biocatalysts and enzymes. This specially blended enzyme-based stain remover is strong enough to remove all protein matter from hard surfaces, as well as carpeting and fabrics. Safe to use around people and animals. Ideal for use in hospitals, bathrooms, offices, automobile interiors and boats. Strong enough to use in commercial and industrial settings, but safe enough to use in the home. Features: • Works on hard surfaces, carpet and any fabric • Enzyme-based formulation • Non-caustic and environmentally friendly • No-caustic and environmentally friendly • No harsh chemical fumes or vapor • Removes food stains, mold, mildew, blood and much more • Ideal for cleaning hard-to-reach spots like tile, grout and corners • Safe to use around people and animal • Renewable-plant-derived formulation, phosphate free, no glycol ether, ozone safe, phthalate free P/N 09-02363 ..... $7.50

NEVR-DULL NATURAL GLASS CLEANER

Nevr-Dull® Glass Cleaner is an environmentally friendly glass and surface cleaner that leaves a streak-free shine. Use on a variety of surfaces that include plastics, glass, mirrors, chrome, automobiles, boats and especially Strata, EZ2CY and Eisen glass. Ideal for use in hospitals, bathrooms and offices. Strong enough to use in commercial and industrial settings, but safe enough to use in the home. P/N 09-02364 ..... $7.25

NEVR-DULL FOAMING HAND SANITIZER

Nevr-Dull™ Hand Sanitizer is a fast drying, non-sticky foam that contains unique conditioning and moisturizing ingredients. Skin is left feeling soft, silky and smooth, not dry or gooey. Proven to reduce S. Aureus by 99.99% in as little as 15 seconds. 1.7 oz pump bottle size. Fast acting – effective in as little as 15 seconds. Will not stain clothing. Kills 99.99% of most common germs. Biodegradable . No alcohol – non drying . Towel and rinse free use. No polymer thickeners or silicones. Nonflammable. Passes security check points including airports

P/N 09-02369 ..... $3.95

PROTECT ALL POLISH

Protect-All makes everything look better - cleans and polishes in one easy step. Works on vinyl, rubber, plastics, painted surfaces, fiberglass and chrome. Use Protect-All on the entire aircraft, inside and out, including windshields.

6oz. spray can..... 09-00556 ..... $3.65
13.5oz. spray ..... 09-24900 ..... $9.75
1/2 Gallon Jug ..... 09-00599 ..... $33.85

PROTECT ALL QUICK & EASY WASH

A non-abrasive, anti-static, water repellent wash that replaces soapy detergent products and eliminates rinsing when washing aircraft and other surfaces. No hose is needed. Quick & Easy Wash conserves water.Removes oxidation, stains and heavy grime with a strong cleaner or polishing compound before using Quick & Easy Wash for the first time. From then on use 1/2 oz. (1 capful) in a bucket with 2 qts of water for an average size plane. Use 1 oz per gal. for larger aircraft Wash a section at a time then just chamois, towel or squeegee dry! This is especially important where water use is restricted. Because you don't need to rinse, you can wash in your hangar and airplane tie-downs.

Pint ..... P/N 09-24910 ..... $7.50
Quart..... P/N 09-24920 ..... $15.90

PROTECT ALL FIBERGLASS OXIDATION REMOVER & COLOR RESTORER

1-Step Application: Cleans, Polishes, Seals Removes: Oxidation, Wax build-up, Stains, Surface scratches, Hard water spots For: Fiberglass, Gelcoat, Enamel, Polyurethane painted surfaces. 32oz. PN 09-01659 ..... $15.95

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PPC AIRCRAFT CLEANERS

PERFECT DETAIL™ SURFACE ENHANCER

Perfect DetailTM is the nation's leading choice for producing "wet look" shine! A light mist instantly produces maximum depth of gloss and flawless glassy brilliance on clear coat, black, and all other paint finishes. It works especially well on all other non-porous surfaces (such as chrome, glass, etc.) while lightly cleaning and accenting soft surfaces such as vinyl, rubber, and leather. For engine detailing Perfect DetailTM can't be beat! Perfect DetailTM is anti-static and slippery, enabling it to resist dust, dirt, and abrasion better than any product.

18 oz. ..... P/N 09-00165 ..... $12.25
1 Gallon..... P/N 09-00166 ..... $49.65

BELLY WASH™ DEGREASER

Water-based BellyWashTM is highly concentrated for versatility and cost-effectiveness in any aircraft surface maintenance situation. It can be applied in any manner – spray, brush, wipe, power washer, etc. – and can be diluted with water by as much as 80:1 for routine cleaning in commercial application. Stubborn stains are dissolved almost on contact using full strength Belly WashTM, making it perfect for keeping troublesome aircraft bellies and wheel well areas in like-new condition. When used to remove concealing grime and petroleum-based residues form the aircraft engine area, Belly WashTM makes it possible to perform a more thorough inspection when checking for potential maintenance problems.

18 oz. ..... P/N 09-00168 ..... $13.85
1 Gallon..... P/N 09-00169 ..... $118.75

WING CLEAN™ LEADING EDGE CLEANER

One major performance factor the aircraft owner/operator can improve upon is complete removal of all parasitic drag resulting from impacted air debris on the leading edges. Wing CleanTM is specifically formulated to both safely and effectively dissolve the problem. Wing Clean'sTM water-based non-solvent "spray-soak-rinse" application dramatically improves an aircraft's flight-ready condition. Routine use of Wing CleanTM, in series with PPC's Perfect DetailTM and/or Prestige Protective Polish, produces a microcellular separation barrier on leading edge surfaces, making future bug removal a progressively easier task.

18 oz. ..... P/N 09-00170 ..... $9.95
1 Gallon..... P/N 09-00171 ..... $39.75

CRUD REMOVER™

Crud Remover – made with water – is an environmentally safe replacement for heavy-duty petroleum cleaning solvents. It's extremely powerful degreasing and defatting abilities enable it to dissolve diesel fuel, soot, and oily deposits on contact, grease and heavy grime in seconds, and virtually any stain from any surface – including cloth – in a matter of seconds! It also loosens bolts. It can be applied in any manner – spray, brush, wipe, or soak – and simply rinses off with water.

18 oz. ..... P/N 09-00172 ..... $10.75
1 Gallon..... P/N 09-00173 ..... $39.75

AERO GLAZE DRY WASH & POLISH

Aero Glaze is a high-grade protector and restorer. Removes oxidation, fuel stains, soil, insects and exhaust deposits. Aero Glaze retards corrosion, resists stains and prevents paint deterioration. 1 Gallon..... P/N 13-00030 ..... $64.75

KLEEN JET CLEANER & DEGREASER

Kleen Jet is a biodegradable aircraft industry cleaner and degreaser. It is a water-soluble, non-flammable, non-toxic concentrate that leaves no oily film or residual gumminess. Removes carbon, oil, grease, insects and inhibits corrosion and rust. 1 Gallon..... P/N 13-00029 ..... $29.75

BIG ORANGE PLUS

A citrus scented degreaser and cleaner designed for the aircraft industry. This surface degreaser is non-irritating but will remove heavy encrustations. Big Orange Plus combines solvent power with an emulsifier system that removes SKYDROL, hydraulic fluids, fuel stains. exhaust soot.

1 Gallon..... P/N 13-00031 ..... $27.50

FLEET WASH

Fleet Wash aircraft wash and wax is an effective cleaner that leaves a wax-like surface on the washed aircraft. Contains a high percentage of W-300. Fleet Wash leaves a high luster, water-repellent surface which helps to repel dust.

1 Gallon..... P/N 13-00032 ..... $27.60

FORMULA 2™ CLEANER/ PROTECTANT

Formula 2TM Cleaner/Protectant is a chemically unique multipurpose liquid which thoroughly cleans, beautifies, and protects all leather, rubber, vinyl, and finished wood products in one easy sstep with no greasy film! Due to its unique chemistry, Formula 2TM can also be used on painted and plastic surfaces. When applied sparingly to such surfaces it dries to a slick smooth, invisible coating resistant to mud, fingerprints, food splatters, soap scum, water spotting, etc. On leather, rubber, and vinyl Formula 2TM first dissolves away imbedded grime, then penetrates and softens the material to give it new life and flexibility, at the same time providing a lustrous, weather-resistant finish to prevent future deterioration.

20 oz..... P/N 09-00174 ..... $11.50

EASY™ ALUMINUM POLISH

EasyTM Aluminum Polish is a unique liquid formula that produces a "mirror-like" shine in seconds on smooth aluminum, magnesium, stainless, brass, nickel, etc. Its ability to melt oxidation and simultaneously bring up the metal's true brilliance can't be matched by any other polish. The application of EasyTM allows its exclusive acrylic polymer barrier to "lock" onto the metal's polished surface to resist staining, tarnish, and weathering effects indefinitely. The fine "mirror" finish can easily be maintained with a quick "touch up" application of product as desired.

8 oz. ..... P/N 09-00177 ..... $11.75

REAL™ WHEEL CLEANER

RealTM Wheel cleaner is the first detergent-based single product able to clean brake dust and corrosion from any type wheel in seconds! It works on contact to remove corrosion from older unfinished or neglected metals (aluminum, copper, brass, bronze, zinc) and is great for antique restoration. RealTM Wheel Cleaner's exclusive detergent action saves both time and money when detatiling any vehicle.

18 oz..... P/N 09-00178..... $9.95

NATURALLY NEW™ TIRE DRESSING

Naturally NewTM Tire Dressing utilizes PPC's advanced water-based polymer technology to produce an effective, cost-efficient dressing that actually protects rather than destroys the integrity of the sidewall. Naturally NewTM exactly describes the lustrous sheen imparted on contact with this instant action formula. The dry, semi-permanent barrier is both water repellent and resistant to dust, dirt etc. Naturally NewTM Tire Dressing adds maximum beauty while conditioning to keep that "new tire" look during the treadlife of the tires

18 oz. ..... P/N 09-00179 ..... $9.95

SUNBLOCK FOR LEATHER KIT

SunBlock's newest product features cleaning and protection for leather that prevents stains and cracking. The SunBlock Cleaning System for leather interiors keeps your leather soft and supple by maintaining the moisture in the leather and preventing the destructive effects of everyday use while preserving the leather topcoat. Regular use of SunBlock Leather Cleaner and SunBlock Protection Cream will maintain the original look and feel of the leather without affecting the leathers breath-ability. This kit is safe for all leather except Suede or Nubuck.

Contains;
1- 5oz. Bottle of SunBlock Leather Soft Cleaner
1- 5oz Bottle of SunBlock Leather Protection Cream
1- Soft Cloth
1- Sponge

P/N 06-01048..... $19.95

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JET STREAM AVIATION PRODUCTS POWERFOAM SPRAY & WIPE FOAM CLEANER

An exterior and interior spray and wipe cleaner. On aircraft exteriors, Powerfoam will effectively clean carbon exhaust, engine cowlings, oil and bugs. Excellent for use between wash jobs as a "trip ready" wipe and cleaner. On aircraft interiors, Powerfoam will completely clean smudge marks, nicotine stains, fingerprints and food stains. Can also be used on leatherette, sinks, table tops, woodwork, stainless steel, lavs, painted or similar surfaces.

19 oz. Can ..... P/N 09-37970 ..... $13.95

SUPREME GLAZE AIRCRAFT FINISH TREATMENT

Supreme Glaze is a semi-flowing paste cleaner wax that cleans, shines, resurfaces, all aircraft painted surfaces while bringing out the brilliance of the original color. Supreme Glaze safely removes light to medium oxidation and scratches. Excellent for use on carbon exhaust stains associated with aircrafts such as King Airs. Supreme Glaze contains color brighteners and will protect against oxidation, salts, UV rays, hydraulic fluid, insect residue and acid rain. Can be used by hand or machine polisher. 16 oz. Bottle ..... P/N 09-37980 ..... $20.75

FLYERS SPEED-WAX WATERLESS DRY-WASH

SpeedWax is a specially formulated waterless aircraft polish and high gloss protectant Dry-Wash. This product is Carnauba Rich & is easy-on, easy-off. With Flyers there is no need to pre-clean any surfaces before using. Due to EPA regulations, cleaning aircraft with soap and water is becoming more and more regulated. Flyers SpeedWax is the answer to the ever increasing EPA regulations. This product will allow you to clean your aircraft in a reasonable amount of time, leaving the surface of your aircraft highly protected. 16 oz. bottle ..... P/N 09-42015 ..... $15.75

JET STREAM METAL POLISH

SKAI METAL POLISH - Skai Metal Polish is designed to polish and restore aluminum or stainless steel to a mirror image. Used for polishing aircraft leading edges, spinners, engine inlets, thrust reversers and bare aluminum skins. Also safe for use on aircraft paint for removing heavy oxidation and stains. Skai Metal Polish is also very economical. A one pound container will normally equal several pounds of our competitor's products. Skai makes very little mess when you are polishing and will not sling over the aircraft if used properly. Skai is non-abrasive, fast cutting and quick to clear under a buffer. Surfaces treated with Skai are protected and resistant to oxidations MIRROR IMAGE - Mirror Image Brightwork Swirl Remover is designed to remove swirls in polished metal caused by machine buffing. Mirror Image can also be used as a light maintenance polish between machine polishing jobs. Contains corrosion inhibitors and anti-oxidation agents for long lasting protection on all polished metal. Mirror Image will produce 100% protection while sealing the polished metal.

1 Lb. can. Polish ..... P/N 09-41713 ..... $44.95
Mirror Image 5 oz. roll Swirl Remover ..... P/N 09-41715 ..... $29.95

AIRCRAFT SQUEEGEE

Neoprene Aircraft Squeegee has been improved by adding locking threads for pole attachment and is now constructed from white plastic instead of metal. Will remove water from un-even aircraft surfaces safely and smoothly. You will save time and dozens of wet towels while completely drying any size aircraft in just minutes. P/N 09-42025 ..... $24.95

BUFFING / POLISHING PADS

Buffing Pads are made from 100% wool with a 1-1/2 inch pile. These pads can be used for all of your brightwork and paint polishing needs and will cut through oxidation quickly and wear evenly for extremely smooth polishing. Our buffing pads can also be washed and re-used multiple times for long lasting life. They do not have velcro backing and are designed to be used with a threaded nut and backing plate. P/N 09-42035 ..... $13.65

BUFFING PADS SPUR / CLEANER

Absolutely a must tool when buffing.The Buffing Pad Spur Cleaner is used to break down compound build- up without removing the pad from the machine polisher. When buffing, your pads fill up with polishing compounds not allowing to perform properly. The Buffing Pad Spur Cleaner will quickly and efficiently remove this build-up, restoring the pad to it's full potential. P/N 09-42045 ..... $12.85

FLITZ FIBERGLASS / PAINT RESTORER

Flitz Fiberglass/Paint restorer safely cleans, polishes, and protects fiberglass, plexiglas, painted surfaces, and plastics. It removes rust, oxidation, tarnish, and tar. It will not harm gel coat or clear coat, anodized or polished aluminum, stainless steel, brass, copper, chrome, and more. Contains no ammonia or abrasive. 8.5 fl. oz. ..... P/N 09-01240 ..... $14.50

FLITZ SPEED WAXX

This wax is perfect for waxing between flights. This remarkable spray on/wipe off wax is water based. No streak. No Smear. No white residue. Gives a super gloss, super fast. 16oz. trigger spray. 09-01678 ..... $14.50

SPRAY SHINE™ SPRAY-ON CARNAUBA WAX

Spray Shine™ was designed for the finest of finishes, car show enthusiasts, new car dealers and people who really like to take care of their vehicles. Just a quick spray and wipe will give your ride a complete new shine! Use Spray Shine™ on paint, glass, chrome, plastic, tile, lamps stoves, refrigerators, microwaves, mirrors, computer screens, etc.
Spray Shine™ will give a high gloss surface an amazing CLOUD FREE SHINE!

16 oz. ..... P/N 09-03485 ..... $10.95

FLITZ ALUMINUM & FIBERGLASS POLISH

Flitz is a non-abrasive metal polish which can be used on all metal surfaces including polished aluminum, painted surfaces, and fiberglass. It is easy to apply and remove, and leaves a protective film to protect shiny surfaces up to 4 months A very popular multi-purpose polish.

1.76 oz. Tube ..... P/N 09-42405 ..... $9.70
5.29 oz. Tube ..... P/N 09-01676 ..... $18.36
2.2 Lb. Can ..... P/N 09-42415 ..... $48.50

FLITZ POLISHING AND BUFFING BALL

The Flitz 8" Polishing & Buffing Ball is made of a viscos materialwhich is a cooling material vs. lambs wool or cotton which is a heating material. This way it doesn't burn the paint and can be used to buff leading edges without having to tape them. This ball works wonders with Flitz Products and makes polishing much easier, faster and more effective in less than half the time. It fits all drills and air tools and will buff out scuffs, oxidation tarnish, pitting, corrosion on all metals, paints, fiberglass, plastics, and wood. Re-usable & washable.

P/N 09-00554 ..... $36.50

FLITZ MICROFIBER CLOTH

The Flitz microfiber cloths are 30 times finer than cotton and are great for buffing out waxes and polishes by hand. They will wash windows without chemicals (just use water) and will not streak or leave lint. Size: 16"x16".

P/N 09-00556 ..... $3.65

KOZAK SUPER DRY WASH

Use on metal, painted, or buffed aircraft surfaces to clean and maintain a beautiful shine. Good on spinners and prop blades too! Made from specially woven cotton fibers with a unique cleaning formula that lifts loose dirt and dust up and away from the surface. Use every time you fly to maintain a shine all year round! Reusable more than 50 times. P/N 09-00345 ..... $12.85

SUPER SHINE SPRAY CLEANER & PROTECTOR

Super Shine is a no-run, all purpose spray cleaner and protector. Just spray on Super Shine and let its foaming action lift off dirt and grease from all washable surfaces. Surfaces stay cleaner longer, while fogging and static build-up is eliminated. Ideal for use on plastic windows. Plexiglas, windshields, vinyl, leather, glass, tires and trim, chrome, fiberglass, acrylics, veneers, and painted surfaces. Non-toxic and meets California Clean Air Act. Widely used in aviation, racing/automotive, motorcycle, & marine industries. 15 oz. Spray Can ..... P/N 09-42580 ..... $5.85 ea

CYCLO POLISHING PRODUCTS

CYCLO ORBITAL POLISHERS FOR AIRCRAFT

Genuine Cyclo Polishers: a fifty-year heritage of quality.

Precision machined and hand assembled for a lifetime of trouble-free operation, the Cyclo Polisher's dual heads orbit in a random, overlapping motion that mimics fine hand polishing. Leaves a dazzling, swirl-free shine every time.

The Cyclo Dual Head Orbital Polisher is the most effective means of polishing available today. Even in the hands of a novice, it is safe to operate and provides professional results every time. The difference lies in the tool's overall balance and its patented dual heads. The dual heads operate in a synchronized motion, providing the most effective results without fear of heat buildup; damage to trim pieces, moldings and gaskets; swirl marks, holograms and more. The low-vibration and balanced design allow for a more even application and better control when operating.

Electric Polishers

CYCLO ELECTRIC POLISHER

* Power Supply: 115 Volts, 60 Hertz, 220 Watts * Motor: alternating current, semi-enclosed 24-bar commutator, * Speed: 3000 orbits/minute, * Output: 1/3 H.P. (.25 Kw) * Weight: 6.5 lb. (2.9 kg) * Head Rotation/Diameter: clockwise /4" * Electric Cord: 10' length, 16 ga/3SJTOW * Housing: heavy-duty cast aluminum * Polisher Only.

P/N 09-35715 $289.00

CYCLO POLISHER BONNETS

THE ORIGINAL CYCLO CUTTING WOOL - • Metal Polish/Cleaner • Paint Deox • Paint Compound • Paint Swirl Removal.

With Velcro..... P/N 09-35727 ..... $5.90
Without Velcro..... P/N 09-35700 ..... $7.95

WHITE FINISHING PADS - • Extreme Shine • Final Wax Buff • Wax Application • Sealant • Metal Sealant

With Velcro..... P/N 09-35735 ..... $4.60
Without Velcro..... P/N 09-35736 ..... $7.95

GREEN POLISHING PADS - • Sealant • Paint Polish • Paint Cleaner • Metal Sealant

With Velcro..... P/N 09-35732 ..... $4.60
Without Velcro..... P/N 09-35711 ..... $8.40

Note Polishing Pads with Velcro require the RUBBER PAD HOLDERS P/N 09-35730 listed with the Cyclo accessories

COTTON TERRY PAD COVER - • Final Wax Buff • Upholstery A 100% cotton terry cover. Perfect for cleaning interior surfaces and for buffing, polishing, and drying exterior surfaces. P/N 09-35755 ..... $3.50

FASTCUT™ 600 GRIT DISC - • Tile and Grout • Ice Hockey Rink Walls • Rust Removal - This coarse nylon pad is strong, durable, and specifically designed for rough surface areas.

P/N 09-35737 ..... $1.60

CYCLO BRUSHES

GRAY ULTRA SOFT UPHOLSTERY BRUSH - • Upholstery • Fine Carpets • Fine Interiors P/N 09-00689 .....$20.75

AQUA SOFT CARPET BRUSH - • Fine Carpets • Durable Carpets • Auto & RV Carpets & Upholstery P/N 09-00690 .....$22.65

WHITE STANDARD CARPET BRUSH - • Auto & RV Carpets & Interiors • Tile & Grout • Durable Carpets P/N 09-35742 .....$21.75

BLACK STIFF SCRUB BRUSH - • Tile & Grout • Truck Bed Liners. P/N 09-35740 .....$19.75

CYCLO POLISHER ACCESSORIES

Rubber Pad Holders ..... P/N 09-35730 ..... $9.95
Flat Wrench ..... P/N 09-35745 ..... $5.50

CYCLO 5-PRO POLISHERS

The Cyclo Toolmakers Model 5-Pro Polisher is 110 volt machine featuring a new solid state variable speed controller, three year warranty and complete Vibration Elimination System&trade set-up. The Model 5-Pro Series Polisher is designated for use in North America and countries that supply 110 V a.c. power.

80-012/C-PG, MODEL 5-PRO PROGUARD POLISHER: Cyclo Model 5-Pro Polisher with ProGuard Orbital Backing Plate, VES Yellow, Silver and Blue Weighted Inserts, L Hex-Key Wrench, Flat Wrench.

P/N 09-03743 ..... $318.00

80-012/C-RPH, MODEL 5-PRO RUBBER PAD HOLDER POLISHER: Cyclo Model 5-Pro Series Polisher with Rubber Pad Holders, Head Assemblies, VES Yellow, Silver and Blue Weighted Inserts, L Hex-Key Wrench, Flat Wrench.

P/N 09-03745 ..... $367.00

CYCLO CTI 1 PASS EXPRESS™ CLEANER - POLISH – SEALANT

CTI 1 Pass Express removes light scratches and environmental contaminants in one operation. Restores showroom color and brilliance, and protects finishes with a brilliant weather resistant silicone film. Excellent on any paint surface, including clear coats.

1GAL..... P/N 09-00416 .....$71.75
16OZ..... P/N 09-00417 .....$13.95

CYCLO POLISH & PROTECTIVE SEALANT

CTI Polish & Protective Sealant is a high poly sealant that will give your surface 12-18 months of durable protection and brilliant gloss. Restores your paint to its original new car shine. Great for use on all painted surfaces.

Cannot be sold to residents in the following states: CA, CT, DE, DC, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VT, VA, WI

1GAL..... P/N 09-00418 .....$56.75
16OZ..... P/N 09-00419 .....$12.85

CYCLO FREE FLITE™ PROTECTIVE SEALANT

CTI Free Flite™ Protective Sealant is a mild deoxidizing agent specially formulated to bond to bare metal. It removes those fine polishing swirl marks seen only in direct sunlight and leaves a protective coating that prevents further oxidization. For use on metal only.

Cannot be sold to residents in the following states: CA, CT, DE, DC, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VT, VA, WI

1GAL..... P/N 09-00423 .....$89.50
16 OZ..... P/N 09-00422 .....$17.95

CYCLO FREE FLITE™ CLEANER – POLISH

CTI Free Flite™ Cleaner - Polish is an aggressive rubbing compound for badly oxidized aluminum. It removes corrosion, oxidation, and surface film, leaving a hard polished finish. Popular with airlines for decades. For use on metal only.

1QT..... P/N 09-00424 .....$29.95
5GAL..... P/N 09-00425 ..... $269.95

CYCLO AVIATION POLISHING KIT

The Cyclo Dual Head Orbital Polisher is the most effective means of polishing available today. Even in the hands of a novice, it is safe to operate and provides professional results every time. The difference lies in the tool's overall balance and its patented dual heads. The dual heads operate in a synchronized motion, providing the most effective results without fear of heat buildup; damage to trim pieces, moldings and gaskets; swirl marks, holograms and more. The low-vibration and balanced design allow for a more even application and better control when operating. Electric Polishers.

The Cyclo Aviation Polishing Kit includes the Cyclo Polisher, two Cyclo wool polishing pads, two Cycloe green polishing pads, and one 1 lbs. can of MET-ALL aluminum polish. This kit will enable you to polish the painted and aluminum surfaces on your aircraft to a high shine quickly and easily. For complete line of Cyclo accessories see the Aircraft Spruce website or catalog.

Specifications:

- Power Supply: 115 Volts, 60 Hertz, 220 Watts
- Motor: alternating current, semi-enclosed 24-bar commutator
- Speed: 3000 orbits/minute
- Output: 1/3 H.P. (.25 Kw)
- Weight: 6.5 lb (2.9 kg)
- Head Rotation/Diameter: clockwise 4"
- Electric Cord: 10 feet length, 16 ga/3SJTOW
- Housing: Heavy-duty cast aluminum - polisher only

P/N 09-02553.....$328.00

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DE-ICER PRODUCTS

BF GOODRICH AGE MASTER RUBBER NO. 1 PROTECTIVE AGENT

FLAMMABLE

Age Master #1 rubber protectant helps extend the life of your de-icers so you can cut maintenance costs, slow deterioration and aging, extend service life and save money. Age Master #1 protectant isn't just a surface coat. It penetrates neoprene rubber to help retard damage from ozone, weathering and pollutants to help your de-icers stay strong and flexible. And now it's economical, long lasting and easy to apply. Just follow the simple BF Goodrich guidelines. Wipe or brush on Age Master #1 protectant every 150 flight hours or at least semi-annually, for continuing protection. Age Master #1, the only rubber protectant recommended by BF Goodrich. Meets military specification MIL-P-11520E. Age Master #1 protectant is a staining material. Avoid contact with painted surfaces. Apply sparingly and let dry thoroughly before flying in rain to prevent run-back.

Quart ..... P/N 09-42545 ..... $237.95

BF GOODRICH ICEX II FOR DE-ICERS

FLAMMABLE

Icex coating boosts your de-icer performance so you fly with greater confidence by helping your de-icers shed ice at peak efficiency. Icex coating chemically bonds with rubber de-icer surfaces and forms a slick film that makes your de-icers slippery. It will lower the adhesive bond between ice and de-icer surfaces so your de-icers break the frigid grip of ice better and faster! Icex coating is easy to apply and economical, too. A single application provides 50 flight hours of added ice fighting protection on leading edge de-icers and 15 flight hours of protection on prop de-icers. Get Icex coating in quart cans for an attractive uniform satin finish on your de-icers. One is enough to treat a complete single or twin-engine aircraft.

Quart ..... P/N 09-42530 ..... $369.00
16 oz. Spray ..... P/N 09-42531 ..... $229.00

BF GOODRICH DE-ICER CEMENT 8 oz. can ..... P/N 09-42535 $

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BF GOODRICH SHINEMASTER PNEUMATIC BOOT TREATMENT

Shinemaster Prep is a surface coating that cleans de-icing boots & prepares the de-icer for Shinemaster. Shinemaster is a wax surface coating that enhances the appearance of pneumatic de-icing boots. Simply clean the boots with Shinemaster Prep per the instructions, then apply a couple of coats of Shinemaster treatment per the instructions. New boots look spectacular and old boots look like new. Compatible with Agemaster No. 1 and Icex products.

Shinemaster Prep (qt) ..... P/N 09-42532 ..... $77.80
Shinemaster (pt) ..... P/N 09-00325 ..... $106.75

FLAMMABLE

RAPCO BOOTSAVER- THE DE-ICE BOOT REPAIR KIT

Another quality product from Rapco, Bootsaver seals pin holes by bonding with the boot material. It is black in color and can be smoothed to blend with the boot surface.

P/N 09-41705 ..... $68.75

JET STREAM PBS BOOT SEALANT

PBS Prep is formulated for use before each PBS Boot Sealant application to avoid dulling and hard to remove build-up. PBS Prep will effectively clean pneumaticde-ice boots of all old treatments assuring the best results possible when applying PBS Boot Sealant. Failure to prepare de-ice boots with PBS Prep may result in dulling due to build-up.

Qt. PBS Prep ..... P/N 09-41711 ..... $37.75
Qt. PBS Sealant ..... P/N 09-41712 ..... $55.75

KILFROST TKS406B ICE PROTECTION FLUID

TKS 406B contains a mixture of glycol and alcohol and offers good ice protection capability (freezing point below -60°C). Principally used for in-flight ice protection, TKS 406B can also be applied to remove frozen deposits of snow, ice and frost from stationery aircraft on the ground. TKS 406B is designed for use in cold concentrate form (as supplied) and is available in 2.5 gallon, 5 gallon, 30 gallon, and 55 gallon containers. Features: • Ice Protection capability • Fully biodegradable • Simple to use Note: NO HAZ SHIPPING FEES (UP TO 250 GAL)

Description	Part No.	Price
TKS406B Ice Protection Fluid 2.5 gal.	09-02401	$62.75
TKS406B Ice Protection Fluid 5 gal.	09-02402	$117.75
TKS406B Ice Protection Fluid 55 gal.	09-02404	$884.00
TKS406B Ice Protection Fluid 250 gal.	09-02984	$3,425.00

TKS FLUID FUNNEL

• Measure then release desired amount • On/off valve • Extension tube

P/N 12-02586 ..... $13.50

ICE AWAY - PROP ICE GRIP INHIBITOR

Sooner or later, most pilots get into icing conditions and an ice-free propeller may be the ticket to safety. Years of testing have shown Ice-Away to stay on for several hours in icing ccondi-tions. Ice-Away facilitates propeller ice shedding and enhances safety. Simply spray Ice-Away on the propeller leading edges and reapply as necessary P/N 09-00264 ..... $19.85

RAIN B GON

Rain B Gon will dramatically improve your wet weather flying, riding or driving visibility. A hydrophobic coating technology that forms a chemical bond and causes the raindrops to bead up and blow away from the windshield. Rain B Gon's innovative technology is designed especially for plastic Acrylic and Lexan windshields, and has no alcohol which can harm plastic. It is safe to use on glass windshields also. Can be applied on painted surfaces, and aids in easy removal of salt, ice, frost, insects and mud. 8 oz. spray bottle P/N 09-03487 ..... $9.95

RAIN-X RAIN REPELLENT

Aircraft with bleed air rain removal systems, such as Cessna Citation and Learjet, need to have their windshields treated to help disipate the rain. Repcom rain repellant was the recommended product, but it is no longer available. Rain-X is manufactured by the same company and it is the same formulation. While not FAA approved, it works well in dispersing water on the windshield. *Not Recomended for plexiglass or acrylic products, such as, windshields or windows on small general aviation aircraft. Benefits: • Improves driving visibility • Repels rain • Helps reduce sleet and snow from sticking • Rain-X transparent polymer coating causes rain to "bead up" and roll off glass surfaces

P/N 09-42500 ..... $4.95

RAIN AWAY

A protective treatment which leaves a clear, smooth, non-stick surface. Visibility is improved by repelling rain, bugs, frost and road film. Raindrops bead up and are blown away while flying.....

P/N 09-01279 $5.95

RAINCOAT ADVANCED WATER REPELLENT COATING

Raincoat® Spray is a hydrophobic (water repelling) wax blend suspended in a water/alcohol blend. (The alcohol is less than 10% which is safe on virtually all plastics.)

Depending on temperature and humidity, this wax will take about 5 to 10 minutes to dry and buff.

Once buffed clear, water drops are beaded up and repelled off of plastic surfaces much like a Teflon® pan. This water repellency rolls off drops that would normally distort vision, especially at night when reflections from lights are distracting. Another benefit is that your plastic windows will stay cleaner because water spots are reduced.

4 oz. Spray ..... P/N 09-03427 ..... $11.85
1 oz. Pump ..... P/N 09-04263 ..... $19.95

EZCLEAR ALL-SPRAY DETAILERS

The All-Spray Detailer packages All- Spray cleaner and a disposable Microfiber Towel into a portable Wet/Dry combo pack. This on-the-go Detailer is designed for a quick, single-time aircraft window cleaning application. Stow these window detailers in the back of the aircraft or in the glove box. The Detailer measure 3.25" x 4.5" when folded in half. A package of 10 makes a great gift.

P/N 09-02375 ..... $3.95

EZCLEAR ALL-SPRAY CLEANING AND DETAILING GA AIRCRAFT WINDOWS

Detailer's All-Spray is an aviation grade, anti-static detailing spray that will quickly restore a brilliant luster to acrylic surfaces. All-spray is ideal for cleaning aircraft windows, instrument panels, landing light and navigational lenses. It is also great for cleaning clear plastic boat windows, convertible windows, helmet shields, motorcycle windscreens, CD's, aquariums, skylights, displays, and other Plexiglas, Lexan, Acrylite and Lucite plastic surfaces.

32 o.z. ..... P/N 09-02379 ..... $29.50

EZCLEAR INSTRUMENT PANEL CLEAN KIT

This product meets Garmin G1000 Pilot Guide specs for cleaning and is safe to use on glass panels. EZCLEAR Instrument Cleaning provides a safe, effective way to remove fingerprints and dust from glass panels, instruments and more. The kit contains three EZCLEAR Cleaning Packs and one Polishing Cloth; these items have been specifically paired together to ensure safe and effective screen cleaning. Per the instructions, the user wipes the surface with the Cleaning Pack and then dries the area with the Polishing Cloth. The Cleaning Packs are ammonia free, aviation-grade and will not remove or damage any anti-reflective coating. The Polishing Cloth is washable. This kit will last between 3-4 months depending upon frequency of use. P/N 09-02394 ..... $14.85

EZCLEAR WINDOW POLISH KIT

Complete kitted solution. Used to restore aviation grade acrylic transparent surfaces such as an acrylic aircraft window, transparency, navigational or landing light lens. Removes major (heavy haze or scratches) or minor damage and restores clarity to 99.7%. Leaves clear, distortion free finish. Enough for 1-3 applications (4 sq ft), depending upon damage. Re-stockable EZCLEAR replenishment products available.

NOTE: The Ezclear Starter Demo Kit contains an Ezclear 5" Backing Plate(PN 09-03701). If purchasing the Repair Pack you need to purchase the 5" backing plate separately.

Starter Kit Contents: 1 - EZCLEAR Aviation Restoration Pack:(3) Major Restoration Polish/Disc (10CC + 5" White Disc), (1) Minor Restoration Polish/Pad (2 FL OZ + 5" White Pad),(1) Finishing Restoration Polish/Pad (2 FL OZ + 5" Red Pad), (1) Preparation Spray (16 FL OZ + Trigger Sprayer) 1 - 110V Dewalt Heavy Duty Polisher (includes handle) 1 - EZCLEAR Backing Plate (5", Standard) 1 - EZCLEAR Microfiber Towels (10 towels/pack) P/N 09-03693 ..... $299.99

Repair Pack Contents: 3 - Major Restoration Polish/Disc (10CC + 5" White Disc) 1 - Minor Restoration Polish/Pad (2 FL OZ + 5" White Pad) 1 - Finishing Restoration Polish/Pad (2 FL OZ + 5" Red Pad) 1 - Preparation Spray (16 FL OZ + Trigger Sprayer)

P/N 09-03694 ..... $88.50

5" Backing Plate ..... P/N 09-03701 ..... $29.85

NANOCLOAK™ NANO MEMBRANE

NanoCloak™ is a wonder of nano coating membrane technology, providing ultimate UV degradation protection and amazing self-cleaning properties. Applicable to most Aveo lights in aerospace, marine, transportation, and safety. It is also used for not only these features but also for its anti-microbial and anti-fungus/mold performance characteristics to make lighting in hospitals and schools etc. germ free. Features: Waterproofing, UV-proof, Anti-microbial, Self-cleaning, Anti-graffiti, and Dirtproof.

P/N 11-12322 ..... $119.00

NANOCLOAK™ DEGREASER

Hydrophobic and oleophobic polymer protection of plastics, polycarbonates, plexiglass, painted surfaces, ceramics, glazed surfaces and surfaces with plastic coating.

POLYMEMBRAN PLAST is innovative polymer protection of plastics, polycarbonates, plexiglass and composite plastic materials. The system of polymeric membranes creates an ultra-thin invisible layer with long lifetime on the surface. This layer significantly increases the surface tension. Thanks to this property, the surface is highly hydrophobic and resilient to impurities, grease, oils, mineral impurities and limescale. It is also an excellent prevention against establishment and growth of bacteria, mold, fungi and algae. Thanks to partial self-cleaning effect, the surface can be cleaned with only water or a wet cloth without using cleaning chemicals. This significantly reduce maintenance cost and time!

The product finds applications in various sectors such as construction and healthcare as protection of window frames, handles, worktops, skylights, plastic chairs, tables, shower stalls, bathtubs and more. In engineering as protection of sensors, detectors. In aqua parks as protection against establishment of dirt on the pool walls, glass, mirrors etc.

P/N 11-12323 ..... $39.00

RID ODOR SPORT

Rid Odor Sport is a product that nearly every owner of a Single Engine/Multi Engine both pressurized and non-pressurized need! Why? Because there are two things that nearly ever aircraft owner fights, whether they hanger their aircraft or tied down. Moisture and Bacteria are the two major reasons why cabin spaces have terrific problems with "Odors".

Rid Odor Sport is chemically engineered and designed to be attracted to ALL Malodor molecules and the reasons for them being there. Everything that is organic is surrounded by atoms. All atoms have one thing singularly in common and that is that they are oriented with a positive (+) charged molecules. Rid Odor Sport is designed so that the each molecule inside our formula is constructed with a negative (-) charged molecule. When Rid Odor Sport is pump sprayed into the vicinity of all of the" Malodor Molecules (+) ", the Rid Odor Sport Molecules (-) are attracted and drawn in by Malodor molecules. Once they collide, the Sports molecule bonds to the malodor and destroys the malodor molecule. Unlike other products that just mask over the odor, Rid Odor destroys the malodor and leaves the inside of the cabin smelling like new !

2 oz. Pump Spray ..... P/N 09-02609 ..... $7.95
8 oz. Trigger Spray ..... P/N 09-02610 ..... $12.75

AEROKROIL PENETRATING OIL

Corrosion, compression, chemical reactions, thermal variations, and electrical interrelationships are the primary factors which contribute in varying degrees to frozen metal parts. For example, in some instances, loosening a frozen metal part requires that the molecular bond of oxidation be broken at the first molecular level. This requires that a chemical bond be broken in an often-inaccessible location that literally exists in infinitely small spaces.

Based on a unique proprietary formula and manufacturing process, Kano created a molecule which had an inherent means of expedient self propulsion which would penetrate into spaces which are immeasurably small.

In the lab, it was nicknamed Creeping Oil, Kreeping Oil, and finally Kroil. To these penetrating properties were added the ability to disrupt the existing corrosive bond while remaining chemically neutral to the base metal. Since not all frozen parts are caused by corrosion, additional research has provided for the inclusion of other molecular properties assuring that the final molecular architecture would also be capable of loosening frozen metal parts when other factors such as compression were more responsible for the problem. The result is Kroil, the world's largest selling penetrating oil.

Guaranteed to penetrate, lubricate, and loosen frozen metal parts or it costs you nothing!

13 oz Aersol ..... P/N 09-02665 ..... $17.95
16.5 oz Aersol ..... P/N 09-03022 ..... $21.50

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LPS LOW SURFACE TENSION (LST)

A deep penetrating formulation attacks rust and corrosion to free "frozen" parts. LST has an extremely low surface tension that combines with a powerful foaming action to provide complete surface coverage, better penetration and improved moisture displacement. LST Penetrant lubricates and protects against rust and corrosion.11 oz. aerosol can..... P/N 09-01916..... $9.75

LPS COPPER ANTI-SEIZE

Prevents seizure up to 1800°F (982°C). Lead free. Protects against seizure, heat-freeze, galling, rust and corrosion. Brushes easily. Highly adhesive on both wet and dry surfaces. Will not run, drip or settle out. Conforms to Mil-PRF-907E. Ideal for use on stainless steel and for joining dissimilar metals. Copper color

1/2 lb. can..... P/N 09-02908..... $14.75

LPS MAGNUM TEFLON LUBRICANT

LPS® Magnum Teflon® Lubricant provides ultra-high lubricity, plus the additive strength of Teflon® for high-temperature, high-pressure environments. In even the most demanding situations, extend equipment life and reduce maintenance.

11 oz.. Spray Can..... P/N 09-26430 ..... $13.95

LPS® HEAVY-DUTY SILICONE LUBRICANT

FLAMMABLE

Meets FDA regulation for incidental food contact. Silicone-rich formula. Water-based formula. Colorless, odorless & non staining. Ideal for rubber and plastic surfaces. Eliminates sticking, binding and squeaking. Does not contain chlorinated solvents. Safe on most surfaces NSF® H1 registered. 13oz. (368g) – aerosol

P/N 09-26410 ..... $11.90

LPS FOOD GRADE SILICONE LUBRICANT

Food Grade Silicone Lubricant is a non-staining, high quality, lubricant designed especially for the food industry for use as an anti-stick agent for chutes and slides.

10 oz..... P/N 09-04052 ..... $8.95

LPS® COLD GALVANIZE CORRUSION INHIBITOR

FLAMMABLE

* Zinc purity greater than 99% * Works like a hot-dip on ferrous metals indoors and outdoors * Withstands water temperature up to 212°F (100°C) and continuous dry heat up to 750°F (400°C) * Commonly used as a flash rust preventive on welded areas * Long term protection * Flexible coating will not yellow, chalk, crack or peel * Electrochemically protects bare metal * Dries to touch in 3 to 5 minutes * 14oz. (397g) – aerosol

P/N 09-26425 ..... $12.50

LPS® INSTANT SUPER DEGREASER *

FLAMMABLE

* Heavy-duty performance * Power blast spray * Non-flammable * Removes oil, greases, dirt and tar * Non-chlorinated * Fast evaporating * Non-conductive * No rinsing * No residue * NSF® C1 registration #129029: (aerosol); #129028: (bulk) * Canadian Food Inspection Agency (CFIA) approved 20 oz..... P/N 09-26415 ..... $26.85

LPS KB-88 ULTIMATE PENETRANT

KB 88 has extremely high solvency and special additives to enhance penetration and attack corrosion. It makes the toughest maintenance job easier, faster, safer, and simpler. Formulated to attack and quickly release rusted and corroded nuts, bolts, hinges, and other frozen components. High KB solvency value of 151 and low surface tension and penetrates faster and deeper than most other similar products in the market place. Displaces moisture with an aggressive formula that is NSF® Certified: H2 Registration # 138554 (Aerosol) This product is VOC compliant in all 50 states.

13 oz..... P/N 09-04027 ..... $13.95

20 oz..... P/N 09-04028 ..... $19.50

LPS® TKX® ALL-PURPOSE LUBRICANT

All purpose, value lubricant which displaces moisture, loosens rusted or frozen parts and protects metal against corrosion. Does not contain chlorinated solvents or silicones. Safe to use on most surfaces. High flash point of 175°F (79°C). Inverta Spray Valve allows user to spray in an upright or inverted position. NSF® H2 registration. 11oz. (312g) – aerosol. ..... P/N 09-00148 ..... $6.65

LPS® HDX HEAVY-DUTY DEGREASER *

* Nonflammable * Removes oil, grease, wax, dirt, moisture, tar, brake fluid and other contaminants * Fast evaporating * Low odor * Quick penetration * No residue * Non-conductive * NSF K1 registration # 059809: (aerosol); # 059810: (bulk)

19oz. (539g) – aerosol ..... P/N 09-26407 ..... $10.50

1gal. (3.78l) ..... P/N 09-26408 ..... $69.25

LPS 1® PREMIUM LUBRICANT

Provides a dry, thin lubricating film. Resists oil, dust and dirt build-up. Fast acting penetration. Displaces moisture Loosens rusted or frozen parts. Provides a short term, light corrosion resistant barrier. Nonconductive Ideal for delicate mechanisms. Used worldwide in aviation. Safe on paint and most plastics. Inverta Spray Valve allows user to spray in an upright or inverted position NSF® H2 registered .

11oz. (312g) – aerosol ..... P/N 09-25900 ..... $12.95

1 gal. (3.78 l)..... P/N 09-26000 ..... $46.95

LPS 2® HEAVY-DUTY LUBRICANT

Strong, multi-purpose lubricant and penetrant with added corrosionprotection. Provides a nondrying, light, oily film for use on indoor/outdoor equipment. Reduces wear caused by friction and corrosion. Displaces moisture Loosens rusted or frozen parts. Provides up to one year of protection. Nonconductive Safe on paint and most plastics. Inverta Spray Valve allows user to spray in an upright or inverted position. NSF® H2 registered

11oz. (312g) – aerosol ..... P/N 09-26100 ..... $11.90

1 gal. (3.78 l)..... P/N 09-26200 ..... $52.75

LPS 3® PREMIER RUST INHIBITOR

* Forms a transparent, soft, waxy film for protection & lubrication * Inhibits rust & corrosion, protects steel parts indoors for up to two years * Penetrates to displace moisture * Does not contain chlorinated solvents or silicone * Nonconductive * Safe on most surfaces * Stops rust and corrosion * Provides non-sling lubrication * Provides anti-seize coating * Safe to use on rubber, fabric, plastics and paints * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® H2 registered #129027: (aerosol); #059849 (bulk)

11oz. (312g) – aerosol..... P/N 09-26300 ..... $16.75

20fl. oz. (591ml) – trigger ..... P/N 09-01223 ..... $22.50

1 gal. (3.78 l) ..... P/N 09-26400 ..... $67.80

LPS® QB PRECISION DUSTER *

Patented formula – Patented US #6,342,471. Electrical contact cleaner. Cleans electrical parts without harming plastics. * Non-flammable * Plastic safe * Non-conductive * No residue * Replaces HCFC 141b contact cleaners * Fast evaporating * Conforms to CARB VOC requirements. 10 oz. spray can.

P/N 09-26210 ..... $36.50

* ATTENTION: Volatile Organic Compounds (VOCs) Government Regulations: Product cannot be purchased, sold or used in the states listed below.

CA, CT, DC, DE, IL, IN, ME, MD, MA, MI, NH, NJ, NY, OH, PA, RI, VA

LPS® PRESOLVE® ORANGE DEGREASER *

* High performance industrial cleaner that cleans on contact * Ideal for removing grease, tar, oil & adhesives * Fast acting, deep penetration * Natural based * Does not contain chlorinated solvents * Flash point above 100°F (38°C) * Non-conductive * Low residue * Safe on all metals and most plastics * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® C1 registered #129025: (aerosol); #059830: (bulk)

15oz. (425g) – aerosol..... P/N 09-00311 ..... $15.50
1gal. (3.78l) ..... P/N 09-00312 ..... $91.75
5gal. (18.93l) ..... P/N 09-00313 ..... $351.00

LPS® ZEROTRI® HEAVY-DUTY DEGREASER *

* Penetrating action instantly removes oil, grease, wax, dirt, moisture, tar and other contaminants * Removes conformal coatings * No ozone depleting chemicals * Fast evaporating * Safe to use on most surfaces * Does not contain chlorinated solvents * No rinsing, no residue * Inverta Spray Valve allows user to spray in an upright or inverted position * NSF® C1 registered #059845: (aerosol); #059846: (bulk) * Canadian Food Inspection Agency (CFIA) approved

15 oz. spray..... P/N 09-26470 ..... $20.70

LPS® U-10 BRAKE CLEANER

* Low VOC (Volatile Organic * Compounds) content * Complies with CARB/OTC (California Air Resources * Board/ Ozone Transport Commission) Rules * Instantly removes brake fluid, dust, grease and oil * Improves brake performance * Helps stop disc brake squeal * Powerful jet spray and high solvency * Can be applied without disassembling the brake unit * No ozone depleting chemicals * Fast evaporating * Does not contain toluene * Does not contain chlorinated solvents * No rinsing or no residue * 14oz. (397g) – aerosol P/N 09-02119.....$11.50

LPS ELECTRO 140 CONTACT CLEANER

LPS Electro 140 Contact Cleaner is the high flash point, fast penetrating, non-residue cleaner alternative to CFCs for fine parts. The Electro 140 Contact Cleaner flash point is above 140°, making it safer to use in areas where flammability may be a concern. It is free of any known stratospheric ozone depleting substances - like CFCs, HCFCs, and 1,1,1 trichloroethane. Electro 140 has a low odor & is effective for flux removal and immersion cleaning.

11 oz.. Spray Can.....P/N 09-26465 .....$14.95

Warning: Due to VOC Regulations CA, OR, WA, CO states laws prohibit use, sell, or purchase of this product as of 01/2008.

LPS NO FLASH ELECTRO CONTACT CLEANER

LPS NoFlash is a vaporous solvent cleaner alternative to CFC's that's safe to use on most surfaces. It's nonconductive and nonflammable, so it can be used while equipment is in operation to avoid costly downtime. NoFlash Electro Contact Cleaner penetrates and evaporates quickly, dislodging oil, grease, dirt and other materials from precision mechanical and delicate electrical/ electronic parts leaving no residue.

P/N 09-26412 .....$31.60

LPS MICRO-X CONTACT CLEANER

Quick penetration. Does not contain any chlorinated solvents. No residue. No rinsing. Fast drying. Safe on metal and plastics. Inverta Spray Valve lets you spray in upright or inverted position. Value Performance. P/N 09-00151.....$12.85

Warning: Due to VOC Regulations CA, OR, WA, CO states laws prohibit use, sell, or purchase of this product as of 01/2008. Replacement P/N for these states is # 09-02045. Listed below.

LPS® LVC CONTACT CLEANER

Reduced VOCs (Volatile Organic Compounds). Conforms to CARB (California Air Resources Board) requirements for. VOC emissions. Fast evaporating. Ideal for electronic and fine parts. Cleans and degreases delicate precision mechanisms. Safe on plastics. Penetrating action removes oil, grease, dirt, flux and other contaminants. Does not contain chlorinated solvents. No residue

P/N 09-02045.....$17.85

LPS STRONG STEEL STICKS

Easy-to-use, hand-kneadable stick for immediate repairs to steel equipment and surfaces. Ideal for stopping leaks, even works on underwater applications. Permanently fills gaps and holes in metal, concrete, wood, fiberglass, and ceramics. Has a working time of 4 minutes, and will fully cure in 30 minutes to form a durable mass which can be machined, drilled, and painted. Can be used for many types of repairs, such as plumbing, electrical, ceramic, vehicle, equipment, and machinery. It is ideal for patching holes and cracks in pipes, drums, and tanks.4 oz. stick ..... P/N 09-26444 ..... $12.75

LPS ELECTRA-X CONTACT CLEANER

A non-flammable contact cleaner that removes oil, grease, dirt and other foreign materials from precision mechanical and delicate electrical/electonic parts. Fast evaporating. No flash point. No rinsing.

15 oz.. Aerosol ..... P/N 09-00153..... $20.65

LPS HARDCOAT CORROSION INHIBITOR

A low odor, durable, transparent film that offers multi-year protection of metal parts inside storage. HardCoat is a specially formulated, long-term corrosion inhibitor that offers multi-year protection for metal parts stored indoors. When applied, it penetrates and forms a durable, dry film which acts as an effective barrier, sealing out moisture, air, acid, and alkali fumes as well as other corrosive elements. In addition it does not attract dust or dirt. The tinted transparent film allows for good visual application and inspection of the treated surface.

Gallon.....P/N 09-25955..... $92.75

LPS MICRO-X NU FAST EVAPORATING CONTACT CLEANER

Reduced VOCs (Volatile Organic Compounds) Conforms to the VOC regulations of CARB (California Air Resources Board), OTC (Ozone Transport Commission) and LADCO (Lake Michigan Air Directors Consortium) Quick penetration. Safe on plastics. No residue. Ideal for electronic and fine parts. Does not contain any chlorinated solvents. Removes dirt, dust, flux and other contaminants. NSF Nonfood Compounds Program Listed Category Code: K2 Registration # 142149. Inverta Spray Valve lets you spray in an upright or inverted position.

Applications: Circuit Breakers , Connectors , Contacts Controls Fluid Systems Generators , Instrumentation , Keyboards , Magnetic Tape Heads , Motors Office Equipment, Printed Circuits , Relays ,Semiconductor Assemblies Sensors , Switch Gears , Switches , Telecommunication Equipment , Telephone Equipment, Terminals , TV Tuners

Specifications: Size: 11oz, Surface Tension: 17.3 dynes/cm @77 F KB Value: 24, Specific Gravity: 0.64 - 0.66 @ 77 F Flash Point: 0 degree F, VOC Content: 74%, 48l g/L, 4.0l lb (aerosol) Propellant: HFC 134a Nonvoltiles: 50 ppm maximum P/N 09-02563..... $14.75

LPS G-49 ORANGE DEGREASER LOW VOC'S

Reduced VOCs. Instant cleaning action, no residue. Excellent for removing grease, grime, oil, and adhesives. High solvent strength. Moderate evaporation. Excellent alternative to Methyl Ethyl Ketone (MEK). Ideal for cleaning equipment. Not a Hazardous Air Pollutant (HAP). No ozone depleting chemicals (ODC). NSF® registered category code C1, registration #142147. Inverta Spray Valve

P/N 09-02372..... $16.95

LPS TAPMATIC #1 GOLD

Tapmatic1 Gold Cutting Fluid is excellent tapping applications on all metals, including aluminum. It increases tool life while improving surface finish. #1 Gold does not contain chlorinated solvents, paraffins, water, or inactive fillers. Meets Boeing BAC 5008 Boeing D6-48809. P/N 09-00159..... $15.85

LPS PROCYON CORROSION INHIBITOR

Hard film rust & corrosion protectant. Multi-year protection of metal surfaces. Resists dirt buildup, dripping & puddling during application. Penetrating, water-displacing formula. Excellent to use in high risk area. Inspectable, removable film. Resists water, acids, alkalis, salt spray, corrosive, elements.1 Gal

P/N 09-00150.....$145.75

CS

CRC AVIATION MAINTENANCE PRODUCTS

CRC 3-36® MULTI PURPOSE LUBRICANT

FLAMMABLE

A corrosion inhibitor which helps prevent electrical and electronic malfunctions caused by water penetration, humidity, condensation, or corrosion. Displaces moisture and inhibits corrosion. •Appearance-Amber Liquid • Odor-Petroleum Distillate • Base Type-Petroleum • Flashpoint-144°F • Flammability-Flammable11 oz..... P/N 09-39600 .....$9.95

CRC ULTRA-LITE LUBE

Ultra-thin, non-staining lubricant that resists oil, dirt and dust build-up. Seals out moisture and prevents corrosion with protective film. Excellent for drying out electrical/electronic components. • Appearance-Amber Liquid • Odor-Petroleum • Base Type-Petroleum Solvent • Flashpoint-172°F • Flammability-Flammable • Specific Gravity-0.8034 • Plastic Safe-No • Film Type-Ultra Thin and Dry • Film Thickness-0.05 Mils • Working Temp-40 to 300°F 11 oz. ..... P/N 09-39602 .....$9.85

CRC POWER LUBE®

Multi-purpose lubricant that utilizes PTFE and extreme pressure additives• Appearance-Light Amber Liquid w/white pecipitate • Odor-Wintergreen • Base Type-Petroleum Solvent • Flashpoint-<20°F • Flammability-Extremely Flammable

11 oz. ..... P/N 09-39605 ..... $11.75

CRC HV SWITCHGEAR CLEANER & LUBRICANT

One-step cleaner, lubricant and corrosion inhibitor for metering. It penetrates to coat contacts and provides corrosion protection on switchgear mechanisms. Power Jet spray nozzle with a Hot Line tool adapter. Recommended for use on metering, distribution and substation class switchgear contacts, including URD and OVH applications. P/N 09-02611..... $24.95

CRC QUICK DRY CONTACT CLEANER

An alcohol-based precision cleaner that is 100% free of CFCs. Ideal for applications where lower flashpoint solvents may be used. It evaporates rapidly and completely and is harmless to most plastics. Applications include: •Switchgears • Circuit breakers • Telecommunication equipment • Fusible connecting devices • Motors • Generators •Relays • Terminals • Rheostats • Instrumentation •Communications equipment. Not for use on energized equipment. 16 oz. ..... P/N 09-39620 ..... $17.50

CRC PAINT & DECAL REMOVER

A solvent-based, high strength cleaner that effectively loosens and helps remove paint., adhesives and sealants. It helps protect equipment surfaces by eliminating damage caused by excessive scraping. Applications include: •Dissolves and aids removal of paints, lacquers, adhesives and varnish • Removes graffiti from metal and stone •Removes conventional and formed-in-place gaskets on motors, pumps & flanges. Not for use on energized equipment. 16 oz. ..... P/N 09-39622.....$12.50

CRC SPRAY ADHESIVE

A general purpose quick tack adhesive especially formulated to bond to many foils, plastics, papers, foams, metals, cardboards and cloths. P/N 09-02431.....$16.85

CRC MULTI-PURPOSE SUPER WHITE GREASE

A high purity, NLGI Grade 2 multi-purpose white lithium grease. Provides superior lubrication & durability in any weather and most temperatures. Bright white in color. Ideal for when appearance is important. Applications: Assembly lubes, bearings, break-in lubrication for bearings, cables, chains, chassis points, conveyor bearings, door tracks, garage door channels & openers, hinges, latches, machinery, open gears, overhead door tracks, roller bearings, sleeve bearings. P/N 15-06285..... $7.50

CRC GREEN FORCE MULTI-PURPOSE CLEANER

Formulated to meet strict environmental requirements without sacrificing performance. It is a safe and versatile product for all of your cleaning needs. P/N 09-02419.....$33.85

CRC GREEN FORCE HEAVY DUTY CLEANER

An environmentally preferable alternative to conventional water based solvent cleaners and degreasers. It quickly removes petroleum based soils such as grease, grime, and oil found in manufacturing environments. P/N 09-02420.....$43.50

CRC GREEN FORCE GLASS & SURFACE CLEANER

Ideally suited to clean soiled glass and other hard surfaces. It effectively cuts greasy films and soils, leaving surfaces sparkling clean. 32 oz.....P/N 09-02421 .....$10.50
Gallon .....P/N 09-02422.....$32.50

AVIATION DEGREASER

A halogenated solvent-based cleaner/degreaser that is chemically stable and extremely effective in heavy duty cleaning applications. Fast-acting, non-flammable, and evaporates quickly leaving no residue. Extremely effective solvent for cleaning and removing corrosion inhibiting compounds. Contains no HAPs. Removes carbon buildup. High dielectric strength of 26,800 volts. Allows for east visual inspection. Prepares metal surfaces for painting on adhesive bonding. Evaporates fast leaving no residue.

20 oz. aerosol ..... P/N 09-39690 ..... $24.99

Attention:Volatile Organic Compounds (VOCs) Government Regulations: Product cannot be purchased, sold or used in the states listed: CA

CRC REMOVER

A revolutionary alternative to 1,1,1 Trichloroethane and other chlorinated solvents. Cleaner and degreaser that effectively removes grease, oil, dirt and other contaminants from motors, parts and equipment. •Exhaust trails • Hinges • Antenna mounts • Static tubes •Wheel wells • Struts & tubes • Galleys • Seat tracks • Cargo doors • Cargo tracks. Not for use on energized equipment. 20 oz P/N 09-39642 ..... $19.00

CRC CORROSION SHIELD

A long-term corrosion inhibitor that provides extended protection for all metal parts and assemblies, both in storage and during shipment. Easily removed with solvent cleaners. • Seat and cargo tracks •Landing gear, wheel wells & keel beam • Fuselage structure • Wing to body fairing • Pins • Hinges • Wing front & rear spar • Lower fuselage interior • Wing interior structure • Horizontal stabilizer • Ground support equipment • Chains and cables • Air conditioning ducts • Lap joints • Skin panel edges • Emergency escape hatches • Bulkheads • Entry and cargo doors. Not for use on energized equipment. 20 oz. P/N 09-39655..... $13.95

CRC CORROSION SHELL

A long-term indoor and outdoor corrosion inhibitor for machined surfaces and assemblies subjected to long periods of storage or adverse conditions during shipment. Its firm, waxy film is highly resistant to humidity and salt spray and never becomes brittle. Petroleum solvents may be used to dilute the product to vary the film thickness or to remove it after application. Applications include: • Completed assemblies • Seat tracks • Chains and cables • Landing gear •Wheel wells • Faying surfaces• Air conditioning ducts • Lap joints • Skin panel edges • Fuselage • Landing gear and bilges • Emergency escape hatches • Bulkheads • Entry & cargo doors. Not for use on energized equipment.16 oz.

P/N 09-39657 ..... $15.50

ISOPROPYL ALCOHOL - ULTRA PURE CLEANING SOLVENT

A quick drying light-duty degreaser for use in industrial, electrical, electronic and aviation applications. Its 99% pure formula aggressively dissolves grease, dust, dirt, lint, oils and flux from most non-plastic surfaces. 12oz..... P/N 09-02423 ..... $10.95

CRC BATTERY CLEANER

Water-soluble formula removes corrosion quickly and economically. Neutralizes acid spills. Restores battery output and reduces voltage leakage due to contaminants. Assures maximum battery current flow and promotes longer battery life. 11 oz.

P/N 09-02424 .....$8.50

CRC KNOCK'ER LOOSE PLUS PENETRATING SOLVENT

A unique penetrant that immediately drops the temperature of the area in contact with the spray. The freeze shock action cracks rusted surfaces allowing it to reach deeper & work more effectively than other penetrants. 11.5 oz. ..... P/N 09-02426 .....$9.90

DRY GRAPHITE LUBE

Ideal where a dry lubricant is required or where petroleum products must be avoided. Resists dirt, dust and oil build-up. Wide effective temperature range up to 850°F constant. 10 oz.

P/N 09-02427 ..... $10.85

CRC WHITE LITHIUM GREASE

Superior lubrication and durability in any weather or temperature. Perfect for use as a break-in lubricant for bearings or as a general purpose lubricant and corrosion inhibitor for tools, machinery and equipment. 10 oz. P/N 09-02428 ..... $11.95

LOCTITE THREADLOCKER

Loctite Threadlocker used on a standard fastener can eliminate expensive locking devices while you increase the reliability and quality of your assembly. One drop prevents loosening. 2 removable strengths for large & small applications and permanent strength for locking parts you never want to take apart.

#222 Threadlocker (permanent, for small screws)

10 ml ..... P/N 09-42605 .....$14.50 50 ml..... P/N 09-42610.....$39.65

#242 Threadlocker (removable, for large screws)

10 ml ..... P/N 09-42615 .....$16.75 50 ml..... P/N 09-42620.....$39.90

#262 Threadlocker (permanent, for large screws)

PARKER-O-LUBE

Excellent for use on exposed valve plungers, cylinder rods, and other o-rings. It lubricates without causing deterioration of rubber and is water resistant. Good for low pressure vacuum and pneumatic systems.

4 oz. tube ..... P/N 05-00773..... $8.50

SEALUBE

Anti-seize sealer for threaded aluminum alloy parts exposed to gasoline, oil, water, air or vacuum. Good lubricating qualities. Will not harden or set. Will not freeze joints at low temperatures. Non-corrosive, insoluble in gasoline, oil or water.

1 Lb. Can.....P/N 09-25200 .....$44.50

LUBRIPLATE NO. 630AA

Multi-purpose lubricant. Forms a wearing film on working surfaces. Excellent protection against rust and corrosion. Recommended for controllable pitch props, wheel and magneto bearings, general greasing.

14 oz. Can .....P/N 09-25400 ..... $13.90

6 Lb.. Can.....P/N 09-25500 ..... $65.75

WD-40 PENETRANT/LUBRICANT

Displaces moisture on any metal surface, preventing rust, corrosion or oxidation of the surface. Used on switches pulleys, wheel housings, seam areas. Non-gumming, non-conductive—safe for all electrical systems. 12 oz. Spray

P/N 09-00347..... $9.50

FAST DRYING GRAPHITE SPRAY 50605

Lubricates and protects - MCKAY Graphite Spray lubricates and leaves a fast drying graphite film on all automotive, marine and industrial parts before and after assembly. Keeps gears, valves, heads, shafts, rocker arms, engines, transmissions and all metal parts operating quietly and efficiently by reducing heat and friction. Keeps valves and valve seats carbon-free. Leaves a dark metal-like finish that adds a high quality look to all repair work. prevents rust, corrosion and shelf deterioration. Non-abrasive, non-flammable, non-corrosive, non-toxic. Harmless to Anti-freeze and coolants. 12 Oz. Spray P/N 09-25600..... $4.35

EZ TURN LUBRICANT (FUELUBE)

EZ Turn is a specialty lubricant/sealant used for fuel and oil line valves and is resistant to high temperatures. It is expecially effective where high octane fuels and aromatics are present. EZ Turn is also extremely efficient as a gasket paste and anti-seize agent. EZ Turn will not gum, crack or dry out. Each shipment is independently tested. Excellent for tapered plug valves, aircraft engine manufacturing, and marine applications. EZ Turn is the functional equivalent of fuel lube.

5 oz. tube .....P/N 09-00306.....$11.85

1 Lb. can.....P/N 09-00180.....$22.75

TRI-FLO TEFLON LUBRICANT

Penetrating lubricant with Teflon, corrosion inhibitors, moisture displacers and solvents to soften and remove dirt and corrosion. Will not cause corrosion. Use on aircraft cabin door hinges, landing gear hinges and struts. Loosens rusted bolts and other fasteners. 12oz. aerosol can P/N 09-42540.....$16.90

FOAMING SUPERIOR LUBRICANT

Tri-Flow is revolutionizing the way you clean, protect and lubricate all of your moving parts with the introduction of Foaming Superior Lubricant and Foaming Citrus Cleaner Degreaser. Tri-Flow's powerful foaming action clings to both horizontal and vertical surfaces to allow for deep penetration and accurate application. Tri-Flow Foaming products are ideal for use on bicycles, firearms, sporting equipment, manufacturing equipment, and more!

P/N 09-02082.....$12.50

LIQUID WRENCH

A powerful blend of quick acting solvents to free parts frozen by rust, corrosion or paint. Harmless to metals. 11 oz. Aerosol

Spray.....P/N 09-25800 ..... $4.35

F-900 "TORQUE SEAL"

Inspection Lacquer is used in production on compression fittings, studs, nuts, parts, and assemblies after they are in proper torque or position. Widely used as "Anti-Sabotage Lacquer". Inspectors can visually detect any movement or tampering; Torque Seal becomes brittle and will crack. Excellent adhesion to all metals and to most other surfaces. Dries fast. Torque Seal is packaged in convenient 1/2 oz. poly squeeze tubes. Available in 6 high visibility colors.

Yellow ..... P/N 09-25807 ..... $1.95
White..... P/N 09-02411 ..... $1.95
Blue..... P/N 09-25809 ..... $1.95
Green ..... P/N 09-25808 ..... $1.95
Orange..... P/N 09-25810 ..... $1.95
Red..... P/N 09-02033 ..... $1.95

F-925 RESISTANT SEAL

F-925 "Skydrol" RESISTANT SEAL An inspection lacquer used in areas where aircraft hydraulic fluid (Skydrol) might come in contact with the seal. A fast drying material that has excellent adhesion to most substrates. It becomes hard and brittle so that visually any movement can be detected. Available in 1/2 oz. squeeze tubes. Color YELLOW and PINK

Yellow ..... P/N 09-25811 ..... $3.50
Pink..... P/N 09-03486 ..... $3.50

F-1000 SENTRY SEAL

Used on compression fittings, studs, nuts, parts and assemblies after they have been set to proper tension or position. Service personnel or inspectors can quickly spot any changes or tampering with equipment. Sentry Seal has excellent adhesion to metals, including aluminum, magnesium, titanium, stainless and copper, and is non-corrosive to these metals. It is packaged in handy metal tubes. Squeeze the tube to extrude the Sentry Seal through the small hole to form a bead (narrow stripe) across the parts. The surface dries in about one minute, then it will start to polymerize and become brittle as it dries completely. Available in blue.

P/N 09-28512.....$4.95

CS

LUBRICANTS

BOELUBE LUBRICANTS

A Space Age Lubricant developed by The Boeing Company that fights friction at the interface of the cutting edge and theworkpiece.The reduction of friction at these surfaces minimizes heat generation and concurrent chip weld. Tools retain their cutting edge longer, leading to closer tolerances and prime chip yield. Manufactured frompersonal care ingredients, Boelube is non-toxic, non-irritating and biodegradable. Boelube is non-corrosive, non-flammable, chemically stable and free of halogens, heavy metals, sulfur, phosphorus, silicone, petroleum or paraffin wax.

BOELUBE BL70200-13 SOLIDS LUBRICANT

Drilling - Tapping - Reaming - Abrasive Belts - Files - Deburring Tools - Grinding Wheels - Chisels - Band, Circular and Hand Saw Blades.

Boelube Solids improve tool life by reducing heat build-up in belt, disc or wheel grinding operations. Apply the push-up tube to the tool before start up. Individual Boelube Blocks are ideal for grinding operations.

1.6oz Push Tube .....P/N 09-01731 ..... $2.85

BOELUBE 90 HIGH EFFICIENCY MACHINING LUBRICANT

BOELUBE® 90 is non-toxic, non-irritating, environmentally safe synthetic lubricant that is effective for machining many types of materials. BOELUBE® 90 will provide superior lubricity leading to better finish and longer tool life. BOELUBE® 90 is compatible with Aluminum, Titanium, Graphite, Composites, Honeycomb, Inconel, Kevlar, Wood, Ferrous and Non-ferrous Metals. BOELUBE® 90 is recommended for Drilling, Deburring, Broaching, Forming, Grinding, Milling, Gun Drilling, Routing, Reaming, Oil Hole Tools, Sawing, Punching and Tapping. BOELUBE® 90 is best utilized in One-Shot or Mist Applications, and is ideal for applications where Cold-Cut® or Positive-Lube units are utilized.

4oz Bottle .....P/N 09-01734..... $7.75
Gallon.....P/N 09-01733..... $118.75

BOELUBE 70104 LUBRICANT

BOELUBE® 70104 is non-toxic, non-irritating, environmentally safe synthetic lubricant manufactured from personal care ingredients that is effective for machining many types of materials. BOELUBE® 70104 will provide superior lubricity leading to better finish and longer tool life. BOELUBE® 70104 is non-corrosive, non-flammable, chemically stable, and free of Halogens, Silicone, Petroleum, Paraffin Wax, Sulfur, Phosphorus and Heavy Metals whether added or present in any of its ingredients. BOELUBE® 70104 is compatible with Aluminum, Titanium, Graphite, Composites, Honeycomb, Inconel, Kevlar, Wood, Ferrous and Nonferrous Metals. BOELUBE® 70104 is recommended for Drilling, Deburring, Broaching, Forming, Grinding, Milling, Routing, Reaming, Gun Drilling, Oil Hole Tools, Sawing, Punching and Tapping.

Handheld lubricant.....P/N 09-01732 .....$8.70

BOELUBE BL70307L PASTE

Boelube® Pastes provide excellent lubricity and are extremely cost effective in single point work such as Tapping, Drilling and Reaming. A small amount of Paste applied to the tool is all that is required to obtain a high quality finish and extended tool life with little or no clean-up required. Brush it on or dip tool in paste. Boelube pastes are also ideal for Forming and Bending as well as in Drop Hammer, Verson Press and Spin Forming applications. Boelube Pastes provide closer tolerance parts and extended diaphragm and die life. We furnish 70307 meduim (blue) paste. 4oz Jar .....P/N 09-01735 .....$7.50

CS

PERMATEX ANTI-SEIZE LUBRICANT

Prevents galling, seizing and corrosion of metal parts from 65°F to 2000°F. Acts as a low speed lubricant and maintains a corrosion-resistant coating at high temperatures. Makes aluminum and stainless steel joints disassemble quickly, easily. Excellent lubricant for press fit assembly. Works on industrial engine parts, boilers, outdoor motors, cables and internal combustion engines. Conforms to MIL-A-907D. Improves reliability at high temperatures. Saves time, labor.

1 oz. tube.....P/N 09-28410..... $4.75

LOCTITE BLACK HIGH PERFORMANCE RTV SILICONE GASKET MAKER

Loctite® 598™ Black High Performance RTV Silicone Gasket Maker retains high flexibility and oil resistance for longer gasket life. Temperature range is -75°F to 625°F (-59°C to 329°C) intermittent. Low odor, non-corrosive. Resistant to most chemicals and solvents. Fills gaps to 0.25". P/N 09-03532 .....$26.50

MICROLON PRECISION OILER

This oiler has the famous Microlon resin suspended in a lightweight oil to lubricate, penetrate and prevent rust. It is excellent for lubricating bearings, threaded parts, hinges, pocket knives, chains, rollers, fishing gear, chain saws, guns, garage doors.....just about anywhere that friction causes noise and resistance. Furnished in a handy pen size oiler with a pocket clip. .25 Fluid Ounces.

P/N 09-00756 .....$6.95

LOCTITE QUICKSTIX C5-A COPPER ANTI-SEIZE

Loctite® QuickStix™ C5-A® Copper Grade Anti-Seize Stick provides a shield against high temperature seizing and galling. All mated parts, studs, bolts, flanges and gaskets, remove more easily and in cleaner and better condition. This product can be used on copper, brass, cast iron, steel, all alloys including stainless steel, all plastics and all non-metallic gasketing materials. Protects metal parts to 1800°F. Prevents rust, corrosion, seizing; eases disassembly. Fine or coarse threads. .....P/N 09-03533 .....$13.85

CHEVRON RPM UNIVERSAL GEAR LUBRICANT

RPM® Universal Gear Lubricants are recommended for use in spiral bevel and hypoid differentials, power dividers, and oil-lubricated steering axle wheel bearings. Chevron Delo Gear Lubricants ESI are premium grade, multipurpose gear lubricants. They are formulated with ISOSYN® base stocks and compounded with a unique extreme pressure additive utilizing an inorganic borate compound. They also contain a patented, synergistic combination of additives that protect against wear, seizure, oxidation, corrosion, rust, and foam. Chevron Delo Gear Lubricants ESI are ideally suited for gear sets exposed to extremely high temperatures and loads.

P/N 15-08281.....$12.85

SLICK AIR LOW DRAG COATING

It's not a wax and it's not a polish, it is a coating which was specifically designed to reduce air drag. It is a revolutionary coating that has a non-reactive inert surface that is very slippery. It reduces air drag because it has a very low surface energy which allows the air molecules to slip at the surface. This partial slip condition increases the air velocity at the surface. In a typical boundary layer profile the air velocity at the surface is zero and increases exponentially until, at the outer edge of the boundary layer, it is the same as the free-stream velocity. The shape and magnitude of the boundary layer's velocity profile determines the momentum loss, which corresponds to the drag. The higher the velocity near the surface, the lower the air drag. It is as easy to apply as any liquid car wax but with much less elbow grease required. It is like having three products in one. A cleaner to remove tar, tree sap, stains and pollutants, a micro fine leveling agent to level and remove fine scratches and blemishes on clear coats and dead paint on single stage finishes. P/N 09-03754 .....$33.95

LOGO DECALS

AUTHENTIC AIRCRAFT LOGO DECALS

Our full line of authentic aircraft logos are produced on state-of-the-art long lasting UV coated pressure sensitive adhesive vinyl. They are precision cut by a specially programmed computer and have no clear background. Other brands of decals can be produced cheaply but the clear background tends to yellow, rendering unsightly over time. With our custom cut decals, only the letters themselves go on the aircraft giving the lettering a truly professional look which will last as long as the aircraft paint. Please order by part number shown. Many other logos and styles are available, as well as other colors. Call for quotation or send $2.00 for our complete logo and decal catalog. For quote on custom logo decals, send sketch and details.

FOR OTHER LOGOS AVAILABLE. Send $$2.90 FOR COMPLETE LOGO AND DECAL CATALOG P/N 09-43736

AERONCA

5.75"h x 13.25"w
Black.....09-43502 ..... $9.95
White.....09-43504 ..... $8.95

DECATHLON

1-5/8"h x 10-3/4"w
Black .....09-43506 .....$11.95
White.....09-43508 .....$11.95

BELLANCA

Black, Gold, White
6"h x 8.75"w
09-43509..... $37.50 pr.

Citabria

2"h x 9-1/2"w
Black..... 09-43516
White..... 09-43518
$14.95 ea

Cessna

Black..... 09-43519
White 09-43522
Red..... 09-43524
Blue..... 09-43526
6"h x 10.5"w $19.90 /pr

140 Cessna

Black..... 09-43528
White..... 09-43529
Red..... 09-43532
Blue..... 09-43534
6"h x 10.5"w $21.50 pr

cessna

Black..... 09-43536
White..... 09-43538
2"h x 10.5"w $12.95 ea

CESSNA

Black..... 09-43540
White..... 09-43542
Gold..... 09-43544
2"h x 8.25"w $12.95 ea.

Cardinal

Black..... 09-43546
White..... 09-43548
4-1/4"h x 10"w $12.95 ea.

SKYLANE

Black..... 09-43550
White..... 09-43552
1.75"h x 10"w $12.95 ea.

SKYLANE

Black..... 09-43554
White..... 09-43556
2.25"h x 8.5"w $12.95 ea

SKYWAGON 180

Black..... 09-43558
Silver..... 09-43560
1.25"h x 14.5"w $13.95 ea

CENTURION

Black..... 09-43562
White..... 09-43564
1.5"h x 15.5"w $12.95 ea

Gold..... 09-43566
6.25" Diameter $27.90 pr

Turbo CENTURION II

2.937"hx18.75"w
Black..... 09-43568
White..... 09-43570
$13.95 ea

SKYHAWK

Black..... 09-43572
White..... 09-43574
1.5"h x 13"w $13.95 ea

Skyhawk

Black..... 09-43576
White..... 09-43578
4.5"h x 9.5"w $12.95 ea

17.5"hx8.875"w
Gold Bkgrnd, Black Border
P/N 09-43580 ..... $37.90 pr.

Skymaster

Black..... 09-43582
White..... 09-43584
5"h x 8.75"w $13.95 ea.

Mooney

Black..... 09-43586
White..... 09-43588
1.75"h x 8"w $11.95 ea.

Small Black..... 09-43587
Small White 09-43589
4"h x 10"w $22.75pr.

Large Black..... 09-43591
Large White 09-43593
7.75"h x 19"w $35.90 pr.

Full Color 09-43598
8.5"h x 7.75"w $9.95 ea

Full Color
09-43500..... $9.95 ea
1-Color
09-43602..... $8.95 ea
2-1/2"h x 5-1/4"w

PIPER

Black..... 09-43604
White..... 09-43606
2"h x 8.75"w $10.95 ea

Piper

Black..... 09-43608
White..... 09-43609
2.5"h x 11.25"w $12.95 ea

CHEROKEE 140

Black..... 09-43612
1.5"h x 11-3/8"w $13.95 ea

CHEROKEE 180 C

Black/Silver 09-43616
White..... 09-43618
1.5"h x 12.5"w $13.95 ea

Archer II

Black..... 09-43619
White..... 09-43622
2.75"h x 10"w $12.95 ea

Warrior II

Black..... 09-43624
White..... 09-43626
3"h x 11"w $13.95 ea

Arrow

Black..... 09-43628
White..... 09-43629
2.75"h x 6-1/8"w .....$12.95 ea

CHEROKEE SIX E

Black..... 09-43632
Silver..... 09-43634
1.5"h x 13"w $12.95 ea

Comanche C

Black..... 09-43636
White..... 09-43638
1.25"h x 12.75"w.....$13.95 ea

SENECA

Red&Black w/Silver Bkgrnd
09-43640
2-1/8" x 61/2" $14.25 ea

Super Cub

Black..... 09-43642
White..... 09-43644
1.5"h x 7.75"w $14.95 ea

Beechcraft

Black
09-43646.....$13.95 ea
White
09-43648.....$13.95 ea
Gold
09-43650.....$18.95 ea
4-1/8"h x 13-1/2"w

Baron

Black..... 09-43652
White..... 09-43654
3"h x 7"w $14.95 ea

Bonanza

Black..... 09-43656
White..... 09-43658
3"h x 9"w $11.95 ea

Bonanza

Black..... 09-43660
White..... 09-43662
2.5"h x 8.5"w $15.95 ea

Luscombe

Blue on Silver 09-43664
2.5"h x 7"w $13.95 ea

MAULE

Black..... 09-43666
White..... 09-43668
2-7/8"h x 17"w $13.95 ea

TURBO

Black..... 09-43670
White..... 09-43672
2.5"h x 17-3/8"w .....$11.95 ea

TURBO CHARGED

Black..... 09-43674
White..... 09-43676
1"h x 10-7/8"w $9.95 ea

Pitts

Black..... 09-43678
White..... 09-43680
4"h x 12"w $12.95 ea

SPECIAL

Black..... 09-43682
White..... 09-43684
1"h x 5"w $8.95 ea

TAYLORCRAFT

Black..... 09-43686
White..... 09-43688
2.5"h x 18-5/8"w $8.95 ea.

Glasair III

Black..... 09-43690
White..... 09-43692
2.25"h x 17"w $14.95 ea

Glasair

Black..... 09-43694
White..... 09-43696
2.75"h x 15.75"w.....$13.95 ea

LANCAIR

Black..... 09-43698
White..... 09-43700
2.5"hx 8.75" $17.95 ea

PULSAR

Black..... 09-43702
White..... 09-43704
3"h x 14.5"w $13.95 ea

RANS

Black..... 09-43706
White..... 09-43708
2"h x 9.5"w $12.95 ea

AIRCHILD

Black..... 09-43709
White..... 09-43712
3.25"h x 8.75"w $14.95 ea

Stearman

Black..... 09-43718
White 09-43719
4"h x 19"w $9.95 ea

Swift

Black..... 09-43722
White..... 09-43724
Gold outline on both.
3"h x 5.5"w $15.95 ea

WACO CLASSIC

09-43728
(Black, Red, Gold)
2-3/8"hx14.25"w $13.95 ea

Small: 4"H x 8"W
Left..... 09-43732-1 .....$14.95
Right.... 09-43732-2 .....$14.95

Large: 6"H x 12"W
Left..... 09-43734 .....$17.95
Right.... 09-01955 .....$17.95

CS

LOGO DECALS

3" ..... 09-43740 ..... $4.95 ea
4.5" ..... 09-43741 ..... $6.95 ea
Not available in lefts and rights only available as shown.

Full Color 09-43748
2"h x 6.75"w $7.95 ea

Black & Silver 09-43751
1.25"h x 8-3/8"w $13.00 ea

Black 09-43752
4-7/8"h x 12-7/8"w $15.95 ea

09-43755(White) ..... $18.00 ea.

Black 09-43756
White 09-43757
3.5"hx16-5/8"w $23.95 ea

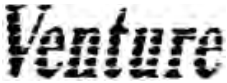
Black 09-43758
White 09-43759
5/8"h x 8.25"w $9.95 ea

Black 09-43742
White 09-43743
1"h x 4.25"w $8.95 ea

Black 09-43744
White 09-43745
5"h x 12"w $13.95 ea

Full Color-screened 09-43764
8.25"h x 9"w $19.95 ea

Black, Grey, White, Red 09-02103
6"h x 1.5"w ..... $4.50 ea



Black 09-43746
2.25"h x 6.75"w $12.95 ea

Black 09-43780
White 09-43781
9.25"h x 23.5"w $18.95 ea

Black 09-43782
3.25"h x 3.25"w $12.95 ea

Left, Black 09-43784
Right, Black 09-43785
5.25"h x 5-3/8"w $10.95 ea

Black 09-43788
8"h x 16"w $23.95 ea

White 09-43791
2-1/8"h x 8.25"w $10.95 ea

Black 09-43792
9-7/8"h x 46.75"w $33.95 ea

Black 09-43796
White 09-43797
3-3/8"h x 11.5"w $17.95 ea

Black & Silver 09-43798
2.5"h x 12"w $21.95 ea

B lack 09-43800
White 09-43801
1"h x 9-1/8"w $8.95 ea

Black 09-43802
1.5"h x 13"w $9.95 ea

Black 09-43806
5.75"h x 13.25"w $16.95 ea

Black 09-43808
White 09-43809
2.5"h x 12.75"w $15.95 ea

Black 09-43811
1"h x 10"w $21.75 ea

Left, Black 09-43813
Right, Black 09-43814
Left, White 09-43816
3"h x 3.5"w $8.99 ea

Black 09-43774
4-3/8"h x 10"w $11.95 ea

Black 09-43778
White 09-43779
4-3/8"h x 10"w $11.00 ea

Black 09-43822
White 09-43823
1.75"h x 8.75"w $11.95 ea

Left, Black 09-43824
Right, Black 09-43826
Left, White 09-43827
Right, White 09-43828
4-3/8"h x 5-7/8"w $13.95 ea

Black 09-43829
White 09-43831
2.75"h x 19"w $13.95 ea

Left,Black 09-43832
Right,Black 09-43833

1.5"h x 11.75"w $25.95 ea.

Left, Black 09-43837
Right, Black 09-43838
1.5"h x 7.5"w $15.95 ea

Black 09-43841
White 09-43842
1.5"h x 7.5"w $9.95 ea

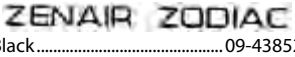
Black 09-43843
2"h x 12.5" $10.95 ea

Black & Gold 09-43845
2.5"h x 10.5"w $16.95 ea

Black 09-43749
White 09-43750
3.5"h x 7.5"w $16.95 ea

Black 09-43848
White 09-43849
1.25"h x 8.5" $9.95 ea

Black 09-43850
White 09-43851
5"h x 20"w $17.95 ea



Black 09-43852
White 09-43853
1"h x 14.25"w $11.95 ea

Black 09-43765
White 09-43766
3"h x 6.75"w $9.95 ea

CS

LOGO DECALS

CENTURION
CL-311-1-3/16"h x 10-3/4"w
P/N 09-43981 (Blk)
P/N 09-43982 (Wh)
$10.95 ea.

STATIONAIR
CL-137 - 1-1/2"h x 14-1/2"w
P/N 09-43983 (Blk)
$14.25 ea.

SKYMASTER
CL-359 - 1-1/2"h x 11-1/2"w
P/N 09-43985 (Blk)
P/N 09-43986 (Wh)
$13.95 ea.

SKYMASTER 337
CL-179 - 1-1/2"h x 15-1/8"w
P/N 09-43987 (Blk)
$13.95 ea.

Golden Eagle
CL-126 - 2-1/2"h x 13-5/8"w
P/N 09-43989 (Blk),
$13.95 ea.

421 GOLDEN EAGLE
CL-299L&R - 1-5/8"h x 24"w
09-43992 (Blk)
09-43994 (Gd)
$13.95 ea.

CHRISTEN HUSKY
CH-060 - 3/4"h x 7-1/4"w
P/N 09-43997 (Blk)
P/N 09-43998 (Wh)
$12.95 ea.

Curtiss
CR-031 - 6-3/8"h x 12"w
P/N 09-43999 (Blk)
P/N 09-44001 (Wh)
(up to 15"w) $19.95 ea.

EXTRA 200
ET-001 - 1-3/4"h x 15-1/2"w
P/N 09-44002 (Blk)
P/N 09-44003 (Wh)
$14.95 ea.

EXTRA 300
ET-002 - 1-3/4"h x 15-1/2"w
P/N 09-44004 (Blk)
P/N 09-44006 (Wh)
$16.95 ea.

Funk
FU-002 - 4-3/4"h x 16-1/2"w
P/N 09-44007 (Blk)
P/N 09-44008 (Wh)
$17.95 ea.

GL-002L&R - 4-1/2"h x 15"w
(Full Color on Tail)
P/N 09-44009
$39.95 ea.

GULFSTREAM
GL-016 - 3/4"h x 5-1/2"w
P/N 09-44011 (Blk)
$11.95 ea.

Learjet
LE-001 - 3-1/8"h x 10-1/4"w
P/N 09-44013 (Blk)
P/N 09-44014 (Wh)
$13.95 ea.

Meyers 200
MR-001 - 1"h x 5-1/2"w
P/N 09-44016 (Blk)
P/N 09-44017 (Wh)
$15.60 ea.

MOONEY Ranger
ML-053L&R - 1-1/2"h x 9"w
P/N 09-44018 (Blk)
$25.90 ea.

Mooney 201
ML-037 - 1-1/4"h x 8-3/4"w
(Black, White or OPT. Wing Tip)
P/N 09-44021 (Blk)
P/N 09-44022 (Wh)
$16.70 ea.

Turbo Mooney 231
ML-017 - 1-3/4"h x 18"w
P/N 09-44023 (Blk)
$18.95 ea.

TLS
ML-012 - 1-1/2"h x 4-1/4"w
P/N 09-44026 (Blk)
P/N 09-44027 (Wh)
$14.95 ea.

Ryan Navion
NL-004 - 3-1/4"h x 12"w
P/N 09-44028 (Blk)
P/N 09-44029 (Wh)
$19.95 ea.

Fat Pacer
PL-128 - 2-1/4"h x 18-1/2"w
P/N 09-44031 (Blk)
P/N 09-44032 (Wh)
$15.95 ea.

LANCE
PL-248 - 1-1/2"h x 10"w
P/N 09-44033 (Blk)
$12.95 ea.

LANCE II
PL-073 - 1-5/8"h x 14-1/4"w
P/N 09-44036 (Blk)
P/N 09-44037 (Wh)
$12.95 ea.

APACHE
PL-116 - 2-3/8"h x 10-7/8"w
P/N 09-44038 (Blk)
P/N 09-44039 (Wh)
$12.95 ea.

aztec
PL-058 - 1-3/4"h x 3-1/2"w
P/N 09-44041 (Blk)
P/N 09-44042(Wh)
$13.95 ea.

DAKOTA
PL-0191- 1/8"h x 9-1/2"w
P/N 09-44043 (Blk)
$11.95 ea.

SEMINOLE
PL-020 - 1-1/2"h x 15"w
P/N 09-44046 (Blk)
$15.95 ea.

NAVAJO
PL-091 - 3"h x 23-1/2"w
P/N 09-44048 (Blk)
$15.95 ea.

CHIEFTAIN
PL-083 - 2"h x 20-5/8"w
P/N 09-44051 (Blk)
$15.95 ea.

RL-018 - 6-1/2"h x 7"w
P/N 09-44053 (Blk)
$13.95 ea.

Commander 112
RL-027 - 3"h x 21-1/2"w
P/N 09-44056 (B/W)
$16.95 ea.

Commander 112B
RL-016 - 3"h x 16-1/2"w
P/N 09-44058 (B/G)
$15.95 ea.

Commander 112TC
RL-025 - 2-7/8"h x 22-1/2"w
P/N 09-44061 (B/W)
$16.95 ea.

VELOCITY
VL-005 - 3"h x 13"w
P/N 09-44063 (Blk)
P/N 09-44064 (Wh)
$14.95 ea.

THE WACO AIRCRAFT CO.
WL-004 - 3-1/4"h x 15-1/4"w
P/N 09-44066
(Black, Gold, & Red)
$29.95 ea.

Barracuda
HB-017 - 2"h x 2-1/2"w
P/N 09-44069 (Blk)
$12.95 ea.

Coyote
HB-038 - 2-1/4"h x 12"w
(Wing Tip) 09-44072 (Blk),
$11.95 ea.

Diamond AIRCRAFT
HB-139 - 3-3/4"h x 19"w
P/N 09-44076 (Wh)
$14.95 ea.

InStar
HB-124 4- 1/2"h x 16-1/2"w
P/N 09-44077 (Blk)
P/N 09-44078 (Wh)
$19.95 ea.

Katana DA20
HB-126 - 8"h x 24-1/4"w
P/N 09-44079 (Blk)
P/N 09-44080 (Wh)
$25.95 ea.

KITFOX
HB-023 - 1"h x 4-1/4"w
P/N 09-44082 (Blk)
$8.95 ea.

LANCAIR IV
HB-027 - 2-1/2"h x 12"w
P/N 09-44084 (Blk)
$21.95 ea.

LANCAIR IV P
HB-102 - 2-1/2"h x 14-3/4"w
P/N 09-44087 (Blk)
P/N 09-44088 (Wh)
$12.95 ea.

LANCAIR ES
HB-046 - 3-1/8"h x 10-7/8"w
P/N 09-44089 (Blk)
$19.95 ea.

LANCAIR SUPER ES
HB-090 - 3-1/4"h x 12-1/2"w
P/N 09-44091 (Blk)
$12.95 ea.

quickie
HB-125 - 2-1/2"h x 8-1/2"w
P/N 09-44093 (Blk)
P/N 09-44094 (Wh)
$10.95 ea.

QUICKSILVER
HB-104 - 5-1/2"h x 28"w
P/N 09-44097 (Multi-color)
$29.95 ea.

RANS S7
HB-057 - 3-1/4"h x 25-1/4"w
P/N 09-44101 (Blk)
$14.95 ea.

RANS S10
HB-057 - 3-1/4"h x 25-1/4"w
P/N 09-44103 (Blk)
$13.95 ea.

RV-4
HB-098L&R- 5-1/4"h x 13"w
P/N 09-44106 (Blk)
P/N 09-44107 (Wh)
$25.90 /pr

RV-6
HB-097L&R - 5-1/4"h x 13"w
P/N 09-44108 (Blk)
P/N 09-44109 (Wh)
$25.95 ea.

RV-8
HB-096L&R - 5-1/4"h x 13"w
P/N 09-44111 (Blk)
P/N 09-44112 (Wh)
$12.95 ea.

Starlet
HB-015 - 3"h x 6-1/2"w
P/N 09-44113 (Blk)
$11.95 ea.

Wag-A-bond
HB-016 - 2"h x 12"w
P/N 09-44116 (Blk)
$11.95 ea.

Wheeler
HB-035 - 1-1/4"h x 6-7/8"w
P/N 09-44118 (Blk)
$9.95 ea.

ZENAIR
HB-065 - 1-1/4"h x 8-1/2"w
P/N 09-44121 (Blk)
P/N 09-44122 (Wh)
$9.95 ea.

ROBERTSON/STOL
MS-070 - 2-1/2"h x 20"w
P/N 09-44126 (Blk)
$12.95 ea.

MS-050 - 3-1/2"h x3-1/2"w
09-44128 (Blk)
$13.95 ea.

MS-061 - 3"h x 3-1/2"w
P/N 09-44131
White lettering on red.
$10.95 ea.

ASM
MS-061 - 3"h x 3-1/2"w
P/N 09-44133 (Rd)
P/N 09-44134 (Wh)
$10.00 ea.

CS

LOGO DECALS

AC-001 - 7"h x 8"w
P/N 09-01967
White, Blue, & Yellow
$9.90 ea

AC-002 - 7"h x 8"w
P/N 09-43221
White, Red, & Black
$9.95 ea

CHAMP
AL-007 - 1"h x 8-1/8"w
$10.95 ea
P/N 09-43922 (Blk), 09-43923 (Wh), 09-43926 (Silver)

Sundowner
BE-021- 1/2"h x 12"w
$11.95 ea
P/N 09-43927 (Blk), 09-43928 (Wh)

Sierra
BE-030- 4.75"h x14.5"w
$16.95 ea
P/N 09-43929 (Blk)

Decathlon
BL-065 - 2"hx10-7/8"w
$13.95 ea
P/N 09-43932 (Blk), 09-43933 (Wh)

DELTANCA SUPERVIKING
BE-005 - 1.5"h x 18"w
White Left & Right (pair)
P/N 09-43936 ..... $37.90
(Gold Wing Black type) Right side
P/N 09-43934 ..... $18.95 ea

8"h x 7-3/4"w
P/N 09-43939
(Black, Red, Blue)
$17.85 ea.
P/N 09-43940 (Black)
$11.95 ea

CL-089
2"h x 3-3/4"w
P/N 09-43941
(Full Color)
$11.95 ea

CL-225 - L & R
P/N 09-43942 (Blk)
P/N 09-43943 (Wh)
6"h x 10-1/2"w $19.95 /pr

CL-071 - L & R
P/N 09-43944 (Blk)
P/N 09-43945 (Wh)
6"h x 10-1/2"w $21.90 /pr

CL-071 - L & R
P/N 09-43946 (Blk)
P/N 09-43947 (Wh)
6"h x 10-1/2"w $21.90/pr

CL-257L & R
P/N 09-43948 (Blk)
P/N 09-43949 (Wh)
6"h x 10-1/2"w $21.50 /pr

CL-112L & R
P/N 09-43950 (Blk)
P/N 09-43951 (Wh)
6"h x 10-1/2"w $19.90 /pr

CL-340 - L & R
P/N 09-43952 (Blk)
P/N 09-43953 (Wh)
6"h x 10-1/2"w $21.90 pr.

CL-214 - L & R
P/N 09-43954 (Blk)
P/N 09-43955 (Wh)
6"h x 10-1/2"w $19.95 pr.

CL-487 - L & R
P/N 09-43956 (Blk)
6"h x 10-1/2"w $19.90 pr.

CL-032L & R
P/N 09-43958 (Blk)
P/N 09-43959 (Wh)
6"h x 10-1/2"w $19.95 pr.

CESSNA 150

CL-454 (Black, White or OPT.)
P/N 09-43960 (Blk)
P/N 09-43961 (Wh)
1"h x 27"w $19.95ea.

CESSNA 206

CL-164 (Black, White or OPT.)
P/N 09-43962 (Blk)
P/N 09-43963 (Wh)
1-1/2"h x 15-1/2"w $12.95 ea.

CESSNA 310

CL-297 (Black, White or OPT.)
P/N 09-43964 (Blk)
1-1/2"h x 10-1/4"w $13.95 ea.

CESSNA 340

CL-327 P/N 09-43966 (Blk/Wh)
P/N 09-43967 (Blk/Gd)
2"h x 3-3/4"w $13.95 ea.

SKYHAWK

CL-178 P/N 09-43968 (Black)
P/N 09-43969 (Silver)
1-1/8"h x 9"w $13.95 ea.

SKYHAWK II

CL-102 (Black, White or OPT.)
P/N 09-43972 (Blk), P/N 09-43973 (Wh)
1/3/4"h x 11-1/2"w $12.95 ea.
CL-485 (Black, White or OPT.)

Superhawk

P/N 09-43977 (Blk),
P/N 09-43978 (Wh)
4"h x 12.5"w $12.95 ea

AMERICAN FLAG DECALS

Sold In Pairs Only

STRAIGHT
P/N 09-429– –

SLANTED
P/N 09-430– –

WAVY
P/N 09-431– –

HGT.	STRAIGHT		SLANTED		WAVY	
	WIDTH	PRICE	WIDTH	PRICE	WIDTH	PRICE
4"	7.5"	$5.50	7-1/2"	$7.50	4"	$8.50
6"	10.5"	$9.50	10-3/4"	$13.50	6"	$11.50
8"	14"	$15.50	14-1/2"	$17.50	8"	$16.95
10"	17.5"	$21.50	18-1/4"	$25.95	10"	$25.95
12"	20.5"	$29.90	21-1/4"	$34.95	12"	$31.50

Please order by part number. Use basic part number at top of chart, and complete part number with height of decal. Example: Wavy flag, 8" high is P/N 09-43108. Prices per pair (left & Right).

STARS & BARS

STYLE 1

1943
Between 29 June and 14 August, the official national insignia incorporated white sidebars and an overall red surrounding.

P/N 09-432– –

STYLE 2

1943-1947
The red surround of the official insignia was quickly changed to a blue surround During its 4 years use this insignia appeared on more aircraft than all its predecessors combined.

P/N 09-433– –

STYLE 3

1947-Present
With the reorganization of the Defense Department and the creation of the USAF, red bars were added to the official national insignia. A variation of this insignia appears officially without the blue surround on F-15 aircraft.

P/N 09-434– –

STYLE 4A

1917, 1921-1941
Introduced prior to the American entry into World War I and officially adopted after the war.

P/N 09-436--

STYLE 6A

1942-1943
Some aircraft in the European and Mediterranean theaters unofficially incorporated a yellow surround in British style.

P/N 09-439--

PRICING

SIZE	Style 1	Style 2	Style 3	Style 4A	Style 6A
10"	$65.00	$45.50	$49.95	$36.50	$25.00
15"	$72.25	$52.50	$58.50	$42.50	$43.20
20"	$87.50	$62.50	$69.75	$52.50	$45.00
25"	$99.50	$74.50	$82.50	$64.50	$62.50
30"	$120.50	$93.50	$115.95	$83.50	$75.50
35"	$175.50	$149.50	$153.75	$129.50	$101.80

Please order by part no. Use basic part no. under each style number and complete part no. with size of decal. Example: Style 3 decal in 25" size is P/N 09-43425

CESSNA Piper

Size 2-1/2" x 15" Size 2-1/2" x 11"

Distinctive aircraft identification names, either stencils for painting or black vinyl lettering for easy press-on application.

Aircraft	Vinyl		Stencils	
	Part No.	Price/Set	Part No.	Price/Set
Cessna	09-33800	$8.50	09-33900	$10.95
Piper	09-34000	$8.50	09-34100	$8.50

PROPELLER DECALS

Sold In Pairs Only

09-42830.....$5.95 pr.

09-42832.....$5.95 pr.

09-42834.....$5.95 pr.

09-42836.....$5.95 pr.

Black
09-42838.....$5.95 pr.
White
09-02986.....$5.95 pr.

09-42840.....$5.95 pr.

U.S. FLAG DECALS

Proudly display the Red, White, & Blue. Colorful vinyl pressure-sensitive U.S. Flag decals in right & left hand pattern.

2.5" x 4"..... P/N 13-01485.....$5.95
4" x 6.5"..... P/N 09-35400.....$7.85
6" x 10.5"..... P/N 09-35500..... $11.95

AIRCRAFT SPRUCE LOGO DECALS

These royal blue on white self-adhesive oval shaped decals of the Aircraft Spruce & Specialty Company logo look great on your airplane, bumper, reference books, etc. Available in 3 sizes.

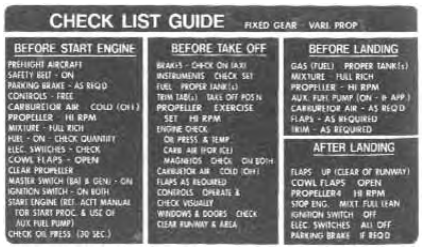
4" wide..... P/N 09-40400..... FREE
8" wide..... P/N 09-40410..... FREE
18" wide..... P/N 09-40420..... FREE

AIRCRAFT SPRUCE PATCH

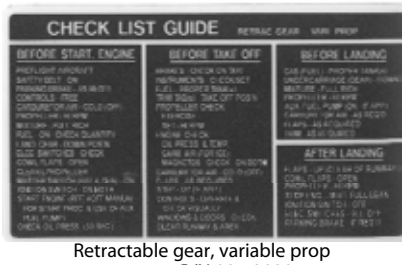
This is an embroidered patch, oval in shape, and approximately 3-1/2", colors are Red/White/Blue. ..... P/N 13-02703..... $3.50

CHECKLIST PLACARDS

Fixed gear, Fixed prop
P/N 09-42816.....$3.75



Fixed gear, Variable prop
P/N 09-42818 ..... $3.95



Retractable gear, variable prop
P/N 09-42820.....$3.95

Flight Plan Sequence
09-42822.....$3.35

VFR minimums
09-42824.....$3.75

Emergency
09-42826..... $2.75

Transponder Codes
09-42828.....$2.50

INSTRUCTIONAL USE ONLY PLACARD – Used on Part 103 exempted 2-seat ultralights. Available in pre-spaced vinyl lettering in your choice of colors. Size 3" x 10"

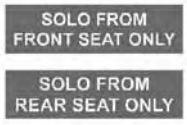
Vinyl Lettering ..... P/N 09-43901 .....$2.50

HOT EXHAUST – Black & red on white decal. Measures 1.5"x 4". A must where muffler can can be accidentally touched or brushed up against during aircraft servicing or entry.

P/N 09-43902.....$3.65

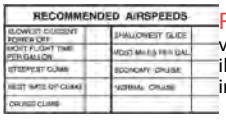
OPEN ARROWS – Custom computer cut decals to indicate operation of door handles. Specify arrow CW or arrow CCW. Arrow and "OPEN" can be separated and individually positioned. Color: Red. Call for quote on custom size and colors. Standard size: 2"x 3-1/2".

Open Clockwise ..... P/N 09-43903 .....$3.65
Open Counter clockwise..... P/N 09-43904 .....$3.65
Custom Color .....add $1.00
Close Clockwise..... P/N 09-03866 .....$3.65



SOLO SEATING PLACARDS – Silkscreened in red ink on white all weather vinyl. Placards for solo from front or reat seat (specify). Size: 1"x 3".

Front Seat Solo ..... P/N 09-43906 .....$2.35
Rear Seat Solo ..... P/N 09-43907 .....$2.50



RECOMMENDED AIRSPEEDS – Black on white vinyl. May be written on with a fine point indelible marker. Provides space for all your most important airspeeds. Size: 3.5" x 4.5

P/N 09-43908 .....$2.65

WINDOW PLACARD – Black on white vinyl. Specify left arrow or right arrow. Size: 3/4" x 3".

Left ..... P/N 09-43909 .....$1.95
Right..... P/N 09-43911 .....$1.95

STATIC AIR – Black on white vinyl. U-V coated, fuel resistant. Used to mark location of static air ents. Size: 3/4" x 1".

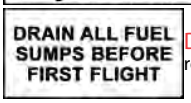
P/N 09-43912.....$1.95

CANOPY RELEASE – Black on white vinyl. Marks location of emergency release mechanisms for doors or canopies. Size: 7/8" x 3-1/8".

Canopy ..... P/N 09-43913 .....$2.65
Door..... P/N 09-43914 .....$2.65

OIL INJECTION PLACARD – Black on white vinyl. Used on oil injected Two- Stroke engines. U-V and Fuel resistant. Size: 1" x 2-1/3".

P/N 09-43916 .....$1.95



DRAIN SUMPS – Black on white vinyl. U-V and Fuel resistant. Size: 1" x 2".

P/N 09-00348 .....$4.50

FUEL DRAIN LOCATOR – Black on white vinyl. Used to locate fuel drain petcocks on aircraft. U-V & Fuel resistant. Size: 1/2" x 2".

P/N 09-43917.....$1.95

FIRE EXTINGUISHER – Black & Red on white vinyl. Used to locate extinguisher in emergency. Size: 2"x 3.5"

P/N 09-43918 .....$3.65

BALLISTIC CHUTE – Black & red on white vinyl. Used to locate Ballistic Chute Handle in emergency. Size: 2" x 3.5".

P/N 09-43919 .....$3.65

NO STEP DECAL - No Step, 1"x5" Decal-black letters

P/N 1040 .....$2.25

NO LIFT DECAL - No Lift Decal. Color: Black on White. Size: 1/2" x 2-1/2"

P/N 104212 .....$1.35

CS

DECALS - PLACARDS

FUEL PLACARDS

09-42803
$4.75 ea.

09-42802
$4.50 ea.

80 Octane-half red/blue, round.
P/N 09-42804 ..... $4.85 ea.
100 Octane, Low Lead Only Blue
P/N 09-42806 ..... $4.50 ea.
100 Octane Only
P/N 09-42808 ..... $4.65 ea.

09-42801 ..... $8.95 pr.

USE 100/130 OCTANE FUEL ONLY
09-42810 ..... $4.50 ea.

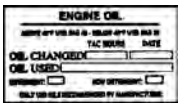
Yellow on Black. Size: 1-1/4"x5"
P/N 09-01141 ..... $3.65/pair

FUEL
80/87 MIN. GRADE
AVIATION GASOLINE
or
UNLEADED AUTO GASOLINE
87 MIN. ANTIKNOCK INDEX
PER ASTM SPEC D-439

09-42814 ..... $4.50 ea

PLACARDS

1-1/4" x 5-1/4"
09-42812
$4.50 ea.



09-42809 $0.65 ea.
or 10 for $4.88

80 100 OCTANE ONLY
09-42604 $4.50ea

80/87 OCTANE ONLY
09-42817 $4.50ea

100 OCTANE ONLY
09-42608 $4.50ea

JET FUEL ONLY
09-42821 $4.50ea

1-1/4" x 5-1/4"
09-42813
$4.50 ea.

1-1/2" x 2-1/4"
for Beechcraft
09-42811 $4.50 ea.

EXTERNAL POWER 12 VOLT DC
1-5/16" x 2-11/16"
09-42827 $2.50 ea.

EXTERNAL POWER 24 VOLT DC
1-5/16" x 2-11/16"
09-42829 $2.50 ea.

WARNING
ONLY THE PILOT OF THIS AIRCRAFT IS PERMITTED TO OPEN - CLOSE - LOCK THIS DOOR
09-42823 $2.50ea

FUEL OCTANE DECALS

MIN. FUEL OCT. 80/87

MIN. FUEL OCT. 100/130

Handsome vinyl placards have brilliant red lettering on a white background. Simply remove paper backing and apply. Size: 1" x 2-7/8".
80/87 red on white..... P/N 09-33610..... $1.85 pr.
100/130 green on white..... P/N 09-33615..... $1.85 pr.
100/130 red on white..... P/N 09-33700..... $1.85 pr.
100/130 red on white..... P/N 09-33710..... $1.85 pr.

GEAR DOWN BEFORE LANDING DECAL

Gear up landing incidents still occur everyday day in all categories of aviation. The most important item on a retractable airplane's before landing checklist may be the "GEAR DOWN BEFORE LANDING" item.
By placing this simple, non adhesive transparent "GEAR DOWN" decal within view of the pilot, you can insure a higher level of awareness and safety during your approach and landing phase of flight. 4-3/4" x 1-3/4". Color: Red & Black print on clear. P/N 13-12967 ..... $8.95

AVGAS ONLY PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00037 ..... $2.70

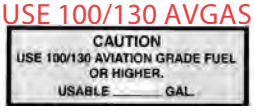
CAUTION USE 80/87 AVGAS PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00034 ..... $2.95

CAUTION USE 100LL AVGAS PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00038 ..... $2.95

CAUTION USE 100/130 AVGAS PLACARD



Measures 1.25" x 3.75" ..... P/N 14-00033 ..... $2.95

AIRCRAFT STC UNLEADED AUTO FUEL PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00032 ..... $2.95

JET FUEL ONLY PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00036 ..... $2.95

CAUTION DO NOT FILL AUX TANK PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00706 ..... $2.99

NO SMOKING PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00039 ..... $2.95

ZERO FUEL WEIGHT PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00704 ..... $2.70

WARNING ONLY THE PILOT PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00705 ..... $2.95

FASTEN SEATBELT PLACARD

Measures 1.25" x 3.75" ..... P/N 14-00040 ..... $2.70

SPINS PROHIBITED

Measures 1" x 3" ..... P/N 15-06666 ..... $1.67

CS

DECALS - PLACARDS

NAMEPLATE

All amateur-built aircraft must have a nameplate. Etch or stamp required data on this indestructible stainless steel nameplate. Conforms to FAA requirements. Size: 3"x 4-1/4". Engraving is not included or offered.

P/N 09-01997.....$8.75ea

STAINLESS STEEL ID TAG

Suitable for all aircraft. Made of .015 acid-etched stainless steel. Size: 3"x 2".

P/N 09-00761 .....$3.35ea

EXPERIMENTAL — Single-piece decal with adhesive back. No need to line up 12 individual letters. One-step operation. Just remove protective backing and apply to any clean surface. 2" black letters on clear Mylar base. Decal Size: 2-1/4" x 19".

Set of 2.....P/N 09-33400.....$4.95

LIGHT-SPORT — LIGHT-SPORT DECALS - Similar to our EXPERIMENTAL Decals, complies with marking requirements for LSA. Available in: 2"x14-1/4"

Black on Clear.....P/N 09-00762.....$2.25
Black on White.....P/N 09-00782.....$2.25
White on Clear.....P/N 09-00783.....$2.25

NO STEP — Bright red on white vinyl. Letters are 1" high. Decal size: 1-3/8" x 4-3/8".

P/N 09-33500.....$1.25ea

NO STEP — 1"x5" Decal-black letters.

P/N 1040.....$2.25

PANEL MARKING SETS

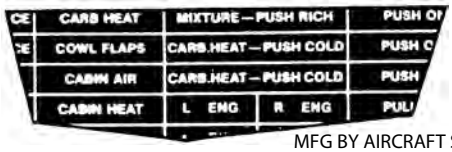
ACTUAL TYPE SIZES:

THROTTLE

THROTTLE

DRY TRANSFER TYPE – Over 200 pressure sensitive labels and words conveniently grouped for ease of transfer to airplane controls or instrument panel. Available in two type sizes (see illustration) and in black or white lettering (specify).

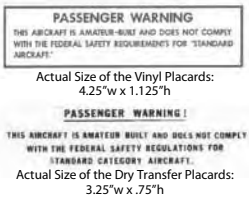
Large Black..... P/N 09-34600 Large White ..... P/N 09-34700
Small Black..... P/N 09-34800 Small White..... P/N 09-34900
$9.75 Set



MFG BY AIRCRAFT SPRUCE

SELF-ADHESIVE VINYL TYPE – White lettering on black background. Just cut, peel and press in place. Includes 349 of the most commonly used cockpit identifications and symbols (avionics, electrical, engine and aircraft controls) plus 248 numbers & letters. The most complete selection available. P/N 09-35000.....$4.75 Set

HOMEBUILDERS TYPE – Self-adhesive vinyl markings for the Long-EZ but applicable to many other aircraft. P/N 01-37800.....$2.85 Set



Actual Size of the Vinyl Placards: 4.25"w x 1.125"h

Actual Size of the Dry Transfer Placards: 3.25"w x .75"h

PASSENGER WARNING PLACARDS

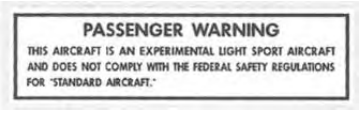
These Passenger Warnings must be displayed in the cockpit of all amature-built aircrafts.

The dry transfer passenger warning placards available in black, & white lettering. Simply remove the protective backing and rub on the desired area.

The vinyl placard has brilliant red lettering on a white background. Simply remove the paper backing and apply.

Lettering	Background	Type	Part No.	Price
Red	White	Vinyl Placard	09-33300	$1.95
Black	Clear	Dry Transfer Placard	09-33310	$1.85
White	Clear	Dry Transfer Placard	09-33320	$2.04

PASSENGER WARNING DECALS



E-LSA- Red & White
P/N 09-01966.....$1.95

S-SLA - Red & White
P/N 09-01968.....$1.95

AIRCRAFT IDENTIFICATION DATA PLATES

FACTORY BUILT - Aircraft ID plate factory built made of aluminum. Not FAA Approved. Engraving included. When ordering please provide: Make, Model, S/N, N# for factory built aircraft only.

P/N 09-00447.....$13.95

EXPERIMENTAL ONLY - Aircraft ID plate factory built made of aluminum. Not FAA Approved. Engraving included. When ordering please provide: Make, Model, S/N, N# for factory built aircraft only.

P/N 09-40000.....$13.95

SOFT ALUMINUM DECALS

P/N 09-34200

P/N 09-34300

P/N 09-34400

P/N 09-34500

Soft Aluminum Decals Letters are 1-1/4"H X 3-3/4"L with black lettering. $4.50 ea.

DECAL AEROBATICS PROHIBITED

Decal All Aerobatic Maneuvers Including Spins Prohibited.
P/N CPAAMP.....$1.50

CS

PLACARDS – STENCILS – VINYL LETTERS

PLACARDS

Color for placards below are white on black.

5/8"x 3-1/4"...P/N 09-42842
1"x 5".....P/N 09-42844.....$2.50 ea

1"x 5".....P/N 09-42850
5/8"x 3-1/4".....P/N 09-42848.....$2.50ea

1"x 3"...09-42858....$1.95

1"x 3"...09-42852....$1.95

1"x 3"...09-42854...$1.95

1"x 5".....09-42856 ..... $2.50ea

1"x 3".....09-42860 .....$1.95ea

1"x 4"..... 09-42846 .....$2.50ea

All the placards & decals on this page are produced on long lasting UV coated pressure sensitive adhesive vinyl. They are computer cut using no clear background so they won't yellow. These are all top quality decals which will enhance your aircrafts looks for years to come. Do not settle for "cheap" imitations.

12-INCH STENCIL NUMBER STRIP

Highly recommended as the easiest and most effective way to apply painted 12" stenciled "N" numbers on any aircraft. These come pre-spaced and aligned horizontally or vertically and assure a professional looking job. Shipped factory-direct to you within 48 hours. Provide exact "N" number when ordering. Special order - Non-returnable. Please specify horizontal or vertical. 6 Characters on each strip or less. Made of Vinyl.

12" Strip (straight) (right/left)..... P/N 09-00287 ..... $56.95 set
12" Strip (slanted) (right/left) ..... P/N 09-00288 ..... $56.95 set

3-INCH STENCIL STRIP

Vertical or horizontal lettering individually spaced and aligned. Advise number. Stencils will be made-to-order and shipped in about two weeks.

Straight Set of 2 (Right/Left)..... P/N 09-00289 ..... $13.50 set
Slanted Set of 2 (Right/Left) ..... P/N 09-00290 ..... $13.50 set

CS

INDIVIDUAL FIGURE STENCILS

N4804K N2510T N6979N
N425WT N100MD N51ER

Precut sticky paper masks for spraying registration numbers. Used by Piper and other aircraft manufacturers. Order two of each character for vertical stencils. Slanted stencils are furnished in pairs (R/L), so order one pair of each character. Order by part number. For last digit, put in number or letter needed.

3 Inch Vertical Figures..... P/N 09-3280x..... $1.25 Ea
3 Inch Slanted Figures ..... P/N 09-0672X ..... $1.25 Ea.
12 Inch Vertical Figures ..... P/N 09-3290x..... $6.25 Ea
12 Inch Slanted Figures..... P/N 09-3300x..... $13.50 Pr

Note: Full N number strips are available. Individual Numbers and letters will not align isometrically. Vinyl strip or stencil strip is recommended.

Painting Options: These stencils offer you two methods of spraying lettering incorporated in a single stencil.

You can: (1) Letter after the body color has been applied or
(2) Letter before the body color has been painted. This second method provides recessed, protected lettering and eliminates masking.

LETTERING & NUMBERS

For any use. Available in over 40 type styles. Most colors available.

Cap Size(In.)	In Stock Colors	Slanted or Reversed	Reflective & Metallic
3/4	.40	.45	N/A
1	.75	.80	.80
1-1/2	.75	.80	.80
2	1.00	1.05	1.05
2-1/2	1.00	1.05	1.05
3	1.35	1.40	1.40
4	1.35	1.40	1.40
4-1/2	1.50	1.55	1.55
5	1.50	1.55	1.55
6	1.80	1.85	1.85
7	2.25	2.30	2.30
8	2.50	3.00	3.00
9	4.00	4.50	4.50
10	5.00	5.50	5.50
12*	6.75	7.05	7.05

*Numbers excluded

12-INCH VINYL N NUMBER STRIP

The fastest and easiest way to apply registration numbers. These numbers come pre-spaced and aligned and are ready to apply in one simple operation. These are top quality numbers which are shipped factory direct to you. Provide exact "N" number when ordering. 6 Characters max. on each) Color choices are black, white, red, blue, or gold. Standard type style is helvetica. Military block, drop shadow, or outline styles are also available. Please specify your N number, color, orientation, and print style in the special instructions of the online order form. Colors Available: * Black * White * Tomato Red (Light Red) * Cardinal Red (Dark Red) * Olympic Blue (Sky Blue) * Bright Blue * Sapphire Blue * Light Navy * Metallic Gold * Metallic Silver * Green * Brown

Note: Drop Shadow style is double the cost due to it being two colors.

Straight 12" Strip (6 Characters max. on each)
P/N 09-41910 .....$56.95 pair.

Slanted 12" Strip (6 Characters max. on each)
P/N 09-41922.....$56.95 pair.

Slanted 12" Drop Shadow Strip (6 characters max. on each)
P/N 09-03434.....$112.95 pair

12-INCH INDIVIDUAL VINYL NUMBERS

We now offer new 12" vinyl "N" numbers as now required for return flight to the U.S. from foreign countries. Available in black, gold, red, white or blue. Numbers are slightly slanted. Basic part number is 09-387xx. Second to last digit is for color. 1 – Black, 6 – Gold, 7 – Red, 8 – White, 9 –Blue. For last digit, put in number or letter needed.

Note: Full N number strips are available. Individual numbers and letters will not align isometrically. Vinyl strip or stencil strip is recommended.

Please Note: N-Numbers ship via priorty mail only to all U.S. domestic customers.

See our website for a complete listing of Part Numbers

Slanted 12" Individual #'s.....$10.25 / pair

3-INCH VINYL INDIVIDUAL NUMBERS & LETTERS

Individual vertical numbers and letters. Pressure sensitive vinyl for easy application. Black only. No slanted numbers available. Basic part no. is 09-3310x. For last digit, put in number or letter needed.$1.25 ea.

Helvetica Straight.....$4.50/letter Helvetica Slanted.....$5.25/letter
Monument Block.....$9.00/ letter Monument Block Slant .....$9.00/ letter

Note: Full N number strips are available. Individual numbers and letters will not align isometrically. Vinyl strip or stencil strip is recommended.

3" VINYL NUMBER STRIP

"N" Number Strips assure handsome registration numbering in minutes. Complete made-to-order 3" registration number on adhesive application strip individually spaced and aligned (NOT A FILM). Lay strip on aircraft and remove backing. Permanent number remains bonded to aircraft. A real time saver. Will outlast paint - look better. Available in black, white or gold. Vertical or horizontal lettering. Specify vertical or horizontal lettering and color. Colors Available: * Black * White * Tomato Red (Light Red) * Cardinal Red (Dark Red) * Olympic Blue (Sky Blue) * Bright Blue * Sapphire Blue * Light Navy * Metallic Gold * Metallic Silver * Green * Brown

***Delivery by UPS only**

3"Straight .....Right & Left.....P/N 09-00294 ..... $17.25 set
3"Slanted .....Right & Left.....P/N 09-00302 ..... $14.95 set

Letter styles available for your aircraft. 3" and 12" vinyl strips.

CARDBOARD DIE-CUT ONE-PIECE STENCILS

	Size	Part No.	Price Each
EXPERIMENTAL	2"H x 18"L	09-32400	$5.95
NO STEP	2"H x 4-3/4"L	09-32500	$4.65
NO PUSH	1"H x 4-3/4"L	09-32600	$2.25
NO STEP	1"H x 4-3/4"L	09-32700	$2.45

TRACE-IT STENCIL SETS

Allows for stenciling of every letter and number. NOTE: Illustration is portrayal of item you actually receive - each kit contains 3", 12" and 24" sizes.

P/N 09-42831 .....$43.75

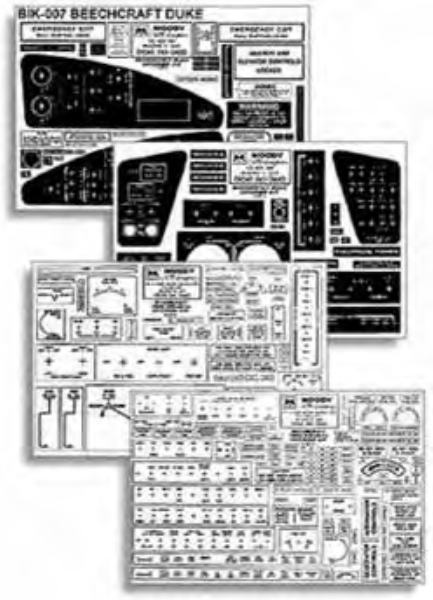
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRCRAFT PLACARD KITS

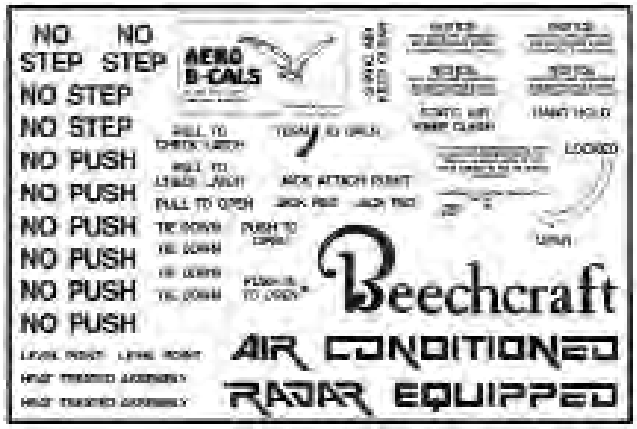
INTERIOR PLACARD KITS

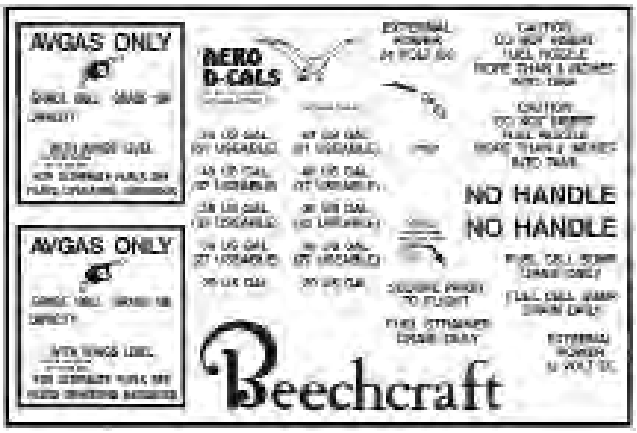


These quality decal sets are designed to provide all the necessary placards for the interior of various production and homebuilt aircraft. Just cut the decals you want to use from the card and apply to the aircraft interior.

DESCRIPTION	P/N	PRICE
AVIONICS	09-00981	$13.75
BEECHCRAFT		
MUSKATEER 19, 23	13-03954	$56.25
24, 24R, SIERRA	13-03950	$56.25
33, 35, 36 SERIES	13-03951	$104.95
TWIN BONANZA	13-03953	$104.95
BELLANCA		
CITABRIA/DECATHLON	13-03949	$54.25
CESSNA		
120/140/150/152	09-44055	$48.50
170/172/175	09-44060	$48.50
177/177RG	13-03955	$54.75
180/182/185	13-03956	$49.95
190/195	09-01158	$50.00
205/206/207	09-01963	$80.75
210/210T	09-01010	$79.25
310 H-M	09-01084	$135.95
310 P-Q	09-01160	$113.95
310 -D	09-01162	$113.95
336/337	09-01191	$23.65
ERCOUPE	09-01165	$84.50
GROB		
SEAPLANE	09-01021	$41.70
GRUMMAN		
AA1/AA1A	09-01168	$41.75
AA5/AA5A, AA5B	09-01170	$58.75
COUGAR	09-01171	$133.95
BARON	13-03952	$125.00
PIPER		
PA-18 SUPER CUB	09-01176	$32.95
PA-23 AZTEC SERIES	09-01184	$82.25
PA-24 COMANCHE	09-01181	$54.25
PA-28 140-181 CHEROKEE	09-01179	$53.95
PA-28 235-236	09-01180	$53.95
PA-28 R ARROW SERIES	09-00441	$54.25
PA-30 TWIN COMANCHE	09-01183	$69.95
PA-32 CHEROKEE-LANCE	09-01182	$54.25
SARATOGA		
PA-38 112 TOMAHAWK	09-01178	$28.95
PA-44 SEMINOLE SERIES	09-01186	$79.25
TRI-PACER	09-01177	$29.50
WESTWIND	09-01046	$208.95
UNIVERSAL INTERIOR	09-01197	$8.95

EXTERIOR PLACARD KITS





Aircraft Model	P/N	Price
Helicopter (Universal)	09-44201	$37.50
Single Engine (Universal)	09-44202	$37.50
Mooney M20/21	09-44203	$49.95
Piper PA28 Cher/Warrior/Archer II	09-44204	$39.75
Piper PA32 Cher/Lance/Saratoga	09-44206	$48.75
Piper PA32 Apache/Aztec	09-44207	$63.75
Piper PA34 Seneca I/II/III	09-44209	$62.75
Piper PA30/39 Twin Comanche	09-44211	$66.75
Piper PA31T/42T Cheyanne	09-44205	$131.95
Cessna 100/200	09-44213	$29.95
Cessna 300 Series	09-44210	$133.95
Cessna 400 Series	09-44220	$83.50
Cessna 425/441	09-44235	$112.00
Cessna Jet 500 Series	09-44245	$207.95
Beech Bonanza V35	09-44216	$96.85
Beech Baron 55/58	09-44251	$123.95
Beech Duke 60	09-44217	$133.95
Beech Queen Air 65/88	09-44218	$157.00
Beech King Air 200/300	09-44250	$159.00
Beech Jet 400 Series	09-44255	$238.75
Exterior Kit Beech King Air	09-01956	$154.95
Saber Jet 40/60	09-44219	$193.00
Hawker Jet 500	09-44280	$164.00
Westwind Jet 1100	09-44223	$209.00
Gulfstream 690-1000	09-44224	$244.95
Challenger Jet 600	09-44227	$169.00
Falcon Jet 10/20	09-44228	$139.95
Lear Jet 20 Series	09-44260	$165.00
Lear Jet 30 Series	09-44265	$198.95
Lear Jet 50 Series	09-44231	$165.00
Rockwell 112/114	09-44232	$53.85
Rockwell Gulf Stream 690	09-44233	$131.00

Die cut decal kits are available on request. Call for quotation.

CS

RC ALLEN 2600 DIGITAL ATTITUDE GYROS

RCA 2600-3

RCA 2600-2

We are pleased to introduce the latest version of the popular RCA2600 Series Digital Attitude Indicator. We have made several enhancements; most notably the new compact design - only 1.5 inches deep! Inside, we have added a faster processor and increased its resistance to high vibration.

The 3-inch RCA2600-3 and the 2-inch RCA2600-2 are designed to look and react like a gyro instrument without the clutter of extra data. The RCA2600 is FAA certified and is perfect for replacing your primary AI or adding as a backup in whatever you fly!

• Lightweight, compact design • High vibration resistant • Totally Self-Contained • Easy to install • Bright, Adjustable display • FAA Certified • Made in the USA

RCA2600-2 (2 Inch Gyro)..... P/N 11-07324.....$2,595.00
RCA2600-2 with 8° tilt..... P/N 11-09199.....$2,595.00
RCA2600-3 (3 Inch Gyro)..... P/N 11-07325.....$2,595.00
RCA2600-3 with 8° tilt..... P/N 11-08142.....$2,595.00
2600 Inclinometer Option..... P/N 10-03862.....$147.75

RC ALLEN ESP BATTERY BACKUP

A battery-based emergency power unit designed to give you at least an hour of auxiliary power when you need it the most. Paired with the new RCA 2600 Digital Horizon, the ESP can provide up to 6 hours of backup power. The ESP can be easily mounted behind the instrument panel and can power your new R.C. Allen instrument, or retrofit your existing Attitude gyro in an emergency. Comes complete with a wire harness and panel-mounted status light. Recharges itself during flight and does not drain the aircraft battery when aircraft power is off.FAA TSO-C179

14V..... P/N 10-04171.....$650.00
28V..... P/N 10-04525.....$685.00

RC ALLEN DIRECTIONAL GYROS (ELECTRIC)

Pictured is RCA15AK-1

The RCA15 Series electric directional gyro employs and electrically driven gyro motor and is a direct reading, azimuth indicator. Rotor run up time is 3 min. They have a built in inverter which converts aircraft DC power to the required AC voltage and frequency. May be used in both fixed wing and rotor wing aircraft and is easily installed in standard 3 1/8" panel cut out. Power failure flag drops into view when supply voltage is lost or has dropped below a level for proper operation of the gyro. Azimuth indication range 360°. Altitude operation -1,000 to 40,000 feet. Internal 3 phase inverter prodeces high starting torque and increases gyro roto speed. Internal lighting provides even light distribution at any intensity level. calibrated to an accuracy of 3° maximum drift error after 10 minutes of ±1.5° scorsby motion.

Electrical Requirements:
Starting Current @ 14 VDC: 2.4A Max
Running Current @ 14 VDC: 1.2A
Starting Current @ 28 VDC:; 1.4A Max
Running Current @28 VDC .6A
Reccomended Circuit Breaker 3A
Dimensions:Length: 6.7" Width; 3.4" Height: 3.4" Weight; 2.3 pounds
Meets of exceeds all requirements of FAA TSO C5c and Aeronautical Standard AS397.

Model	Description	Part No.	Price
RCA15AK-1	14 VDC, Lighted	10-01681	$2,305.00
RCA15AK-2	14 VDC	10-01390	$2,197.00
RCA15BK-1	28 VDC, Lighted	10-01682	$2,297.00
RCA15BK-2	28 VDC	10-00501	$2,077.00
RCA15AK-16	14 Volt, 400HZ, 5K.	10-02530	$2,955.00
RCA15AK-17	14 Volt,Heading Bug only.	10-02529	$2,728.00
RCA15BK-16	28 Volt, 400HZ, 5K.	10-02533	$2,955.00
RCA15BK-17	28 Volt,Heading Bug only.	10-02532	$2,725.00
15BK-1	Factory Overhauled	10-05690	$1,080.00
Accessories			
MS3116E8-4S	4 Pin Connector	10-00791	$18.75
444-0011-0	Mini Slip Indicator - Add this to your new or current Electric Gyro Horizon. Replaces 444-0007-01.	10-04623	$147.50

RC ALLEN ATTITUDE GYROS (ELECTRIC)

The RCA26 Series is the top of the line and has been designed for precision and reliability. The RCS26EK Series is a 12-30VDC instrument. You have a choice of a fixed or moveable pointer, and a 14 or 28 volt lighting. Performance characteristics include roll indication of 360°. Pitch ± 30°. Pitch trim range ±7°. Slip Indicator can be added upon request. Mating connector (MS3116E8-4S) is also available. Pictured is the RCA26EK-11

Model No.	Description	Part No.	Price
RCA26EK-11	Fixed Pointer, unlit. 0 Degree Tilt	10-02524	$2,192.00
RCA26EK-11 8 Degree Tilt	Fixed Pointer, unlit. 8 Degree Tilt	10-05004	$2,195.00
RCA26EK-11 Custom Tilt	Fixed Pointer, unlit. Specify Tilt	10-04984	$2,195.00
RCA26EK-12	Fixed Pointer, lighted. 0 Degree Tilt	10-02526	$2,295.00
RCA26EK-12 8 Degree Tilt	Fixed Pointer, lighted. 8 Degree Tilt	10-05005	$2,295.00
RCA26EK-12 Custom Tilt	Fixed Pointer, lighted. Specify Tilt	10-04985	$2,295.00
RCA26EK-13	Moveable pointer, unlit. 0 Degree Tilt	10-02527	$2,192.00
RCA26EK-13 8 Degree Tilt	Moveable pointer unlit. 8 Degree Tilt	10-05006	$2,192.00
RCA26EK-13 Custom Tilt	Moveable pointer unlit. Specify Tilt	10-04986	$2,195.00
RCA26EK-14	Moveable pointer, lighted. Voltage and tilt must be specified at time of order.	10-02528	$2,295.00
RCA26AK-1	Standard look, 14V, Lighted, Moveable pointer, Stationary roll dial. 0 degree tilt.	10-00608	$2,295.00
RCA26AK-1 8 Degree Tilt	Standard look, 14V, Lighted, Moveable pointer, Stationary roll dial. 8 degree tilt.	10-05002	$2,295.00
RCA26AK-1 Custom Tilt	Standard look, 14V, Lighted, Moveable pointer, Stationary roll dial. Specify tilt.	10-04989	$2,295.00
RCA26AK-2	Standard look, 14V, Lighted, fixed pointer, moveable roll dial. 0 Degree Tilt	10-01683	$2,295.00
RCA26AK-2 8 Degree Tilt	Standard look, 14V, Lighted, fixed pointer, moveable roll dial. 8 Degree Tilt	10-00392	$2,295.00
RCA26AK-2 Custom Tilt	Standard look, 14V, Lighted, fixed pointer, moveable roll dial. Specify Tilt	10-04990	$2,295.00
RCA26AK-3	Standard look, 14V, Moveable pointer, sationary roll dial. 0 Degree Tilt.	10-01118	$2,195.00
RCA26AK-3 8 Degree Tilt	Standard look, 14V, Moveable pointer, sationary roll dial. 8 Degree Tilt.	10-05003	$2,195.00
RCA26AK-3 Custom Tilt	Standard look, 14V, Moveable pointer, sationary roll dial. Specify Tilt.	10-04991	$2,195.00
RCA26AK-4	Standard look, 14V, Fixed Pointer, Moveable roll dial.	10-01392	$2,192.00
RCA26AK-4-8	Standard look, 8° Tilt, 14V, Fixed Pointer, Moveable roll dial.	10-00391	$2,192.00
RCA26BK-2	Standard look, 28V, Lighted, Moveable pointer, Stationary Roll Dial.	10-01119	$2,184.00
RCA26BK-6	Standard look, 28V, Fixed Pointer, Moveable Roll Dial.	10-01393	$2,192.00
RCA26BK-8	Standard look, 28V, Moveable pointer, Stationary Roll Dial.	10-01120	$2,195.00
RCA26BK-9	Standard look, 28V, Lighted, Fixed pointer, Moveable Roll Dial.	10-00466	$2,295.00
RCA26BK-12	5° Tilt, 28V, Lighted, Moveable pointer, fixed roll dial	10-01122	$2,295.00
26BK-9	Factory Overhauled	10-05685	$1075.00
26BK-2	Factory Overhauled	10-05686	$1075.00
26AK-4	Factory Overhauled	10-05687	$1075.00
MS3116E8-4S	4 Pin Connector MS3116E8-4S	10-00791	$18.75
444-0011-01	A slip indicator/inclinometer for all the RCA26 series & RC Allen vacuum horizons	10-04623	$147.50

CORE CHARGES APPLY TO OVERHAULED GYROS.

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CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

RC ALLEN VACUUM HORIZON GYRO

The RCA22 Series of vacuum artificial horizon are controlled by air driven precision gyros to present the pilot with pitch and roll information. The attractive color scheme of blue sky and brown ground presents a realistic spherical display of flight. Unless otherwise indicated all instruments have a dark blue/brown display, fixed pointer and are unlighted. This is the "standard" display. Instruments equipped with a warning flag will let you know when vacuum has dropped below 3.8 inch Hg. Flag retracts from view at 4.3 inch. Hg. Instrument fits in a standard 3 1/8" panel cutout. Meets of exceeds all requirements of FAA TSO C4c and Aeronautical Standard AS396B.

Model No.	Description	Part No.	Price
RCA22-7	Standard display, 0 Degree Tilt	10-01371	$819.00
RCA22-7 8 Degree Tilt	Standard Display,8 Degree Tilt.	11-03607	$819.00
RCA22-7 Custom Tilt	Standard Display, Specify Tilt.	11-11150	$829.00
RCA22-7F	Standard Display with a warning flag. 0 Degree Tilt	10-00504	$938.00
RCA22-7F 8 Degree Tilt	Standard Display with a warning flag. 8 Degree Tilt	10-04998	$939.00
RCA22-7F Custom Tilt	Standard Display with a warning flag. Specify Tilt	10-04996	$939.00
RCA22-11	Standard display, lighted 14V, 0 Degree Tilt.	10-00502	$935.00
RCA22-11 8 Degree Tilt	Standard display, lighted 14V, 8 Degree Tilt.	10-04994	$939.00
RCA22-11 Custom Tilt	Standard display, lighted 14V, Custom Tilt.	10-04995	$939.00
RCA22-11	Standard display, lighted 28V, 0 Degree Tilt	10-01391	$938.00
RCA22-11 8 Degree Tilt	Standard display, lighted 28V, 8 Degree tilt	10-03635	$938.00
RCA22-11 CustomTilt	Standard display, lighted 28V, Custom Tilt	10-05011	$939.00
RCA22-11F	Standard display, lighted, with a warning flag. (14V) 0 Degree Tilt	10-00094	$1,059.00
RCA22-11F 8 Degree Tilt	Standard display, lighted, with a warning flag. (14V) 8 Degree Tilt	10-05010	$1,059.00
RCA22-11F Custom Tilt	Standard display, lighted, with a warning flag. (14V) Custom Tilt	10-04993	$1,049.00
RCA22-11F	Standard display, lighted, with a warning flag. (28V). 0 Degree Tilt.	10-03574	$1,059.00
RCA22-11F 8 Degree Tilt	Standard display, lighted, with a warning flag. (28V). 8 Degree Tilt.	10-05008	$1,059.00
RCA22-11F Custom Tilt	Standard display, lighted, with a warning flag. (28V). Custom Tilt.	10-05009	$1,059.00
RCA22-15	Display is blue over black 0 Degree Tilt.	10-01109	$819.00
RCA22-15 8 Degree Tilt	Display is blue over black 8 Degree Tilt.	10-05007	$829.00
RCA22-15 Custom Tilt	Display is blue over black Custom Tilt.	10-04997	$829.00
RCA22-7 Overhauled	Overhauled RCA22-7 Horizon Gyro	10-05439	$495.00

RC ALLEN DIRECTIONAL GYROS VERTICAL CARD (VACUUM)

RCA11A-8

RCA11A-15

The RCA-11A series of vacuum directional gyros utilize and air driven precision gyro that controls a vertical rotating azimuth gimbal. The R.C. Allen Model RCA11A has been designed to provide a long life of accurate operation even when subjected to severe operating requirements. This instrument is engineered with a minimum of machined parts, providing lower initial cost and lower maintenance cost through its lifetime.

The RCA11A is non-tumbling within ±85° limits in pitch and roll and can be easily installed in any 3 1/8" panel cut out. Full freedom design allows accurate indication, even after extreme maneuvers. Stainless steel is used at wear points, with aluminum investment and die casting.

A knob is provided to reset the gyro, when compared to the magnetic compass. the RCA11A-8 features the "standard" display.

Meets of exceeds all requirements of FAA TSO C5c and Aeronautical Standard AS397.

Dimensions: Length: 6.7" Height: 3.4" Width: 3.4" Weight: 2.3 Pounds

Model No.	Description	Part No.	Price
RCA11A-8	Standard Display	10-01370	$819.00
RCA11A-8F	Standard Display with Flag	10-01680	$938.00
RCA11A-15	Cardinal Heading markers N., S., E., & W. (Piper/cessna display)	10-00390	$819.00
RCA11A-15F	Same as RCA11A-15 with flag	10-01116	$868.00
RCA11A-16B	Standard Display, Lighted, 14 Volt.	10-01369	$929.00
RCA11A-17B	Standard Display, Lighted, 28 Volt	10-01389	$796.00
RCA11D-4	Single Pointer, 400hz Autopilot with heading bug.	10-01117	$1,535.00
RCA11D-5	Dual Auto Pilot with Heading Bug	10-03430	$1,535.00
RCA11D-7	With Heading Bug Only	10-02931	$1,265.00
11A Series	Factory Overhauled 11A Series Gyro (Core Charges Apply)	10-05683	$495.00

SIGMA-TEK 5000B SERIES STANDARD ATTITUDE GYROS

The 5000B is an air-driven gyro that has a pictorial horizon mask and fixed airplane. The mask moves to indicate climb, dive, and bank. Bank and pitch attitudes are displayed so that the pilot's sensing of the gyro indication is the same as the interpretation of the relation between the wings of the aircraft and the natural horizon during visual flight.

This instrument is FAA certified, and can be used to replace the aircraft's turn coordinator when equipped with an inclinometer.

The Standard configuration can replace most air driven gyros with the major difference being in the layout and colors of the display.

NOTE: Lighted instruments do not include lamp trays, please see accessories to purchase separately.

Sigma-Tek	Model	Display Colors	Inclino-meter	Lighted	Panel Tilt	Part Number	Price
1U149-010	5000E-13	Blue/Black	No	Yes	0	10-04790	$1,399.00
1U149-010-1	5000B-37	Blue/Brown	No	Yes	0	10-01071	$1,218.00
1U149-010-4	5000B-54	Blue/Brown	No	Yes	8	10-04655	$1,392.00
1U149-010-5	5000B-64	Blue/Black	No	Yes	8	10-04660	$1,392.00
1U149-013-1	5000B-45	Blue/Brown	Yes	Yes	0	5000B-45	$1,555.00
1U149-013-3	5000B-53	Blue/Brown	Yes	Yes	8	5000B-53	$1,555.00
23-501-06-9	5000B-20	Blue/Black	No	No	0	10-00389	$1,159.00
23-501-06-12	500B-24	Blue/Black	No	No	8	10-04652	$1,151.00
23-501-06-16	5000B-36	Blue/Brown	No	No	0	5000B	$1,151.00
23-501-06-17	5000B-42	Blue/Brown	No	No	8	5000B-42	$1,151.00
23-501-033-3	5000B-46	Blue/Brown	Yes	No	0	5000B-46	$1,465.00
23-501-034-4	500B-51	Blue/Brown	Yes	No	8	5000B-51	$1,466.00

Accessories

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757 ..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758 ..... $67.75

SIGMA-TEK 5000B SERIES ATTITUDE GYROS WITH WARNING FLAG

This gyro is a variation of the popular 5000B air-driven attitude gyro. It includes a warning flag that drops into view upon the loss of vacuum. This can be a life saving feature during an emergency in a busy cockpit. The horizon mask moves to indicate climb, dive, and bank attitudes, which are portrayed against a fixed airplane. The fluid movements and intuitive presentation provide the pilot with a realistic sense of the aircraft's attitude in relation to the natural horizon.

This instrument is FAA certified, and can be used to replace the aircraft's turn coordinator when equipped with an inclinometer.

This configuration includes a "Warning Flag" that is visible immediately upon Loss of vacuum or pressure. It is a very valuable upgrade as a safety feature.

NOTE: Lighted instruments do not include lamp trays, please see accessories to order separately.

Sigma-Tek	Model	Display Colors	Inclino-meter	Lighted	Panel Tilt	Part Number	Price
23-501-031-1	5000B-38	Blue/Brown	No	No	0	10-02078	$1,444.00
1U149-012	5000B-40	Blue/Brown	No	Yes	0	10-00132	$1,426.00
23-501-032-2	5000B-43	Blue/Brown	No	No	8	10-04653	$1,444.00
1U149-012-2	5000B-52	Blue/Brown	No	Yes	8	10-04654	$1,650.00
23-501-041-1	5000B-60	Blue/Brown	Yes	No	0	10-04656	$1,643.00
23-501-042-2	5000B-61	Blue/Brown	Yes	No	8	10-04657	$1,643.00
1U149-016-7	5000B-62	Blue/Brown	Yes	Yes	0	10-04658	$1,699.00
1U149-016-8	5000B-63	Blue/Brown	Yes	Yes	8	10-04659	$1,666.00

Accessories

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757 ..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758 ..... $67.75

IN

SIGMA-TEK 5000E/L SERIES AUTOPILOT ATTITUDE GYROS

The 5000E air-driven attitude gyro is another variation of our standard 5000B model. It includes inductive pickoffs that generate the signals necessaryto drive an autopilot. The intuitive display has a moving horizon mask that indicates the position of the aircraft's wings in relation to the natural horizon. This attitude information is passed along to the autopilot system.

This is one of our most popular primary instruments. It is FAA approved, and can replace the turn coordinator when equipped with an inclinometer.

Many Sigma-Tek autopilot gyros are FAA PMA approved for use in ARC and Century CII, CIIB, CIII and CIV autopilot installations.

NOTE: Lighted instruments do not include lamp trays, please see accessories to purchase separately.

Sigma-Tek	Model	Display Colors	Autopilot Model	Auto-pilot Output	Light-ed	Panel Tilt	PMA	Part Number	Price
23-501-04-2	5000E-8	Blue/ Black	CFS 52D66	Roll	No	0	Yes	10-04892	$1,942.00
23-501-05-2	5000E-9	Blue/ Black	CFS 52D67	Pitch & Roll	No	0	Yes	10-04894	$2,449.00
1U149-006-1	5000E-10	Blue/ Black	CFS 52D66M	Roll	Yes	0	Yes	5000E-10	$2,073.00
1U149-007-1	5000E-11	Blue/ Black	CFS 52D67M	Pitch & Roll	Yes	0	Yes	5000E-11	$2,463.00
23-501-04-24	5000E-20	Blue/ Brown	CFS 52D66	Roll	No	0	Yes	10-04893	$1,946.00
23-501-05-25	5000E-21	Blue/ Brown	CDS 52D67	Pitch & Roll	No	0	Yes	10-04895	$2,435.00
1U149-006-8	5000E-22	Blue/ Brown	CFS 52D66M	Roll	Yes	0	Yes	10-04890	$2,159.00
1U149-007-9	5000E-23	Blue/ Brown	CFS 52D67M	Pitch & Roll	Yes	0	Yes	10-04891	$2,526.00

Accessories

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757 ..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758 ..... $67.75

SIGMA-TEK 5000M SERIES CAGEABLE ATTITUDE GYROS

The 5000M is an air-driven gyro that has a pictorial horizon mask and fixed airplane. The mask moves to indicate climb, dive, and bank. Bank and pitch attitudes are displayed so that the pilot's sensing of the gyro indication is the same as the interpretation of the relation between the wings of the aircraft and the natural horizon during visual flight. The instrument is provided with a caging system which is functional through 360° of roll and 90° of pitch. When caging is engaged, pitch and roll indices are aligned within two degrees. This instrument is FAA certified, and can be used to replace the aircraft's turn coordinator when equipped with an inclinometer. The caging feature is very useful for quick erection and display alignment; a high priority for occasional aerobatic maneuvers and operations with short stops.

NOTE: Lighted instruments do not include lamp trays, please see accessories to purchase separately.

Sigma-Tek	Model	Display Colors	Warning Flag	Caging	Inclino-meter	Light-ed	Panel Tilt	Part Number	Price
1U149-021-1	5000M	Blue/ Brown	No	Yes	No	Yes	0	10-02326	$1,816.00
23-501-035-5	5000M-1	Blue/ Brown	No	Yes	No	No	0	10-02327	$1,835.00
23-501-036-6	5000M-2	Blue/ Brown	No	Yes	No	No	8	10-02328	$1,764.00
23-501-037-7	5000M-3	Blue/ Brown	No	Yes	Yes	No	0	10-02329	$2,412.00
23-501-038-8	5000M-4	Blue/ Brown	No	Yes	Yes	No	8	10-02330	$2,299.00
1U149-022-2	5000M-5	Blue/ Brown	No	Yes	No	Yes	8	10-02331	$1,817.00
1U149-023-3	5000M-6	Blue/ Brown	No	Yes	Yes	Yes	0	10-02332	$2,310.00
1U149-024-4	5000M-7	Blue/ Brown	No	Yes	Yes	Yes	8	10-02333	$2,364.00
1U149-025-5	5000M-8	Blue/ Brown	Yes	Yes	Yes	Yes	0	10-04882	$2,484.00
1U149-026-6	5000M-9	Blue/ Brown	Yes	Yes	Yes	Yes	8	10-04883	$2,484.00
23-501-039-9	5000M-10	Blue/ Brown	Yes	Yes	Yes	No	0	10-04884	$2,149.00
23-501-040-10	5000M-11	Blue/ Brown	Yes	Yes	Yes	No	8	10-04885	$2,149.00
23-501-043-3	5000M-12	Blue/ Brown	Yes	Yes	No	No	0	10-04886	$2,051.00
23-501-044-4	5000M-13	Blue/ Brown	Yes	Yes	No	No	8	10-04887	$2,051.00
1U149-027-7	5000M-14	Blue/ Brown	Yes	Yes	No	Yes	0	10-04888	$2,158.00
1U149-028-8	5000M-15	Blue/ Brown	Yes	Yes	No	Yes	8	10-04889	$2,254.00

Accessories

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757 ..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758 ..... $67.75

SIGMA-TEK 5000EG ELECTRIC ATTITUDE GYROS

The 5000EG gyro is based on a air-driven 5000B model, whose proven reliability has made it the industry standard for many years. There are two models available: 14 and 28 VDC. The rotor is precisely machined from a heavy-metal tungsten alloy, which has a higher mass than brass, contributing to the instrument's demonstrated stability.

The electric motor is driven by a built-in power inverter, and has an integrated air-erection mechanism. A warning flag is deployed upon loss of primary power. During acrobatic flights or short stops, the gyro's mechanism can be caged whenever the knob is pulled.

This instrument is FAA certified, and can be used to replace the aircraft's turn coordinator when equipped with an inclinometer.

The electric gyro can replace most air driven gyros with the major difference being its electric power source and the layout and colors of the display.

NOTE: Lighted instruments do not include lamp trays or connector, please see accessories to purchase separately.

Model	Inclino-meter	Lighted	Panel Tilt	Volts	Part Number	Price
1U670-001-1	Yes	Yes	0	28	10-02748	$2,069.00
1U670-002-2	Yes	Yes	0	14	10-02749	$2,088.00
1U670-003-3	No	Yes	0	28	10-02750	$1,996.00
1U670-004-4	No	Yes	0	14	10-02751	$1,996.00
1U670-005-5	Yes	No	0	28	10-02752	$1,996.00
1U670-006-6	Yes	No	0	14	10-02754	$1,964.00
1U670-007-7	No	No	0	28	10-02753	$1,975.00
1U670-008-8	No	No	0	14	10-02755	$1,975.00
1U670-002-9	Yes	Yes	8	14	10-04903	$2,088.00
1U670-001-10	Yes	Yes	8	28	10-04896	$2,088.00
1U670-001-15	Yes	Yes	7-1/2	28	10-04897	$2,088.00
1U670-001-19	Yes	Yes	11	28	10-04898	$2,088.00
1U670-003-11	No	Yes	4	28	10-04899	$1,996.00
1U670-003-12	No	Yes	8	28	10-04901	$1,996.00
1U670-007-10	No	Yes	10	28	10-04902	$1,975.00

Accessories

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757 ..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758 ..... $67.75
Connector For Electric Attitude Gyro ..... P/N 10-05121 ..... $73.75

5000B-36

4000B-30

SIGMA-TEK FACTORY OVERHAULED GYROS

These units are factory-overhauled gyros that are like new and carry the same warranty as a new units. Provided installation is within 6 months of factory ship date, full replacement warrarnty is 12 months from date of installation.

Exchange core must be a like core* and the core must be returned no later than 20 days from the invoice date to receive core credit.

*Like cores include: any 4000B series Sigma Tek/EDO-Aire core as exchange for a 4000B-30 any 5000B series Sigma Tek/EDO-Aire core as exchange for a 5000B-36

*All lighted units must order light tray separately.

Description	Sigma-Tek Model No.	Our PN	Core	Price
Attitude Gyro	5000B-36	10-03360	$275.00	$572.00
Directional Gyro	4000B-30	10-03359	$275.00	$572.00

IN

SIGMA-TEK 4000B SERIES STANDARD DIRECTIONAL GYROS

The 4000B is a standard air-driven directional gyro. As the aircraft turns left or right, gears on the sensing unit and dial shaft translate this rotation into rotation of the instrument's vertical dial. Left turns produce clockwise dial rotation and right turns produce counter-clockwise rotation. The gyro is controlled by a heading selector knob located on the lower left of the instrument. Pressing and turning the knob first disengages the dial shaft and then resets the dial to a new heading, which results in a new course indication. Releasing the selector knob re-engages the dial shaft. The on-course position of the pointer is always at the top of the azimuth circle (0° on the dial with the aircraft headed north). The Standard configuration can replace most air driven gyros with the major difference being in the layout and colors of the display.

NOTE: Lighted instruments do not include lamp trays, please see accessories to purchase separately.

Sigma-Tek	Model	Airplane Color	Index Markers	Dial @ 30°	Letters @ 90°	Lighted	Part Number	Price
1U262-001-9	4000B-8	White	White	White	No	No	10-05123	$1,151.00
1U262-002-32	4000B-22	White	White	White	Yes	Yes	10-05124	$1,392.00
1U262-001-39	4000B-30	Orange	Orange	White	Yes	No	4000B	$1,045.00
1U262-002-42	4000B-31	Orange	Orange	White	Yes	Yes	10-00588	$1,217.00

SIGMA-TEK 4000C / D SERIES AUTOPILOT DIRECTIONAL GYROS

The 4000C/D is an air-driven directional gyro with A.C. autopilot pickoffs. Left turns produce clockwise dial rotation and right turns produce counter-clockwise rotation. Two knobs control the gyro. The left knob is used to cage the unit, and the right knob is used to select the instrument's heading. To change course, the right selector knob is pressed and turned to disengage the dial shaft and set the pointer to a new heading. Releasing the selector knob re-engages the pointer with the dial shaft. As the aircraft turns onto a new course, the pointer returns to its original position. The on-course position of the pointer is always at the top of the azimuth circle (0° on the dial with the aircraft headed north).

Some Auto-Pilot gyros are FAA PMA approved for use in several models of the Century and S-Tec Auto-Pilot systems.

Sigma-Tek	Model	Autopilot Model	Airplane Index	Dial @ 30°	Letters @ 90°	Lighted	PMA	Part Number	Price
1U262-003-14	4000C	52D54	White	White	No	No	Yes	11-05908	$1,848.00
1U262-004-15	4000C-1	52D54M	White	White	Yes	Yes	Yes	10-02929	$1,985.00
1U262-042-3	4000C-17	King	White	White	Yes	Yes	No	10-05137	$2,254.00
1U262-003-65	4000C-18	52D54	Orange	White	No	No	Yes	10-05138	$1,942.00
1U262-004-66	4000C-19	52D54M	Orange	White	Yes	Yes	Yes	10-05139	$2,089.00
1U262-005-20	4000D-1	ARC 40760-0114 (G502A)	Yellow	White	Yes	No	No	10-05141	$2,429.00
1U262-006-45	4000D-6	S-TEC (6404)	White	White	Yes	Yes	Yes	10-00049	$2,307.00

SIGMA-TEK 4000H SERIES XYZ BOOTSTRAP DIRECTIONAL GYROS

A cost effective link to "bootstrap" other instruments requiring heading information for: display orientation to aircraft heading, heading stabilization functions, and other navigational calculations and/or solutions. Specific applications include: Argus Moving Map Display®, L-3 Avionics Stormscope®, and Insight Strike Finder®. The heading output exactly tracks the aircraft heading as depicted under the index pointer on the Directional Gyro. The synchro index and rotation reference is set to ARINC characteristics. The 26 VAC, 400 HZ heading synchro requires a readily available external excitation, preferable from the instrument/system receiving the heading output or from an independent inverter. Sigma Tek's Directional "Bootstrap" gyro includes options for lighting and interfaces for ARC, Century Flight System, and S-Tec autopilots.

Sigma-Tek	Model	Autopilot Interface	Airplane Index	Dial @ 30°	Letters @ 90°	Lighted	Part Number	Price
1U262-031-1	4000H	None	Orange	White	Yes	Yes	10-05142	$2,195.00
1U262-033-3	4000H-2	ARC	Orange	White	Yes	Yes	10-05143	$3,361.00
1U262-034-4	4000H-3	ARC	Orange	White	Yes	No	10-05144	$3,312.00
1U262-033-5	4000H-4	S-TEC	Orange	White	Yes	Yes	10-05145	$3,313.00
1U262-034-6	4000H-5	S-TEC	Orange	White	Yes	No	10-02106	$3,210.00
1U262-035-7	4000H-6	CFS	Orange	White	Yes	Yes	10-05146	$3,165.00
1U262-036-8	4000H-7	CFS	Orange	White	Yes	No	10-05147	$3,118.00
1U262-039-11	4000H-10	KING (DC)	Orange	White	Yes	Yes	10-05149	$3,165.00
1U262-040-12	4000H-11	KING (DC)	Orange	White	Yes	No	10-05150	$3,106.00
1U262-237-9	4000H-8	CFS (DC)	Orange	White	Yes	Yes	10-05148	$3,106.00

Accessories for the above gyros

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757 ..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758 ..... $67.75

SIGMA-TEK 4000HR-SERIES HEADING REFERENCE DIRECTIONAL GYROS

The 4000HR air-driven directional gyro offers some of the best features of our other popular models. It inherited all of the functionality and reliability of the industry standard 4000B upon which it's based, and it picked up a heading reference bug from the 4000C autopilot model.

Many pilots find the heading reminder a valuable feature whenever the cockpit is busy, such as during an approach with heavy ATC traffic. Setting a new heading during a long, cross-country flight eliminates the tedious math associated with frequent navigational cross-checks. A quick glance at the instrument instantly reminds the pilot of his heading. The heading bug can be positioned anywhere around the heading card by turning the right knob.

Sigma-Tek	Model	Airplane Color	Index Markers	Dial @ 30°	Letters @ 90°	Lighted	Heading Reminder	Part Number	Price
1U262-007-33	4000HR-1	White	White	White	Yes	No	Yes	10-05151	$1,444.00
1U262-007-40	4000HR-2	Orange	Orange	White	Yes	No	Yes	10-00469	$1,257.00
1U262-010-41	4000HR-3	Orange	Orange	White	Yes	Yes	Yes	10-00095	$1,470.00

Note: Lighted instruments do not include lamp trays, please specify aircrat voltage:

BA14-24-BW3G (14 Volt Lamp Tray)..... P/N 10-02757..... $67.75
BA28-24-BW3G (28 Volt Lamp Tray)..... P/N 10-02758..... $67.75

SIGMA-TEK 4000B ARINC-STYLE DIRECTIONAL GYROSCOPES

This instrument was developed for those pilots that prefer the distinct, professional look of an ARINC-styled cockpit. It is identical to the standard 4000B model differing mainly in aesthetics. Besides its distinct bezel and airplane, the display graphics and colors differentiate it from the standard model. A heading reminder bug is available as an option.

The ARINC gyros have a 3" bezel that matches existing ARINC flight director systems.

Sigma-Tek	Model	Airplane Color	Index Markers	Dial @ 30°	Letters @ 90°	Lighted	Part Number	Price
1U262-011-1	4000B-23	Orange	White	White	Yes	14 or 28V	10-05128	$2,698.00
1U262-012-2	4000B-24	Orange	White	White	No	5V	10-05129	$2,698.00
1U262-013-3	4000B-25	Orange	White	White	Yes	No	10-05136	$2,642.00

SIGMA-TEK 1U367 ARINC-STYLE ATTITUDE GYRO

The 1U367 has a pictorial horizon mask and a fixed airplane. The mask moves to indicate climb, dive, and bank. Bank and pitch attitudes are diaplayed so that the pilot's sensing of the gyro's horizon indication is the same as the interpretation of the relationship between the wings of the aircraft and the natural horizon during visual flight. The instrument is operable following maneuvers of 360° in roll and 360° in pitch. Controlled precession is employed to achieve the 360° in pitch. Note: Arinc-bezel lighted gyros have integral lighting as noted.

Sigma-Tek PN	Model	Display Colors	Lighted	Panel Tilt	Our PN	Price
1U367-205-5	1U367	Blue/Brown	none	0	10-05117	$2,093.00
1U367-210-11	1U367	Blue/Brown	14 or 28V	8	10-05118	$2,245.00

SIGMA-TEK HIGH-FLOW FITTINGS

53B423-001 - A 3/8" fitting iused for the pump output (pressure) in a typical vacuum installation having 5/8" hoses.
P/N 10-01150 ..... $48.50

53B423-002 - A 3/8" 45° fitting used for either inlet or outlet ports with installations having 5/8" hoses.
P/N 10-01151 ..... $48.50

53B423-003 - A 3/8" 90° short high-flow fitting used for either inlet or outlets with installations having 5/8" hoses.
P/N 10-01152 ..... $48.50

53B423-004 - A 3/8" 90° short high-flow fitting used for either inlet or outlets with installations having 5/8" hoses.
P/N 10-01153 ..... $48.50

IN

MID-CONTINENT INSTRUMENTS AND AVIONICS ELECTRIC ATTITUDE INDICATOR

Engineered as a primary or standby artificial horizon in fixed-wing aircraft and helicopters, this indicator's single connection makes installation a snap. This indicator is standard equipment on many OEM aircraft including the Beech Baron and Bonanza. Featuring 10-32 volt DC operation, antireflective glass, long-life lighting and 7,500 hours MTBF, this is a cost-effective and safe alternative to unreliable vacuum systems.

4300-311 - 10/32V, lighted, 0-20° Without btty
P/N 10-00751 ..... $3,395.00

4300-313 - 10/32V, Lighted, 0-20°, Delta
P/N 10-03899 ..... $3,395.00

Emergency power supply TS420 ..... P/N 11-05540 ..... $2,165.00

MID-CONTINENT INSTRUMENTS AND AVIONICS 3300 ELECTRIC DIRECTIONAL GYRO

FEATURES: • Weighs just 1.9 lbs. – One pound less than most electric directional gyros • Multi-voltage 10–32 volt DC, remains valid until the aircraft main battery discharges to 10VDC • Direct replacement for many AIM205 and RC Allen RC15A units • Designed specifically for use in high vibration applications • Warning flag monitors rotor speed and power input • Anti-reflective glass enhances visibility and reduces fatigue • Approved to FAA TSO-C5e and RTCA DO-160E • Requires less than half the power of standard DG units • Long-life LED lighting, user selectable to 5, 14 or 28 volt input • One year limited warranty SPECIFICATIONS; Power Input: 10–32 VDC, Current Rating: At 14 VDC Start: 1.4A Max., Run: 0.44A nominal, At 28 VDC Start: 0.6A Max., Run: 0.22A nominal, Lighting: Internal LED lighting switchable to 5, 14 or 28 VDC input; wired through main connector, Weight: 1.9 lbs., Length: 4.65 inches, MTBF: 2,500 hours, Mating Connector: MS3116F8-4S ,Mounting: Rear panel mount in standard 31/8" round panel cutout

3300-10 no lighting ..... P/N 10-02821 ..... $3,295.00
3300-11 14V LED Lighting ..... P/N 10-04773 ..... $3,698.00
3300-11 28V LED Lighting ..... P/N 10-04774 ..... $3,698.00
4 Pin Connector MS3116E8-4S ..... P/N 10-00791 ..... $18.75

MID-CONTINENT INSTRUMENTS AND AVIONICS "LIFESAVER" ELECTRIC ATTITUDE INDICATOR

Fly with confidence and peace of mind with the Lifesaver® gyro. Even if every other system in your aircraft's avionics panel goes dark, the Lifesaver powers on. The only attitude indicator with a self-contained battery backup, it delivers one full hour of emergency attitude reference. 1 hr of precious time to pull you through when trouble strikes and all other power fails. Optional slip indicator can be installed anytime. No removal of gyro necessary.

Benefits: Field replaceable lighting, Anti-reflective glass enhances visibility and reduces fatigue, Battery life 3 years in average aircraft environment, 10-32 VDC replacement for use in either 14 or 28V aircraft, May be installed in place of an existing turn coordinator or turn, and slip indicator per FAA advisory circular AC91-75.

14V Gyro With Battery ..... P/N 10-00750 ..... $4,075.00
Slip Indicator Kit ..... P/N 10-00764 ..... $278.95
Remote Battery Mounting Kit ..... P/N 10-00763 ..... $76.95
Replacement Battery Pack ..... P/N 10-01054 ..... $249.95
3/32" Front Mount Adapter ..... P/N 10-00765 ..... $96.75
1/2" Front Mount Adapter ..... P/N 10-00766 ..... $167.75

CASTLEBERRY ELECTRIC ATTITUDE INDICATOR

The high quality electric attitude indicator replaces the turn and bank and may be installed in the same panel location, freeing up crowded panel space. Installation of these units is straight-forward. It has an inclinometer for use in standard rate turns and a failure warning flag to indicate loss of gyro RPM. When used together with the Castleberry Emergency Power Unit, Model EPU 28-24RMT, this instrument provides the pilot with a welcome margin of insurance in case of aircraft electrical power failure. Features: • Inclinometer • Power failure flag • Pull to cage knob • Backlit • Standard 3 1/8 in. diameter

Model No.	Description	Part No.	Price
300-14EL	14V Gyro **	10-02823	$2,395.00
300-14EL	28V Gyro With 8° Tilt	10-02829	$2,385.00
300-14ELP	300-14EL With Auto Pilot outputs.*	10-02826	$3,592.00

*Please Specify at time of order 10-32V or tilt if desired.
**Light Tray required.

FALCON ATTITUDE GYRO (VACUUM)

This Gyro Horizon is controlled by an air driven precision gyroscope to present the pilot with pitch and roll information, through the full 360° "pictorial" presentation leads to faster interpretation of airplane attitude. A zero pitch adjustment knob is provided. Dims: 3-1/8 x 3-1/8 x 8 max. Non-TSO'd for Experimental Aircraft Only

Non-TSO'd ..... P/N 10-22955 ..... $643.00
Gyro with 8° tilt Falcon ..... P/N 10-02242 ..... $735.00

FALCON ATTITUDE GYRO (ELECTRIC)

This factory new electric attitude gyro fits the standard gyro instrument cut-out. Features push-to-cage knob, low power/power failure flag, longer life & reliability due to lower operating temp.; Black case, black adjustment knob, & bright yellow/green airplane marker with sky blue/brown ground dial. Roll & loop without worry. Size: 6.4", Wt: 2.4 lbs., Power: 14VDC req. MS3116E8 connector (included). Non-TSO'd for Experimental Aircraft Only.

Size	Model No.	Description	Part No.	Price
3-1/8"	GH02E-3	Non-TSO'd, 14V	10-04671	$1,595.00
3-1/8"	GH02E-3L	Non-TSO'd, 14V, lighted	10-04672	$1,649.00
3-1/8"	GH02E-3A	Falcon, 14V, 8° tilt	10-04673	$1,564.00
3-1/8"	GH02E-3AL	Falcon, 14V, 8° tilt, lighted	10-04674	$1,698.00
3-1/8"	GH02E-3B	Falcon, 28V	10-00102	$1,595.00
3-1/8"	GH02E-3BL	Falcon, 28V, lighted	10-00103	$1,792.00
4 Pin	MS3116E8-4S	4 Pin Connector MS3116E8-4S	10-00791	$18.75

FALCON DIRECTIONAL GYRO (VACUUM)

The vertical rotating azimuth card is controlled by a precision gyroscope air-driven. The directional gyro will give correct heading information through ±60° of aircraft attitude in roll and pitch, 360° in yaw. A caging knob is provided to reset the gyro to the magnetic compass. Similar to Air Italia Gyros. Non-TSO'd for Experimental Aircraft Only ..... P/N 10-22950 ..... $643.00

FALCON ELECTRIC DIRECTIONAL GYRO

Indicating heading angle within the range of 360°. The drift error is not more than 4°/10min.. It will work normally when operation voltage is inputted 3min.and rotor starts working when 80% operating voltage is inputted.. Operating current is not more than 0.72A.. Rated rotating speed is 22000 turns per min; It warns when power-off the rotating speed is below 70% of the rate rotating speed.. The insulating resistance between the power and case is not less than 20 MU.. It is in accordance with the standard of TSO-C4c. Operation Voltage: DC. 14±1% V. Ambient Temperature: -40~+50. Relative Humidity: It can reach 95% at 20±5c. Vibration Strength: not more than 1.5g ..... P/N 10-01798 ..... $1,498.00

FALCON DIRECTIONAL GYRO (ELECTRIC)

The Directional Gyro is a gyroscopic navigation instrument designed to provide the pilot with a constant directional reference that is not subject to characteristics of a magnetic compass that cause errors. The vacuum type is operated by the air flow generated by the aircraft's vacuum system while the electrical type is operated by the aircraft's power supply. Non-TSO'd for Experimental Aircraft Only.

Size	Model No.	Description	Part No.	Price
3-1/8"	DG02E-3H	14V with heading indicator	10-01798	$1,498.00
3-1/8"	DG02E-3HL	14V, lighted, with heading indicator	10-01796	$1,625.00
3-1/8"	DG02E-3BH	28V with heading indicator	10-01799	$1,580.00
3-1/8"	DG02E-3BHL	28V, lighted, with heading indicator	10-01822	$1,653.00

Falcon gyros can tolerated some aerobatic flight, but aerobatics can reduce the life of the gyro. It is recommended that the gyros be rem oved when the aircraft will be performing extensive aerobatic maneuvers. The Falcon electric gyros have caging knobs, but the vacuum gyros do not.

CASTLEBERRY EMERGENCY POWER BACK-UP EPU-2

TSO'd emergency power supply, Model EPU 28-24RMT that can replace some older non TSO'd units made by Terra and AIM that are no longer in production. This unit provides a 24 VDC output up to 5 Amps for 30 minutes for emergency buss power to operate the standby attitude gyro with extra capacity of up to 4 amps for other critical instrument or avionics. This is economical insurance in a 7.5 pound package for aircraft frequently involved in IFR operations.

Emergency Power Supply EPU-2 ..... P/N 11-05822 ..... $1,424.00
EPU Connector ..... P/N 11-07713 ..... $71.00
Rack Mount and Connector for EPU-2 ..... P/N 11-05823 ..... $286.00
Component Maintenance Manual ..... P/N 11-00187 ..... $441.95

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MID-CONTINENT INSTRUMENTS AND AVIONICS MINI 2-INCH ATTITUDE INDICATORS

The Mini Gyro offers big features in a compact package. At half the cost of the competition, the Mini Gyro not only saves panel space, but also time and money. An ideal standby instrument, this TSO-approved indicator has 10-32 volt DC operation and is an attractive alternative to vacuum systems. It features unique LED lighting selectable to 5, 14 or 28 volts. Remote emergency power supply available for this indicator (P/N 11-05540).

Standard airplane dislplay ..... P/N 10-01721 ..... $3,395.00
Delta airplane display ..... P/N 10-01722 ..... $3,395.00
Slip indicator (inclinometer) ..... P/N 10-04775 ..... $227.95
Emergency Power Supply ..... P/N 11-05540 ..... $2,165.00

MID-CONTINENT INSTRUMENTS & AVIONICS STANDBY ATTITUDE MODULE MD302

SAM® is the industry's first digital standby instrument to provide attitude, altitude, airspeed and slip information to the pilot in an advanced, 2-inch format.

SAM delivers an easy-to-fit, compact design with selectable orientation (horizontal and vertical) like no other, ensuring a perfect fit within any panel. The unique two-screen display features high-definition graphics and extra-wide viewing angles, and at 1.6 pounds, SAM weighs less than just one of the three instruments it's designed to replace.

See www.aircraftspruce.com for complete list of features and specifications.

P/N 10-05081 ..... $8,965.00

VACUUM PRESSURE FAILURE WARNING LIGHT KIT

The instrument Source Warning indicator for Pressure systems is designed to alert pilots of the loss of pressure prior to the gyros tumbling. This early warning can be critical in giving the pilot enough time to react to the situation properly and avoid spatial disorientation.

The kit connects to the pressure gauge via a tee fitting and will only work on aircraft equipped with PRESSURE systems. This generally is confined to various Beech Bonanza models. Please double check your system type before ordering this kit. This kit is not STC'd but is usually installed as a minor modification. P/N 11-08458 ..... $79.95

VACUUM FAILURE WARNING LIGHT KIT

The Precise Flight Vacuum Failure Warning kit will provide the pilot with immediate warning of failure of the vacuum system, providing valuable time prior to gyro failure. An inexpensive system that can alert the IFR pilot immediately in the event of vacuum failure. P/N 11-02205 ..... $84.75

VOLT & VAC ALERT

A gyro instrument can start giving false information in less than one minute, and it is important that the pilot become instantly aware of a vacuum loss. The Volt & Vac Alert monitors instrument vacuum and electrical voltage. Should either fall below set values, the system will provide an instantly recognizable voice warning directly in the pilots headset, and then flash a light positioned within the normal gyro scan area, providing him with instant recognition of a problem. The Volt & Vac Alert is STC - PMA approved P/N 10-00393 ..... $479.95

VENTURI

2" VENTURI - This small aluminum venturi provides 2" Hg vacuum for operating turn/bank indicator. Has 1/8" NPT port. Use 1/4" tubing for hookup. Wt. 3.5 oz.

P/N 15045 ..... $57.75

4" VENTURI - This venturi develops 4" Hg suction from double-throat venturi and 10" long horn. Used to operate a directional gyro or gyro horizon. When operating a directional gyro there is sufficient capacity to also operate a turn/bank. All aluminum construction. May require a suction regulator.

Wt. 0.9 lb. ..... P/N 15050 ..... $82.80

9" VENTURI - This "super venturi" is similar in appearance to the 4" venturi but with redesigned air passages and a recontoured, long (11-1/4") horn. It pulls enough vacuum to operate a gyro horizon, directional gyro and a turn/bank. Must be used with a suction regulator.

P/N15052 ..... $86.50

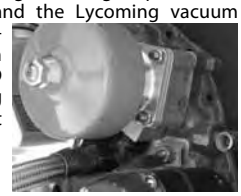
SIGMA TEK CAGEABLE ATTITUDE GYROS

Short stops (engine off less than twelve minutes) and some aerobatic maneuvers may cause your attitude gyro to tumble or precess from its vertical reference. When the rotor is spinning, the gyros normal erection system is slow and can take several minutes to correct a large erection error. This non-locking caging feature allows the pilot to quickly align the gyro display and rotor to gyro case reference. The attitude gyro should only be caged for quick alignment during straight and level VFR flight using well defined earth horizon for reference or prior to take off. All lighted gyros must order tray separately.

P/N	DESCRIPTION	PRICE
5000B	Standard Gyro, Unlighted (non-cageable)	$1,151.00
5000B-F	Standard Gyro w/Vacuum Failure Flag (non-cageable)	$1,444.00
5000M-1	With Caging Knob, 0° Panel Tilt	$1,835.00
5000M	With Caging Knob, 0° Panel Tilt, Lighted	$1,816.00
5000M-2	With Caging Knob, 8° Panel Tilt	$1,764.00
5000M-5	With Caging Knob, 8° Panel Tilt, Lighted	$1,817.00
5000B-46	With Inclinometer, 0° Panel Tilt	$1,465.00
5000B-45	With Inclinometer, 0° Panel Tilt, Lighted	$1,555.00
5000B-51	With Inclinometer, 8° Panel Tilt	$1,466.00
5000B-53	With Inclinometer, 8° Panel Tilt, Lighted	$1,555.00
5000M-3	With Caging & Inclinometer, 0° Panel Tilt	$2,412.00
5000M-6	With Caging & Inclinometer, 0° Panel Tilt, Lighted	$2,310.00
5000M-4	With Caging & Inclinometer, 8° Panel Tilt	$2,299.00
5000M-7	With Caging & Inclinometer, 8° Panel Tilt, Lighted	$2,364.00
10-00111	5000B Light Tray 14V	$102.75
10-00112	5000B Light Tray 24V	$102.75

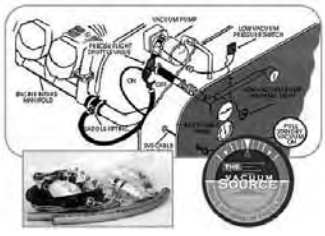
B&C VAC-2 INVERTED OIL PICKUP ADAPTER

The innovative VAC-2 adapter is intended for home-built aerobatic aircraft equipped with the typical inverted oil system. Designed to permit improved engine lubrication in inverted flight while providing a standard vacuum pump pad (often used to mount a B&C pad-driven alternator). The VAC-2 replaces the firewall-mounted Christen "T" fitting, allowing improved oil pressure response time, and the Lycoming vacuum pump pad adapter casting. Ships complete with oil seal installed, gaskets, and MS20822-10D fitting, ready for installation of the existing vacuum pump drive gear assembly and thrust washer (not included). Weight: 11.5 oz.



VAC-2/4 (for 4-Cylinder engines) ..... P/N 07-06790 ..... $180.00
VAC-2/6 (for 6-Cylinder engines) ..... P/N 07-06795 ..... $180.00

STANDBY VACUUM SYSTEM SVS V



Manufactured by Precise Flight, Inc., this Standby Vacuum System, SVS V, is a new solution to the old problem of in-flight vacuum pump failures. It operates on a differential between manifold pressure and ambient pressure which is directed through a shuttle valve system to drive the flight instruments. When the vacuum pump fails, the pilot simply turns on the SVS system and adjusts engine power settings while observing the instrument suction gauge to obtain adequate differential to operate the instruments. Kit includes low vacuum light and installs in 2-4 hours. STCd for most aircraft. This kit can provide peace of mind on all flights and, if that pump ever fails, can be a real life saver. P/N 10-00400 ..... $575.00

AERO SAFE GUARDIAN I STANDBY VACUUM/PRESSURE SYSTEMS

The Aero Safe Guardian I Standby/ Pressure system is designed to provide the pilot with the most reliable standby source of instrument air available for single engine aircraft. STC'd for most Bellanca, Beech, Cessna, and Piper single engine aircraft. Specify aircraft make, model, year, and serial number when ordering.

Vacuum system ..... P/N 10-00267 ..... $2,033.00
Pressure system ..... P/N 10-00268 ..... $2,159.00

IN

SKYSPORTS NON-TSO'D INSTRUMENTS

SKYSPORTS VACUUM ATTITUDE GYRO

The Skysports Vacuum Attitude Gyro is a standard artificial horizon gyro powered by the vacuum system in the aircraft. It is ideal for use in a wide variety of experimental aircraft. Non-TSO'd. Size: 3-3/8"x6.46/164m. Weight: 2.4lb/984g.

P/N 10-05423 ..... $484.00

SKYSPORTS VACUUM DIRECTIONAL GYRO

The Skysports Vacuum Directional Gyro is a standard gyro powered by the vacuum system in the aircraft. It is ideal for use in a wide variety of experimental aircraft. Non-TSO'd. Dimensions: 3-3/8" x 5-5/16"/134.95mm. Weight: 2.25lb/984g.

P/N 10-05421 ..... $484.00

SKYSPORTS ELECTRIC ATTITUDE GYRO

The Skysports Electric Attitude Gyro is a high quality gyro which is excellent for a wide variety of experimental aircraft. It features a power failure flag which drops into view if voltage is below operational requirements. It also includes a "Pull to CageA" knob. Non-TSO'd. Power Supply: 14V. Dimension: 3-3/8" x 6.46/164mm Weight: 2.4lb/ 984g.

P/N 10-05422 .....$1,232.00

SKYSPORTS ELECTRIC DIRECTIONAL GYRO

The Skysports electric directional gyro is a high quality gyro providing smooth operation, long life, and reliability. It features a warning flag which is displayed when voltage drops below operation requirements, and the instrument is LED lighted with automatic dimming. A good choice for a wide variety of experimental aircraft. Non-TSO'd. Dimensions: 3-3/8"

P/N 10-05077 .....$1,233.00

SKYSPORTS ELECTRIC TURN COORDINATOR

The Skysports Electric Turn Coordinator is lightweight and compact, and ideal for a wide variety of experimental aircraft. It includes an inclinometer for slip indication during turns, and features a power failure flag to indicate that voltage has dropped below operational requirements. Operates on 14-28VDC. Non-TSO'd.

P/N 10-05410 ..... $378.00

SKYSPORTS INCLINOMETER

The Skysports inclinometer mounts in a standard 2-l/4" instrument hole. Lightweight and durable, it is an excellent choice for a wide variety of experimental aircraft. Non-TSO'd. P/N 10-05411 .....$51.99

SKYSPORTS 3 1/8" SINGLE RANGE AIRSPEEDS

Skysports airspeed indicators are lightweight, reliable, and are housed in short length aluminum cases. They give accurate indications at slow speeds and are available in a variety of ranges. These airspeed indicators are excellent for a wide range of experimental and ultralight aircraft. Non-TSO'd. Size: 3 1/8" Length: 3.5in/97.3mm Weight: 10.2oz/290g

Model No.	Length	Range	Part No.	Price
BK-33	97.3mm	20-180 MPH	10-05394	$173.75
BK-9C	58mm	20-180 MPH	10-05409	$161.75
BK-7B	58mm	20-120 MPH	10-05406	$161.75
BK-31	97.3mm	20-140 MPH	10-05392	$167.00
BK-6C	58mm	20-150 MPH	10-05405	$161.75
BK-12	58mm	20-80 KNT	10-05381	$161.75
BK-13A	58mm	20-100 KNT	10-05384	$161.75
BK-14A	58mm	0-120 KNT	10-05386	$161.75
BK-3A	97.3mm	20-140 KNT	10-05399	$173.75
BK-15	97.3mm	0-160 KNY	10-05387	$173.75
BK-34	97.3mm	30-180 KNT	10-05395	$176.75
BK-5A	97.3mm	30-220 KNT	10-05404	$173.75
BK120-1B	58mm	30-150 KPH	10-05383	$161.75
BK150-1A	58mm	30-150 KPH	10-05388	$167.75
BK200-1A	58mm	0-200 KPH	10-05389	$173.75
BK300	58mm	40-300 KPH	10-05391	$167.00

SKYSPORTS 3-1/8" DUAL AIRSPEEDS

Skysports dual dial airspeeds provide the pilot with airspeed indications in MPH and Knots, and are housed in a lightweight, durable aluminum case. These airspeed indicators are ideal for a wide variety of experimental aircraft flying at higher cruise speeds. Non-TSO'd.
Weight: 10.5 oz / 301g. Length: 2.2" or 56.5mm
Size: 3 1/8" Length: 3.5" or 97.3mm Weight: 10.5 oz / 301g

Model No.	Range	Part No.	Price
BK-3	120-160 MPH/20-140 KNT	10-05390	$173.75
BK-4	30-180 MPH/30-160 KNT	10-05400	$166.75
BK-10	30-200 MPH/30-180 KNT	10-05380	$170.00
BK-5	30-250 MPH/30-220 KNT	10-05402	$170.75
BK-47	0-300 KPH/0-160 KNT	10-05401	$195.99

SKYSPORTS 2 1/4" MINIATURE AIRSPEEDS

Skysports miniature airspeed indicators provide the pilot with accurate slow speed indications making them a good choice for use in ultralight aircraft. These airspeed indicators are lightweight and fit in a standard 2-l/4" instrument hole.
Non-TSO'd.
Range: 0-140 mph
Size: 2 1/4"
Length: 2-9/16" or 41mm
Weight: 2.8oz or 80g

Model No.	Range	Part No.	Price
BK-36	20-80 MPH	10-05396	$145.00
BK-37	20-100 MPH	10-05397	$145.00
BK-38	20-120 MPH	10-05398	$145.00
BK120-1A	30-120 KPH	10-05382	$145.00
BK-140	20-140 KPH	10-05385	$151.75
BK-57	0-120 KNT	10-05403	$161.75

IN

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SKYSPORTS NON-TSO'D INSTRUMENTS

SKYSPORTS 3-1/8" SENSITIVE ALTIMETERS

Skysports sensitive altimeters feature three pointers and knob to set correct barometric pressure enroute and destination. High quality sensitive altimeters which are in use in thousands of experimental aircraft worldwide.
Non-TSO'd
Size: 3 1/8"
Weight: 1.4 lbs. or 592g

Barometric Window	Range	Warning Stripes	Pointers	Part No.	Price
Yes	20,000 ft, Inches	Yes	3	10-04400	$299.95
Yes	20,000 ft, Millibars	Yes	3	10-05371	$338.00
Yes	20,000 ft, Inches & Millibars	Yes	3	10-05374	$339.00
Yes	6,000 meter, Millibars	No	3	10-05376	$316.00
Yes	20,000 ft, Inches	No	3	10-05372	$307.00
Yes	20,000 ft, Millibars	No	3	10-05373	$294.00

SKYSPORTS 3-1/8" NON-SENSITIVE ALTIMETERS

Skysports non-sensitive altimeters feature a single pointer and barometric window. These altimeters are lightweight, and very accurate, making them ideal for a wide variety of experimental and ultralight aircraft. The setting knob allows the pilot to set the barometric pressure or field elevation.
Non-TSO'd
Length: 2-3/8". Weight: 10.7 oz

Gauge Size	Range	Part No.	Price
3-1/8"	10,000 ft/ 20,000 ft, Inches	10-05367	$153.75
3-1/8"	6,000 ft, Millibars	10-05366	$153.75
3-1/8"	10,000 ft, Millibars	10-05365	$153.75

SKYSPORTS 2-1/4" SENSITIVE ALTIMETERS

Skysports sensitive altimeters feature three pointers and knob to set correct barometric pressure enroute and destination. High quality sensitive altimeters which are in use in thousands of experimental aircraft worldwide.
Non-TSO'd
Length: 2-3/8"
Weight: 3.6 oz. oz

Size	Range	Part No.	Price
2-1/4"	5,500 ft, Inches	10-05377	$191.75
2-1/4"	10,000 ft, Inches	10-05368	$191.80
2-1/4"	6,000 ft, Millibars	10-05369	$191.75
2-1/4"	6,000 meters, Millibars	10-05375	$196.00

SKYSPORTS NON TSO 2-1/4" ALTIMETER

Skysports NON TSO 2-1/4". Barometric Altitude Indicator - 3000 meters. Millibar Scale. P/N 10-05441 ..... $188.99

NON-TSO'D VERTICAL SPEED INDICATORS

Skysports vertical speed indicators are easy to read, lightweight, and durable. These rate of climb indicators are available in several different ranges and are in use in a wide variety of experimental aircraft worldwide.
Non-TSO'd
Size: 3-1/8"
Length: 4.25"/105mm
Weight: 12.7 oz

Part No.	Size	Range	Length	Weight	Price
10-05361	3 1/8"	2,000 ft/min	4.25"/105mm	12.7 oz	$193.75
10-05362	3 1/8"	3,000 ft. / Min.	4.25"/105mm	12.7 oz	$212.95
10-05360	3 1/8"	10 meter/second	4.25"/105mm	12.7 oz	$186.75
10-05363	2 1/4"	2,000 ft. / Min.	4.8"/112mm	9.2 oz	$261.95
10-05364	2 1/4"	10 Meters / Sec.	4.8"/112mm	9.2 oz	$251.95

SKYSPORTS PANEL MOUNT COMPASSES

Skysports aircraft compasses are similar in design and function to the industry standard C2300 and C2400 series compasses. High quality and economically priced. Error of the compass is no more than 2.5 degree; Friction error is no more than 1 degree; When an aircraft tilts for 10,the error is no more than 4 degree; Ambient temperature is-55TO +60 degree centigrade.
Non-TSO'd.
Size: 2-1/4"
Mount: Panel Mount (Lighted or unlighted)
Weight: 6.9oz/198g

Description	Part No.	Price
Northern Hemishpere, Not Lighted	10-05412	$77.75
Northern Hemishpere, 12V-24V Lighted	10-05413	$84.99
Southern Hemishpere, Not Lighted	10-05415	$81.75
Southern Hemishpere, 12V-24V Lighted	10-05414	$85.85

SKYSPORTS VERTICAL CARD COMPASSES

The Skysports Vertical Card compass features a 2 inch vertical card dial which presents the entire 360 degree heading range at all times for easy interpretation. It is a dry compass which eliminates the leaking and much of the precessing common in wet compasses.
Lighted 12VDC.
Non-TSO'd.

Description	Part No.	Price
Northern Hemishpere, Compass Only	10-04173	$259.95
Northern Hemishpere, Compass & Mounting Bracket	10-05425	$229.95
Southern Hemishpere, Compass Only	10-05426	$259.95
Southern Hemishpere, Compass & Mounting Bracket	10-05427	$223.95

SKYSPORTS MANIFOLD PRESSURE GAUGE

Skysports manifold pressure indicator displays engine intake in inches of mercury. High quality instrument which is in use in experimental aircraft worldwide.
Non-TSO'd
Range: 10-50 inch hg
Size: 3-1/8"
Weight: 13.5oz or 386g
Length: 75"
P/N 10-05379 ..... $159.75

IN

RC ALLEN TURN COORDINATOR 3 INCH. INDICATORS

Used in many production aircraft. Incorporates an electrical Gyro Turn Indicator with an inclinometer. The inclinometer, by movement of a ball in relation to the lubber lines, indicates the slip angle of aircraft while in a turn. The airplane on the dial rotates with reference to the indices. A power failure flag drops into view whenever the supply voltage is lost or when voltage has dropped below a level acceptable for proper operation of the gyro. Operates on 14 to 28V DC. New manufacture. First installation requires electrical connector and clamp. DIMENSIONS: Length: 6 1/5 in. Max, Width: 3 3/8 in Max, Height:3 3/8 in Max, Weight: 1.9 lbs. Meets or exceeds requirements of FAA TSO C3b

Description	Model	Part No.	Price
Unlighted - Mating Connector: MS3106A-10SL-3S	RCA82A-11	10-01372	$798.00
Lighted (14V) - Mating Connector: MS3106A-10SL-3S	RCA83A-11-14	10-00485	$929.00
Lighted (28V) - Mating Connector: MS3106A-10SL-3S	RCA83A-11-28	10-01685	$929.00
Mating Connector	MS3106A-10SL-3S	10-00789	$13.95
Cable Clap	MS3057-4A	10-00959	$4.85

MID-CONTINENT INSTRUMENTS AND AVIONICS TURN COORDINATOR (ELECTRIC)

Engineered for a long service life, the new "B" model turn coordinator features a proven AC rotor powered by a solid-state inverter. This creates less heat behind the panel. By utilizing a brushless rotor design, this instrument has one of the top ratings in the industry – 4800 hours MTBF. A direct replacement for most 3-pin turn coordinators, it is perfect for use in high-performance aircraft and cold-climate applications. The well-known "Z" models are an industry standard. Value priced and reliable they are in more aircraft than any other brand. All 3-inch turn coordinators operate from 10 to 32 volts DC for convenience and reliability.

1394T100-7Z 12-32v, UNLIT ..... P/N 1394T100 ..... $755.00
1394T100-3Z 14v, LIT ..... P/N 10-22514 ..... $949.00
1394T100-10RB (Cessna, KAP 140, Autopilot)
P/N 10-02311 ..... $1,638.00
MS3106A-10SL-3S Electrical Plug Connector ..... P/N 10-00789 ..... $13.95
MS3057-4A Cable Clamp ..... P/N 10-00959 ..... $4.85
Note: 3A & 8A models have brushless rotors to reduce air noise

MID-CONTINENT INSTRUMENTS AND AVIONICS TURN COORDINATORS (ELECTRIC) - B MODELS

Certified to FAA TSO C3b. OEM standard - proven reliablity. Includes power warning indicator. Features: •4500 hours MTBF, more than double the original "Z" design• Brushless AC rotor operates on 14 or 28 VDC. •Proven reliability through HALT (Highly Accelerated Life Testing) requirements and OEM usage since 1999.• Improved "Off" warning flag pulls out of view when rotor is up to speed. • Is a direct replacement for the popular 1394T100-7Z and most standard 3-pin turn coordinators.

1394T100-7B Unlighted 12-32V ..... P/N 10-02108 ..... $931.00
28V unit- 12-32V Bezel Lighting ..... P/N 10-01024 ..... $1,088.00
Unlighted G300A Autopilot, ARC ..... P/N 10-02653 ..... $1,535.00
1394T100-14RB Low Wing Turn Coordinator Autopilot - For use on low wing aircaft. ..... P/N 10-04022 ..... $1,638.00

FALCON TURN COORDINATOR (ELECTRIC)

3-1/8" cut out, 3-3/4" long. Small and lightweight, excellent for homebuilt aircraft. For 14V or 28V systems. Features power out warning flag. Unlighted.

Unlit 0° Panel Falcon ..... P/N 10-22510 ..... $519.00
Unlit 8° Panel Falcon ..... P/N 10-02261 ..... $499.00
Lit 0° Panel Falcon ..... P/N 10-02262 ..... $597.00
Lit 8° Panel Falcon ..... P/N 10-02263 ..... $587.00
Connector MS3106A-10SL-3S ..... P/N 10-00789 ..... $13.95
Cable Clamp MS3057-4A ..... P/N 11-04969 ..... $5.85

WINTER SLIP INDICATORS

The basic flight instrument for co-ordinated turns. Available in two styles: Rectangular model fits easily in cramped panel space. Square model matches a 2-1/4" instrument hole, fits on either side of the panel. Both feature finely crafted metal cases and precision ball and tube assemblies.

Square ..... P/N 10-03812 ..... $89.75
Rectangle ..... P/N 10-03857 ..... $89.75

BANK INDICATORS (BALL TYPE)

In turning, instantly register slightest departure from the correct banking angle. Bank scale has white markings on black background. New manufacture. Available in 2 models:

10°-10° Scale, 2.25" between mounting holes. ..... P/N 10-00600 ..... $114.85
20° - 20° Scale, 5" between mounting holes. ..... P/N 10-00700 ..... $59.80

MID-CONTINENT INSTRUMENTS AND AVIONICS TURN & SLIP (ELECTRIC)

Built-in voltage regulator allows it to be used in either 14V or 28V systems. Small, compact unit and weighs only 1.2 lbs. Incorporates a small "power out" warning window which is black when normal current is being supplied but turns red in the case of electrical power failure. This turn and bank is now being used in many production aircraft. New installation requires electrical connector and cable clamp. New manufacture by Electrical Gyro Corp. Size: 3-3/8'' x 3-3/8" x 3-3/4" long.

Unlighted ..... P/N 1234T100 ..... $998.00
14V Bezel-Lit ..... P/N 10-22614 ..... $1,228.00
28V Bezel-Lit ..... P/N 10-22628 ..... $1,228.00
MS3106A-10SL-3S Electrical Plug Connector $13.95
MS3057-4A Cable Clamp $4.85

FALCON TURN & BANK(ELECTRIC)

The unit is an electrically-driven gyroscope. The inclinometer, by movement of a ball in relation to the lubber lines, indicates the slip angle of the aircraft while in a turn. A power flag drops into view whenever the voltage drops below a level which is required for proper operation of the gyro. It incorporates a built-in voltage regulator so it can be used with either 14VDC or 28VDC power supply system. It has a DC-AC-DC converter. Power Supply: 10-30VDC, Electrical Consumption: Max. 1.0A at 11-26VDC Max. 0.35A at 26 to 30VDC, Operating Range: 2 min. Turn, Weight: 18 oz./0.5 kg, Length: approx. 5 inchesUnlit P/N 10-22515 ..... $1,061.00

RC ALLEN TURN & BANK (ELECTRIC)

instrument is powered by an electrically driven DC precision gyro with an inclinometer. It gives the pilot turn and bank information. The RCA56 series is an all volt instrument, with a power warning flag, a black or white ball inclinometer and either lighted or non-lighted. DIMENSIONS: Length: 6 1/4 in. Max Width: 3 3/8 in. Max Height: 3 3/8 in. Max Weight: 1.9 lbs.

Meets or exceeds requirements of FAA TSO C3bNew manufacture by A.I.D. RC Allen. New installation requires plug connector & cable clamp.

RCA56-3B, UNLIT ..... P/N 10-01684 ..... $889.00
RCA56-3BL, LIT ..... P/N 10-02138 ..... $889.00
Plug Connector ..... P/N MS3106A-10SL-3S $13.95
Cable Clamp ..... P/N MS3057-4A0 ..... $4.85

RC ALLEN MINIATURE TURN/ BANK (ELECTRIC)

Similar to the air driven model but the gyroscope is electrically driven. Connection is by electrical plug. Power: 14 or 28V DC. New manufacture.

28V, 4 Min Turn Yellow markings ..... P/N 10-03429 ..... $1,163.00
14V, 2 Minute Turn ..... P/N 10-00499 ..... $2,000.00
14v, 2 Minute Turn 14/28 V Lit ..... P/N 10-02587 ..... $1,259.00
Plug Connector ..... P/N MS3106A-10SL-3S$ $13.95
Cable Clamp ..... P/N MS3057-4A $4.85

AN5820-1 TURN & BANK (VACUUM)

AN5820-1 Turn & Bank indicator completely overhauled and certified to FAA requirements. Fresh matte-white dial markings with "doghouses". Power: 1.8" to 2.2" Hg vacuum produced by a 2" venturi or vacuum pump. Size: 3.25"x 3.25"x 4.75" long. Weight: 1.5 lbs. 1 year warranty.P/N AN5820-1 ..... $526.00

TURN & BANK KIT

Consists of an overhauled and certified Turn & Bank indicator, 2" venturi, hoses, fittings and instrument screws.

P/N 10-00300 ..... $602.00

MID-CONTINENT INSTRUMENTS AND AVIONICS TURN & SLIP INDICATOR, 2-INCH

Widely used in the turbo-prop market as standard equipment, this dependable instrument fits into the tightest panel space. The AC brushless rotor offers great reliability. Internal lighting options of 5, 14 and 28 volt offer greater flexibility. These were factory installed on the DeHavilland Dash 8 and Boeing Chinook CH47

14V Turn & Slip ..... P/N 10-00305 ..... $1,933.00
28V Turn & Slip ..... P/N 10-00310 ..... $1,933.00
Plug Connector ..... P/N MS3106A-10SL-3S $13.95
Cable Clamp ..... P/N MS3057-4A $4.85

FALCON 2-1/4" INCLINOMETER

This in-dash mounted inclinometer is lightweight and fits a standard 2-1/4" instrument hole. Used on Kitfox aircraft & ideal for virtually any homebuilt. P/N 10-00705 ..... $52.75

IN

TEMPEST DRY AIR PUMPS

TEMPEST TORNADO 3000 DRY AIR PUMPS

New revolutionary LRT oil drain, patent pending feature is designed to drain oil, caused by a leaking Garlock Seal, before it reaches the drive coupler. Provides a tell tale leak path. Closed front ends, designed to eliminate oil and oil residues from entering into the pump. Helps prevent pump failures caused by oil entering into the drive mechanism or rotor and vanes. 3 year 1300 hour warranty

Tempest Tornado 3000 Model AA3215CC ..... P/N 10-00609 ..... $341.00
Tempest Tornado 3000 Model AA3216CW ..... P/N 10-00610 ..... $349.00
Tempest Tornado 3000 Model AA3215CC-9 ..... P/N 10-00611 ..... $349.00

TEMPEST VACUUM PUMP COOLING SHROUDS

Cooling shrouds have been proven to reduce pump operating temperature and therefore extend service life. Testing has proven reduction in operating temperature by as much as 15%. Saves money - extends service life of dry air pumps. AA20T fits all 200/240 series pumps. AA40T fits all 400 series pumps. Sigma - Tek® pumps are not eligible.

AA207 ..... P/N 10-02796 ..... $59.75
AA40T ..... P/N 10-02797 ..... $66.75

TEMPEST HOMEBUILT VACUUM SYSTEM KITS

Kit includeds •Vacuum Pump •Vacuum Regulator •Vacuum Gauge •Gyro Filter Asssembly •6-5/8 Hose & Clamps •6-3/8 Hose & Clamps •4-1/4 Hose & Clamps •Pump Inlet & Outlet Fittings •Gyro Inlet Fittings •Gyro Outlet Fittings •Gyro to Vacuum Gauge Fitting •Installation Instructions

Model 215CCHK ..... P/N 10-02004 ..... $884.00
Model 216CWHK ..... P/N 10-02005 ..... $767.00
Model AA3215CCHK ..... P/N 10-01134 ..... $925.00
Model AA3216CWHK ..... P/N 10-01135 ..... $925.00

VACUUM PUMP APPLICATION

See www.aircraftspruce.com
for complete listing of vacuum pump
applications for most general aviation aircraft.

TEMPEST WEAR INDICATOR TOOL KIT

Tempest Wear Indicator Tool Kit. Kit includes: 3 Star Lockwashers (82-50122-2A2), 3 Hole Plugs (82-50122-2A1), 1 WIP Tool (82-501222A6T) P/N 10-04814 ..... $47.50

TEMPEST ELECTRIC AUX. DRY AIR PUMPS

Electric auxiliary dry air pumps are recommended for single engine aircraft flown in IFR conditions as a back-up in the event the primary vacuum pump fails. These pumps are FAA-PMA approved as direct replacements for Airborne pumps previously installed under STC eligibility and STC approval for these pumps for many additional aircraft is pending.

28VEC ..... Electric Auxiliary Dry Air Pump Model AA4A2-1 ..... P/N 10-00585 ..... $1,537.00
14VEC ..... Electric Auxiliary Dry Air Pump Model AA4A3-1 ..... P/N 10-00584 ..... $1,698.00

TEMPEST DRY AIR PUMPS

Tempest dry air pumps, from Aero Accessories, are 100% new production and use all new components. They are FAA-PMA approved replacements for like and similar models on many installations. These pumps are available in the 200, 240, and 400 series.

The AA215CC series come with a 1-year, unlimited hour warranty and the AA241CC, AA242CW, and the AA441CC and AA442CW series come with a 1-year, 500 hour warranty. Warranties expire 2-years from date of manufacture. $100.00 Core Charge applied to Overhauled Pumps

*Core Rebate available for new pumps.

TEMPEST DRY AIR PUMPS - OVERHAULED

MODEL	DESCRIPTION	PART NO.	PRICE
215CCWIP	Overhauled Dry Air Pump w/WIP	10-24000-1	$258.95
216CWWIP	Overhauled Dry Air Pump w/WIP	10-24600-1	$258.95
241CC	Overhauled Dry Air Pump	10-24700-1	$452.00
243CC-13	Overhauled Dry Air Pump	10-01969	$455.00
243CC-15	Overhauled Dry Air Pump	10-01968	$456.00
242CW	Overhauled Dry Air Pump	10-24800-1	$452.00
244CW-4	Overhauled Dry Air Pump	10-01971	$454.00
244CW-10	Overhauled Dry Air Pump	10-01972	$454.00
441CC-3	Overhauled Dry Air Pump	10-01974	$598.00
441CC-7	Overhauled Dry Air Pump	10-01975	$598.00
441CC-9	Overhauled Dry Air Pump	10-01977	$598.00
441CC-11	Overhauled Dry Air Pump	10-01978	$598.00
441CC-17	Overhauled Dry Air Pump	10-01979	$592.00
441CC-23	Overhauled Dry Air Pump	10-01980	$592.00
442CW	Overhauled Dry Air Pump	10-23600-1	$594.00
442CW-4	Overhauled Dry Air Pump	10-01981	$608.00
442CW-6	Overhauled Dry Air Pump	10-01982	$594.00
442CW-8	Overhauled Dry Air Pump	10-01983	$592.00
442CW-10	Overhauled Dry Air Pump	10-01984	$592.00
442CW-12	Overhauled Dry Air Pump	10-01146	$619.00
442CW-14	Overhauled Dry Air Pump	10-01985	$592.00
442CW-20	Overhauled Dry Air Pump	10-01986	$592.00
AA215CWHK	Overhauled Dry Air Pump	10-01134	$925.00
AA216CCHK	Overhauled Dry Air Pump	10-01155	$983.00

TEMPEST DRY AIR PUMPS - NEW

MODEL	DESCRIPTION	PART NO.	PRICE
AA241CC	New Dry Air Pump	10-24700	$669.00
AA243CC-13	New Dry Air Pump	10-01987	$708.00
AA243CC-15	New Dry Air Pump	10-01988	$708.00
AA243CW	New Dry Air Pump	10-24800	$669.00
AA244CW-4	New Dry Air Pump	10-01989	$708.00
AA244CW-10	New Dry Air Pump	10-01990	$691.00
AA3215CC	New Dry Air Pump	10-00609	$341.00
AA3216CW	New Dry Air Pump	10-00610	$349.00
AA3215CC-9	New Dry Air Pump	10-00611	$349.00
AA441CC	New Dry Air Pump	10-23500	$987.00
AA441CC-3	New Dry Air Pump	10-01991	$987.00
AA441CC-7	New Dry Air Pump	10-01992	$987.00
AA441CC-9	New Dry Air Pump	10-01993	$987.00
AA441CC-11	New Dry Air Pump	10-01994	$989.00
AA441CC-17	New Dry Air Pump	10-01995	$967.00
AA442CW	New Dry Air Pump	10-23600	$927.00
AA442CW-4	New Dry Air Pump	10-01996	$920.00
AA442CW-6	New Dry Air Pump	10-01997	$967.00
AA442CW-8	New Dry Air Pump	10-01998	$967.00
AA442CW-10	New Dry Air Pump	10-01999	$967.00
AA442CW-12	New Dry Air Pump	10-02001	$1,041.00
AA442CW-14	New Dry Air Pump	10-02002	$967.00
AA442CW-20	New Dry Air Pump	10-02003	$967.00

TEMPEST PNEUMATIC COMPONENTS

PNEUMATIC FITTINGS

MODEL	DESCRIPTION	PART NO.	PRICE
AA1K1-4-6	Fitting -1/4 NPT x 3/8 Hose	10-00914	$47.75
AA1K1-4-8	Fitting -1/4 NPT x 1/2 Hose	10-01923	$74.75
AA1K1-6-6	Fitting -3/8 NPT x 3/8 Hose	10-01924	$328.40
AA1K1-6-8	Fitting -3/8 NPT x 1/2 Hose	10-00915	$49.80
AA1K1-6-10	Fitting -3/8 NPT x 5/8 Hose	10-00916	$31.60
AA1K1-8-10	Fitting -1/2 NPT x 5/8 Hose	10-00917	$55.75
AA1K1-8-12	Fitting -1/2 NPT x 3/4 Hose	10-01925	$74.85
AA1K8-6-8	Fitting -3/8 NPT x 1/2 Hose	10-01926	$83.75
AA1K8-6-10	Fitting -3/8 NPT x 5/8 Hose	10-01147	$74.90
AA1K9-4-6	Fitting -1/4 NPT x 3/8 Hose (A-45O)	10-01927	$39.90
AA1K9-6-10	Fitting -3/8 NPT x 5/8 Hose (A-45O)	10-01928	$48.75
AA1K10-2-4	Fitting -1/8 NPT x 1/4 Hose	10-01929	$52.75
AA1K10-4-4	Fitting -1/4 NPT x 1/4 Hose	10-01930	$71.75
AA1K10-4-6	Fitting -1/4 NPT x 3/8 Hose	10-00918	$33.50
AA1K10-4-8	Fitting -1/4 NPT x 1/2 Hose	10-01932	$56.75
AA1K10-6-10	Fitting -3/8 NPT x 5/8 Hose	10-01933	$58.75
AA1K10-6-12	Fitting -3/8 NPT x 3/4 Hose	10-01934	$131.75
AA1K10-8-12	Fitting -1/2 NPT x 3/4 Hose	10-01935	$112.75
AA1K14-6-6-6	Fitting -3/8 NPT x 3/8 x 3/8 Hose	10-01936	$75.90
AA1K14-10-10	Fitting -5/8 NPT x 5/8 x 5/8 Hose	10-01937	$139.75
AA1K17-4-8-6-4	Fitting -1/4 NPTx1/2x3/8x1/4Hose	10-01938	$217.95
AA1K22-10-10	Fitting -5/8 NPT x 5/8 Hose	10-01148	$111.75
AA1K24-2	Fitting -3/4 Hose Flange	10-01939	$231.95
AA1K30-6-6-4	Fitting -3/8 x 3/8 x 1/4 Hose	10-01940	$103.75
AA1K30-10-6-6	Fitting -5/8 x 3/8 x 3/8 Hose	10-01942	$85.75
AA1K31-4-6-4	Fitting -1/4 NPTx1/2x3/8x1/4 Hose	10-01943	$79.75
AA1K43-10-10	Fitting -5/8 x 5/8 Hose	10-01949	$52.75

PNEUMATIC FILTERS

MODEL	DESCRIPTION	PART NO.	PRICE
AAD9-14-3	Filter	10-00923	$19.70
AAD9-14-5	Filter	10-00924	$19.85
AAD9-18-1	Filter	10-01354	$19.50
AA2J4-4	Filter	10-01946	$36.85
AA2J4-6	Line Mounted Filter	10-01946	$36.85
AA2J4-7	Line Mounted Filter	10-01947	$36.85
AA1J7-1	Gyro Filter Assembly	10-01948	$45.70
AA1J7-2	Gyro Filter Assembly	10-01949	$52.75
ARB3-5-1	Garter Filter	10-01333	$2.84

MISCELLANEOUS PARTS

MODEL	DESCRIPTION	PART NO.	PRICE
82-06768	Coupling	10-01951	$69.85
82-50130B	Flange Gasket	10-01952	$2.65
82-50130BP	Flange Gasket-Package of 10	10-01953	$2.85
82-50195	WIP Plug-New Pumps Only	10-01954	$5.65
82-50195P	WIP Plug-New Pumps Only-Pkg. of 10	10-01955	$4.85
82-50195A	WIP Plug-O/H Pumps Only	10-01958	$8.50
82-50195AP	WIP Plug-O/H Pumps Only-Pkg. of 10	10-01959	$6.80
82-50155DP	LRT Diverter Kit	10-01961	$12.90
AA9144	Prop Governer Gasket	10-01962	$16.50
AAD5-77-1	WIP Plug-O/H Pumps Only-Pkg. of 10	10-01963	$38.50
AAF7-236-1	Aux. Switch 14 Volt DC	10-01964	$343.00
AAF7-236-2	Aux. Switch 28 Volt DC	10-01965	$344.00

NEW VACUUM REGULATORS

MODEL	DESCRIPTION	PART NO.	PRICE
AA1H5-25A	Regulating Valve	10-03457	$480.00
AA2H3-2	Regulating Valve	10-03458	$439.00
AA2H3-5	Regulating Valve	10-03459	$291.95
AA2H3-6	Regulating Valve	10-03460	$406.00
AA2H3-12	Regulating Valve	10-03461	$499.00
AA2H3-23	Regulating Valve	10-03462	$303.00
AA2H3-48	Regulating Valve	10-03463	$426.00

OVERHAULED AIRBORNE SOLENOIDS

MODEL	DESCRIPTION	PART NO.	PRICE
1H15-6	Solenoid	10-01860	$579.00

OVERHAULED AIRBORNE VACUUM MANIFOLDS

MODEL	DESCRIPTION	PART NO.	PRICE
1H5-1	Vacuum Manifold	10-01861	$493.00
1H5-2	Vacuum Manifold	10-01862	$509.00
1H5-3	Vacuum Manifold	10-01863	$559.00
1H5-4	Vacuum Manifold	10-01864	$577.00
1H5-6	Vacuum Manifold	10-01865	$608.00
1H5-8	Vacuum Manifold	10-01866	$636.00
1H5-9	Vacuum Manifold	10-01867	$479.00
1H5-10	Vacuum Manifold	10-01868	$577.00
1H5-13	Vacuum Manifold	10-01869	$792.00
1H5-14	Vacuum Manifold	10-01870	$602.00
1H5-18	Vacuum Manifold	10-01871	$446.00
1H5-19	Vacuum Manifold	10-01872	$893.00
1H5-20	Vacuum Manifold	10-01873	$624.00
1H5-21	Vacuum Manifold	10-01874	$878.00
1H5-22	Vacuum Manifold	10-01875	$685.00
1H5-23	Vacuum Manifold	10-01876	$455.00
1H5-24	Vacuum Manifold	10-01877	$578.00
1H5-25A	Vacuum Manifold	10-03457	$480.00

OVERHAULED AIRBORNE PRESSURE MANIFOLDS

MODEL	DESCRIPTION	PART NO.	PRICE
1H24-3	Pressure Manifold	10-01879	$645.00
1H24-6	Pressure Manifold	10-01880	$711.00
1H24-7	Pressure Manifold	10-01881	$820.00
1H24-8	Pressure Manifold	10-01882	$711.00
1H24-10	Pressure Manifold	10-01883	$674.00
1H24-11	Pressure Manifold	10-01884	$879.00
1H24-12	Pressure Manifold	10-01885	$1,095.00
1H24-18	Pressure Manifold	10-01886	$832.00
1H24-20	Pressure Manifold	10-01887	$1,051.00
$200 CORE CHARGE			

OVERHAULED AIRBORNE CHECK VALVES

MODEL	DESCRIPTION	PART NO.	PRICE
1H37-1	De-Ice Valve	10-01888	$335.00
1H37-3	De-Ice Valve	10-01889	$384.00
1H37-4	De-Ice Valve	10-01890	$345.00
1H43-11	De-Ice Valve	10-01891	$1,575.00
1H43-12	De-Ice Valve	10-01892	$1,600.00
1H43-13	De-Ice Valve	10-01893	$1,361.00
1H43-14	De-Ice Valve	10-01894	$1,516.00
1H43-15	De-Ice Valve	10-01895	$1,349.00
1H43-16	De-Ice Valve	10-01896	$1,301.00
1H43-20	De-Ice Valve	10-01897	$1,759.00
1H43-21	De-Ice Valve	10-01898	$1,659.00
1H44-12	De-Ice Valve	10-01899	$1,528.00
1H44-16	De-Ice Valve	10-01906	$1,444.00
1H44-17	De-Ice Valve	10-01907	$1,946.00
1H44-18	De-Ice Valve	10-01908	$1,946.00
2H22-11	De-Ice Valve	10-01909	$1,204.00
2H22-16	De-Ice Valve	10-01910	$1,829.00
2H48-14	De-Ice Valve	10-01911	$923.00
2H48-22	De-Ice Valve	10-01913	$1,027.00
2H48-23	De-Ice Valve	10-01914	$844.00
2H48-24	De-Ice Valve	10-01916	$1,229.00
2H59-3	De-Ice Valve	10-01917	$1,888.00
2H59-4	De-Ice Valve	10-01919	$2,340.00
2H59-8	De-Ice Valve	10-01920	$1,576.00
2H59-16	De-Ice Valve	10-01921	$2,700.00
$200 CORE CHARGE			

TEMPEST PNEUMATIC COMPONENTS

TEMPEST OVERHAULED AIRBORNE VACUUM REGULATORS

Model	Description	Superseded by
133A2	Overhauled Airborne Vacuum Regulators	2H3-1
133A3	Overhauled Airborne Vacuum Regulators	2H3-2
133A4	Overhauled Airborne Vacuum Regulators	2H3-12
133A6	Overhauled Airborne Vacuum Regulators	2H3-4
133A7	Overhauled Airborne Vacuum Regulators	2H3-7
133A8	Overhauled Airborne Vacuum Regulators	2H3-25
133A13	Overhauled Airborne Vacuum Regulators	2H3-11
133A16	Overhauled Airborne Vacuum Regulators	2H3-16
133A17	Overhauled Airborne Vacuum Regulators	2H3-13
133A18	Overhauled Airborne Vacuum Regulators	2H3-14
133B3	Overhauled Airborne Vacuum Regulators	2H3-6
133B4	Overhauled Airborne Vacuum Regulators	2H3-22
133B5-1	Overhauled Airborne Vacuum Regulators	2H3-8
133B5-2	Overhauled Airborne Vacuum Regulators	2H3-9
133C1	Overhauled Airborne Vacuum Regulators	2H3-5
133C3	Overhauled Airborne Vacuum Regulators	2H3-10

TEMPEST OVERHAULED VACUUM MANIFOLD

Model	Description	Part No.	Price
2H3-1	Vacuum Manifold	10-02970	$946.00
2H3-4	Vacuum Manifold	10-02972	$655.00
2H3-5	Vacuum Manifold	10-02973	$420.00
$200 CORE CHARGE			

TEMPEST OVERHAULED PRESSURE MANIFOLD

Model	Description	Part No.	Price
2H3-7	Pressure Manifold	10-02976	$509.00
2H3-8	Pressure Manifold	10-02977	$509.00
2H3-10	Pressure Manifold	10-02979	$548.00
2H3-11	Pressure Manifold	10-02980	$405.00
2H3-13	Pressure Manifold	10-02982	$708.00
2H3-14	Pressure Manifold	10-02983	$716.00
2H3-15	Pressure Manifold	10-02984	$475.00
$200 CORE CHARGE			

TEMPEST OVERHAULED CHECK VALVE

Model	Description	Part No.	Price
2H3-16	Check Valve	10-03004	$456.00
2H3-19	Check Valve	10-03006	$767.00
2H3-22	Check Valve	10-03007	$548.00
$200 CORE CHARGE			

TEMPEST OVERHAULED DE-ICE VALVE

Model	Description	Part No.	Price
O/H 2H3-20	Overhauled Regulating Valve	10-03399	$577.00
2H3-25	De-Ice Valve	10-03013	$548.00
2H3-27	De-Ice Valve	10-03015	$739.00
2H3-32	De-Ice Valve	10-03017	$596.00
2H3-35	De-Ice Valve	10-03018	$632.00
2H3-38	De-Ice Valve	10-03019	$656.00
2H3-44	De-Ice Valve	10-03022	$767.00
2H3-45	De-Ice Valve	10-03023	$803.00
2H3-46	De-Ice Valve	10-03024	$508.00
2H3-48	De-Ice Valve	10-03025	$514.00
$200 CORE CHARGE			

Due to a shortage of cores Vacuum / Pressure regulators may not be in stock. Customer may need to ship their unit to Aircraft Spruce for overhaul.

TEMPEST OVERHAULED AIRBORNE PRESSURE REGULATORS CROSS-REFERENCE

Model	Description	Superseded by
1H30-1	Overhauled Airborne Pressure Regulators	2H30-1
1H30-2	Overhauled Airborne Pressure Regulators	2H30-2
1H30-3	Overhauled Airborne Pressure Regulators	2H30-3
1H30-6	Overhauled Airborne Pressure Regulators	2H30-6
1H30-8	Overhauled Airborne Pressure Regulators	2H30-8
1H30-9	Overhauled Airborne Pressure Regulators	2H30-9
1H30-11	Overhauled Airborne Pressure Regulators	2H30-11
1H30-13	Overhauled Airborne Pressure Regulators	2H30-13
1H30-14	Overhauled Airborne Pressure Regulators	2H30-14

TEMPEST OVERHAULED PRESSURE REGULATORS

Model	Description	Part No.	Price
2H30-1	Pressure Regulators	10-03029	$510.00
2H30-2	Pressure Regulators	10-03037	$601.00
2H30-3	Pressure Regulators	10-03039	$493.00
2H30-6	Pressure Regulators	10-03042	$625.00
2H30-8	Pressure Regulators	10-03043	$1,146.00
2H30-9	Pressure Regulators	10-03045	$508.00
2H30-11	Pressure Regulators	10-03047	$607.00
2H30-13	Pressure Regulators	10-03053	$571.00
2H30-14	Pressure Regulators	10-03054	$676.00
2H30-17	Pressure Regulators	10-03056	$822.00
2H30-27	Pressure Regulators	10-03057	$496.00
2H30-28	Pressure Regulators	10-03060	$498.00
2H30-32	Pressure Regulators	10-03066	$460.00
$200 CORE CHARGE			

Due to a shortage of cores Vacuum / Pressure regulators may not be in stock. Customer may need to ship their unit to Aircraft Spruce for overhaul.

VACUUM PUMP FITTINGS – VACUUM PUMPS

RAPCO FAA APPROVED FITTINGS

RA1K1-6-10 - This 90° fitting with 5/8" hose and 3/8" NPT is used in most inlet threaded ports of 200 series vacuum pumps and is a FAA PMA direct replacement for the Airborne Model 1K1-6-10. This 90° fitting has superior flow and low pressure loss.
P/N 10-00395 .....$38.50

RA1K8-6-10 - This 152° fitting with 5/8" hose and 3/8" NPT is used in most outlet threaded ports of 200 series vacuum pumps and is a FAA PMA direct replacement for the Airborne. P/N 10-00396.....$56.75

RA1K31-4-6-4 - This 3/8" and 1/4" hose, 1/4" NPT, "T" fitting is used in most threaded ports of the flight instruments and is a FAA PMA direct replacement for the Airborne Model 1K31-4-6-4. P/N 10-00397 ..... $45.50

RA1K10-4-6 - This 3/8" hose, and 1/4" NPT fitting is used in most inlet threaded ports of the flight instruments and is a direct replacement for the Airborne Model 1K10-4-6. .....
P/N 10-00398 $38.50

RA1K10-6-10 - This fitting with 5/8" hose and 3/8" NPT is used in most inlet and outlet threaded ports of the 200 series vacuum pump. The fitting is 5/8" hose with 3/8" NPT threads. The Rapco, Inc. fitting is a FAA PMA direct replacement for the Airborne Model 1K10-6-10..
P/N 10-01849..... $38.85

RA1K1-4-6 - This 90° fitting with 3/8 hose, 1/4" NPT is used in most threaded ports of the flight instruments and is a FAA PMA direct replacement for the airborne. P/N 10-01130.....$39.50

RAPCO RA-1H5-1 MANIFOLD CHECK VALVE

This valve is used in many Multi-Engine General Aviation applications. The Rapco, Inc. FAA PMA Multi-Engine manifold check valve is a direct replacement for the Airborne Model 1H5-1.
P/N 10-01131 ..... $737.00

AIRBORNE VACUUM PUMP REPAIR KITS

Basic Kits – These FAA/PMA kits include rotor, vanes,gasket, and drive coupling.
For Airborne 211/212 Pumps
P/N 10-00901 .....$98.75
For Airborne 200 cc/cw Pumps
P/N 10-00902 .....$99.85
For Airborne 241/242 Pumps ..... P/N 10-00903 .....$96.50
For Airborne 441/442 Pumps ..... P/N 10-01001 ..... $149.95
Deluxe Kits – These FAA/PMA kits include rotor, coupler, external spline, bushing, blades, nut, cushion washer and band gaskets. Washer and gaskets not included on 200CC kits. Installation instructions included.For Airborne 211/212 pumps..... P/N 10-01901 ..... $147.00
For Airborne 241/242 pumps..... P/N 10-01903 ..... $187.95
For Airborne 441/442 pumps..... P/N 10-01904 ..... $209.95

PUMP STATOR HOUSINGS

215/216 Pump Stator Housing
82-50122A
P/N 10-00919..... $79.85
$15.00 Core Charge
241/242 Pump Stator Housing
82-50122-1
P/N 10-00920.....$108.95
$35.00 Core Charge
441/442 Pump Stator Housing 82-50122-2
P/N 10-00921.....$287.95
$15.00 Core Charge

RAPCO VACUUM SYSTEM KIT

This Vacuum System Kit is ideal for use on experimental aircraft, allowing the kit builder to obtain all of the necessary components of their vacuum system in one convenient kit. The price of this kit reflects a substantial discount over the individual prices of the components if purchased separately.

This Kit Includes:
- 1 RA215CC Vacuum Pump w/Gasket
- 1 RA2H3-12 Vac. Regulator w/Garter Filter
- 1 RA-IJ7-1 FilterAssembly
- 1 RA1K1-6-10 90° 5/8" Fitting
- 1 RA1K8-6-10 152° 5/8" Fitting
- 2 RA1K31-4-6-4 3/8" and 1/4" T-Fitting
- 2 RA1K10-4-6 3/8" Fitting
- 1 - 5/8" x 3' Hose
- 1 - 3/8" x 5' Hose
- 1 - 1/4" x 6' Hose
- 10 - #8 Hose Clamps
- 4 - #4 Hose Clamps
- 1 Installation Diagram
- 1 Suction Gauge

Kit with RAP215CC Pump - For engines with COUNTER CLOCKWISE turning accessory drives. .....P/N 11-00099..... $735.00

Kit with RAP216CW Pump - For engines with CLOCKWISE turning accessory drives.....P/N 06-00635 ..... $735.00

Kit Without Pump.....P/N 10-02010 ..... $741.00

GARWIN / PESCO REMANUFACTURED WET PUMPS

Our supplier remanufactures run-out Pesco and Garwin wet pumps to factory specifications. FAA Approved.

Note: Pump Drive is included.
Pesco 194 pump ..... P/N 10-00028 ..... $476.00
Pesco 207 pump ..... P/N 10-00029 ..... $579.00
Garwin G455 pump P/N 10-00027..... $479.00
Garwin G450 pump P/N 10-00026..... $479.00

Add $150.00 core charge to purchase price. Like cores in repairable condition may be returned to Aircraft Spruce West for full core credit. Return cores via UPS and reference invoice number.

AIRWOLF 3P194-AFC WET VACUUM PUMP

The Airwolf 3P194-F pump incorporates new manufacturing techniques, employs superior bearings to those found in dry pumps, an dis machine to extremely tight tolerances. Replaces all 211/212, 215/216, 242/244 Series Airborne / Champion / Rapco / Tempest / Dry Vacuum Pumps, Pesco 3P194-F Garwin G-455 Wet Vacuum Pumps & Sigma Tek 1U128-006 Dry Vacuum Pumps, regardless of direction of pump rotation. This pump works on ALL aircraft that do not have deice boots. Comes with a 2,000 hr, 10 year warranty Airwolf Factory Warranty. $100.00 Core charge applies.
P/N 10-00707.....$1,599.00

VACUUM RESTRICTOR VALVE

AN5829-2 manually adjustable needle valve complete with locking collar and mounting flange. For reducing vacuum to 2" Hg for operation of turn/bank. Manufactured by ACS Products Co.....P/N AN5829-2..... $23.65

IN

VACUUM PUMPS

RAPCO DRY AIR PUMPS - VACUUM / PRESSURE

RAPCO FAA approved quality dry air pumps are available in brand new replacement models or overhauled. All are backed by warranty.

BRAND NEW RAPCO DRY AIR PUMPS are FAA-PMA approved and come with an inspection port to help determine replacement time. An exclusive internal shaft seal helps to keep out destructive oil and solvents. Mounting gasket included. Warranty period for 200 series is three year 1300 hours, 240 and 400 series is 1 year 500 hours, whichever comes first. No core charge on new pumps. Core rebate available.

Rapco New Dry Air Vacuum Pumps

Description	Rapco Part Number	Our Part Number	Price
RAP215CC New Rapco Pump	RAP215CC	10-23925	$308.00
RAP215CC-9 New Rapco Pump	RAP215CC-9	10-03401	$305.00
RAP216CW New Rapco Pump	RAP216CW	10-23935	$308.00
RAP241CC New Rapco Pump	RAP241CC	10-23950-1	$509.00
RAP241CC-13 New Rapco Pump	RAP241CC-13	10-03447	$509.00
RAP241CC-15 New Rapco Pump	RAP241CC-15	10-03448	$509.00
RAP242CW New Rapco Pump	RAP242CW	10-23960-1	$499.00
RAP242CW-4 New Rapco Pump	RAP242CW-4	10-03449	$509.00
RAP242CW-10 New Rapco Pump	RAP242CW-10	10-03450	$509.00
RAP441CC New Rapco Pump	RAP441CC	10-01126	$747.00
RAP441CC-3 New Rapco Pump	RAP441CC-3	10-03074	$719.00
RAP441CC-7 New Rapco Pump	RAP441CC-7	10-03075	$742.00
RAP441CC-9 New Rapco Pump	RAP441CC-9	10-03076	$737.00
RAP441CC-17 New Rapco Pump	RAP441CC-17	10-03077	$742.00
RAP441CC-23 New Rapco Pump	RAP441CC-23	10-03078	$739.00
RAP442CW New Rapco Pump	RAP442CW	10-01127	$742.00
RAP442CW-4 New Rapco Pump	RAP442CW-4	10-03079	$742.00
RAP442CW-6 New Rapco Pump	RAP442CW-6	10-03080	$742.00
RAP442CW-8 New Rapco Pump	RAP442CW-8	10-03081	$742.00
RAP442CW-12 New Rapco Pump	RAP442CW-12	10-01128	$764.00
RAP442CW-14 New Rapco Pump	RAP442CW-14	10-03082	$742.00
RAP442CW-20 New Rapco Pump	RAP442CW-20	10-03083	$737.00

OVERHAULED DRY AIR PUMPS by RAPCO are FAA approved and shipped with FAA form 8130-3. Mounting gasket included. Warranty period for 200 series is two years 1000 hours, 240 and 400 series is one year 400 hours, whichever comes first.

Rapco Overhauled Dry Air Vacuum Pumps

Description	Rapco Part Number	Our Part Number	Price
211CC Overhauled Pump	211CC	10-23930	$209.95
211CC-9 Overhauled Pump	211CC-9	10-23931	$213.95
212CW Overhauled Pump	212CW	10-23940	$209.95
215CC Overhauled Pump	215CC	10-03084	$212.95
216CW Overhauled Pump	216CW	10-03085	$212.95
241CC Overhauled Pump	241CC	10-23950	$389.00
241CC-13 Overhauled Pump	241CC-13	10-03086	$389.00
241CC-15 Overhauled Pump	241CC-15	10-03087	$389.00
242CW Overhauled Pump	242CW	10-23960	$405.00
242CW-4 Overhauled Pump	242CW-4	10-03088	$389.00
242CW-10 Overhauled Pump	242CW-10	10-03089	$389.00
441CC Overhauled Pump	441CC	10-02349	$509.00
441CC-3 Overhauled Pump	441CC-3	10-03090	$509.00
441CC-7 Overhauled Pump	441CC-7	10-03091	$538.00
441CC-9 Overhauled Pump	441CC-9	10-03092	$509.00
441CC-11 Overhauled Pump	441CC-11	10-03093	$509.00
441CC-17 Overhauled Pump	441CC-17	10-03095	$509.00
441CC-23 Overhauled Pump	441CC-23	10-03096	$509.00
442CW Overhauled Pump	442CW	10-02350	$509.00
442CW-4 Overhauled Pump	442CW-4	10-03097	$509.00
442CW-6 Overhauled Pump	442CW-6	10-03098	$509.00
442CW-8 Overhauled Pump	442CW-8	10-03099	$509.00
442CW-10 Overhauled Pump	442CW-10	10-03101	$509.00
442CW-12 Overhauled Pump	442CW-12	10-02351	$536.00
442CW-14 Overhauled Pump	442CW-14	10-03102	$509.00
442CW-16 Overhauled Pump	442CW-16	10-03103	$509.00
442CW-18 Overhauled Pump	442CW-18	10-03104	$509.00
442CW-20 Overhauled Pump	442CW-20	10-03105	$509.00

Add Core Charge to purchase price of Overhauled models. 200 Series $100.00, 400 Series $200.00 To receive core credit return repairable Rapco or Airborne aluminum cores to Aircraft Spruce West via UPS and reference invoice number.

RAPCO VACUUM PUMP REMOVAL & INSTALLATION TOOL

The RA716 Pump Wrench provides superior access to the vacuum pump flange nuts. This new tool is made from quality hardened steel with corrosion resistant nickel plating. The shank is shaped to provide easy access to tight areas between the pump and accessories. The open end head is laser cut providing a close tolerance fit on the nut. Plastic coating on the handle provides a firm grip ..... P/N 10-13911 .... $24.50

SIGMA-TEK DRY AIR PUMP

The Sigma-Tek 1U128-006 is a pump which carries a warranty for 2-years or 1000 hours. It uses an aluminum rotor and rotor housing, making the pump very resistant to damage from ingestion of foreign objects, excessive loads or engine oil. It provides clean, dry air for operation of air driven instruments in aircraft operating at medium altitudes. Pump rotates clockwise or counterclockwise in vacuum or pressure mode. May be mounted in either a vertical or horizontal position. FAA approved as a direct replacement for all instrument pumps but is not intended for supplying air to deicing boots. Mounting gasket furnished. Install suction regulator in line to instruments. Delivers 6 In. Hg vacuum (2.9-8.5 minimum CEM) or 6 In. Hg pressure (3.7-8.5 minimum CEM) from 1500 to 4000 RPM. No core charge. P/N 10-02778 ..... $599.00

RAPCO STANDBY PNEUMATIC CLUTCH REPLACEMENTS

400 Series replacement clutches for Rapco standby pneumatic systems are available in 12 volt or 24 volt.

Description	Description	Price
12 Volt Standby Clutch RA400-1200	10-02656	$695.00
24 Volt Standby Clutch RA400-2400	10-05208	$695.00

AIR POWER REMANUFACTURED DRY AIR PUMP

Ais Power overhaul facility which remanufactures run-out Airborne vacuum pumps to factory specifications. Warranty on 211/212 series pumps is 1-year/1000 hours and on 240/440 series pumps warranty is 1-year/400 hours. Weight: 211/212/240 series= 3 lbs.; 441/442 series = 4 lbs.

Description	Part No.	Price
215cc pump	10-00068	$221.95
216cw pump	10-00069	$221.95
241cc pump	10-00070	$309.00
242cw pump	10-00071	$299.00
441cc pump	10-00072	$368.00
442cw pump	10-00073	$369.00
211CC	10-01136	$214.00
241CC-13	10-01139	$324.00
441CC-7	10-01141	$559.00
441CC-17	10-01142	$389.00
442CW-4	10-01143	$389.00
442CW-6	10-01144	$389.00
442CW-8	10-01145	$389.00

Call for RMA before sending pump to Aircraft Spruce West for overhaul.

VACUUM PUMP SHEAR COUPLINGS

These parts fit Airborne 200 & 400 series pumps.

Shear Coupling ..... P/N 82-0067 ..... $16.90 ea
Standard Bushing ..... P/N 82-20095 ..... $16.65 ea

VACUUM PUMP RETAINING NUT TOOL

This tool efficiently places the retaining nuts on the vacuum pump mounting studs on Lycoming engines, saving time and frustration for the aircraft mechanic. Use this tool to start the nuts on the studs, and complete the operation using the Rapco wrench (10-13911). Made in the U.S.A. P/N 10-01052 ..... $30.50

TEMPEST VACUUM FILTERS

FAA-PMA Approved

ARB3-5-1 ..... P/N 10-00922 ..... $2.84
AAD9-14-3 ..... P/N 10-00923 ..... $19.70
AAD9-14-5 ..... P/N 10-00924 ..... $19.85
AAD9-18-1 ..... P/N 10-00937 ..... $19.50

TEMPEST VACUUM PUMP WRENCH

Case hardened steel, with nickel-chrome plating for corrosion resistance. Slip resistant vinyl grip. Rare earth magnet allows efficient and easy installation of hard-to-get-to install nuts. Eligibility: Fits all 200, 240, 400 and 3200 series vacuum pumps ..... P/N 10-02654 ..... $25.75

IN

SUCTION REGULATORS – PNEUMATIC FILTERS

PARKER SUCTION REGULATOR

Constructed of lightweight aluminum. Large air passages minimize the pressure drop through the valve. Valve chatter is virtually eliminated by pneumatically balancing the regulating diaphragm. The simple but effective polyurethane garter filter protects the air pump and may be easily replaced. Beaded hose fittings simplify installation and eliminate expensive AN fittings which unnecessarily restrict air flow.

Has 5/8" x 3/8" Ports (45° elbow) ..... P/N 10-02102 .....$1,256.00
Has 5/8" x 3/8" Ports (Straight)..... P/N 10-03423 ..... $795.00
Replace. Filter (replace after 100 hrs operation) ..... P/N B3-5-1 ..... $2.84

RAPCO REPLACEMENT PARTS

Description	RAPCO #	Spruce #	Price
Pressure System Inlet Filter	62-1110	10-05209	$44.90
Pneumatic Pressure Switch	MPL601-3	10-05211	$31.50
Pneumatic Vacuum Switch - Open	77342	10-05212	$67.75
Pneumatic Vacuum Switch - Closed	77343	10-05213	$67.75
Pneumatic Check Valve	AV-7	10-05214	$44.90
Replacement LAP & Socket 12V	1090C5-12V	10-05216	$18.70
LAP & Socket 24V	1090C5-24V	10-05218	$18.70
Circuit Breaker 3AMP	ETA41-060P30	10-05219	$40.50

RAPCO PNEUMATIC REGULATORS

RAPCO RA2H3-2 FAA-PMA APPROVED VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), 1/2" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-2, 133A3, Aero Accessories PN. 2H3-2
P/N 10-03895 .....$247.95

RAPCO RA2H3-5 FAA-PMA APPROVED VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-5, 133C1, Aero Accessories PN. 2H3-5
P/N 10-03894 .....$249.95

RAPCO RA2H3-6 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-6, 133B3, Aero Accessories PN. 2H3-6, Piper PN. 584-324.....
P/N 10-03918 .....$249.95

RAPCO RA2H3-11 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. Two AN-8 Threaded Fittings (Thread OD 7/8"). Replaces - Airborne PN. 2H3-11, 133A13 P/N 10-03919 .....$688.00

RAPCO RA2H3-12 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), Two 3/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-12, 2H3-16, 133A16, Cessna PN. C482001-0401
P/N 10-00289.....$253.95

RAPCO RA2H3-15 VACUUM REGULATOR - This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. One AN-8 Threaded Fitting (Thread OD 7/8"). Replaces - Airborne PN. 2H3-15
P/N 10-04842 .....$688.00

RAPCORA2H3-19VACUUMREGULATOR- This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump),Two 3/8" Hose Fittings (Instrument)Replaces – Airborne PN.2H3-19, Piper PN. 492-240
P/N 10-04780 .....$492.00

RAPCORA2H3-23VACUUMREGULATOR- This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. 5/8" Hose Fitting (Pump), Two 3/8" Hose Fitting (instruments). Replaces - Airborne PN. 2H3-23, 133A4, Piper PN. 492-272
P/N 10-03009 .....$251.95

RAPCORA2H3-48VACUUMREGULATOR- This FAA Approved Rapco vacuum regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. Vacuum regulators come with the RAB3-5-1 garter filter. AN-8 Threaded Fitting, Thread OD 7/8" (Pump), 5/8 Hose Fitting (instrument) Replaces - Airborne PN. 2H3-48, Aero Accessories PN. AA2H3-48
P/N 10-03921 .....$279.95

RAPCORA2H30-6PRESSUREREGULATOR - This FAA Approved Rapco pressure regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. 3/4" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 1H30-6, 2H30-6, Piper PN. 492-243
PN 10-04234.....$281.95

RAPCORA2H30-9PRESSUREREGULATOR- This FAA Approved Rapco pressure regulator is designed to maintain a constant setting at various pressure altitudes. Adjustable setting. 5/8" Hose Fitting (Pump), 5/8" Hose Fitting (instruments). Replaces - Airborne PN. 1H30-9, 2H30-9 P/N 10-03147 .....$281.95

TEMPEST VACUUM REGULATORS

FAA/PMA Approved

AA 2H3-2.....P/N 10-03458 ..... $439.00
AA 2H3-6.....P/N 10-03460 ..... $406.00
AA 2H3-12 .....P/N 10-03461 ..... $499.00
AA 2H3-23 .....P/N 10-03462 ..... $303.00

RAPCO REPLACEMENT PNEUMATIC FILTERS

Aircraft Spruce offers RAPCO FAA-PMA approved filter replacements for Airborne assemblies. Destructive contamination abounds within an aircraft environment. Without proper filtration, system dirt and dust from the cabin as well as cigarette smoke will take its toll. This results in the replacement of expensive gyro instruments and other components. Your operating costs can be significantly reduced when filters are changed on a scheduled basis. RAPCO in-line and central filters are constructed to the highest industry standards. They utilize a 0.3 micron filtration media which provides superior filtration without undue air flow restriction. As a RAPCO distributor, Aircraft Spruce offers these replacement filters at exceptionally low prices.

Description	Recomended Replacement	OEM Number	RAPCO Number	Part No.	Price
Line Mounted Filter, 1/2"x1/2" Tube	1 yr / 500 Hrs	1J4-4	RA 1J4-4	10-23810	$29.95
Line Mounted Filter, 5/8"x5/8" Tube	1 yr / 500 Hrs	1J4-6	RA 1J4-6	10-23820	$31.75
Line Mounted Filter, 5/8"x5/8" Tube Overall length 5-1/2"	1 yr / 500 Hrs	1J4-7	RA 1J4-7	10-23830	$30.65
Vacuum Central Gyro Air Filter Assy	1 yr / 500 Hrs	1J7-1	RA 1J7-1	10-23840	$29.95
Line Mounted Filter - 3/8" x 3/8"	1 yr / 500 Hrs	110-1	RA1J10-1	10-00287	$31.50
Vacuum Pump Inlet Garter Filter	1 yr / 100 Hrs	B3-5-1	RA B3-5-1	10-23850	$2.25
Replacement Element, 1J2-2 filter	1 yr / 100 Hrs	D9-14-3	RA D9-14-3	10-23860	$19.50
Rep. Element for1J2 series (except 1J2-2)	1 yr / 100 Hrs	D9-14-5	RA D9-14-5	10-23870	$17.80
Replacement Element, 1J7-1 Filter	1 yr / 500 Hrs	D9-18-1	RA D9-18-1	10-23880	$18.50

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRBORNE CENTRAL AIR FILTERS

Increase gyro life with Airborne gyro air filter. Incorporates a 0.3 micron filter element that protects gyro instruments by filtering out tobacco smoke and cabin dust. Small, lightweight, easily installed. Fits most planes. Dual 3/8" beaded tubes simplify 2-gyro installations.

Part No.	Description	Price
1J7-1	Vacuum Instrument Central Gyro Air Filter: 0.3 micron pleated paper element with two 3/8" installation tubes.	$65.80
B3-5-1	Vacuum relief & pump inlet foam garter filter: Foam	$2.84
D9-14-5	Replacement element used in Airborne 1J2 Series Inlet filter (except 1J2-2)	$42.50
D9-14-3	Replacement element used in Airborne 1J2-2.	$19.50
D9-18-1	Replacement Filter for Airborne1J7-1 Gyro filter Assy.	$18.50
1J10-1	Line mounted Filter 3/8"x3/8" non-beaded tube.5-3/4"long.	$57.75

CLEAR VIEW INLINE AIR FILTER

The CV1J4 "Clear View" Inline air filter was created in reply to comments from aircraft owners concerning the expensive practice of changing the old 1J4-6 and 1J4-7 metal can filters based on time requirements rather than necessity.

The CV1J4 "Clear View Filter" is FAA approved on a "Change Only As Needed" basis.

FAA-PMA Approved For Installation On The Following Aircraft:

Cessna & Piper Single Engine that utilize Vacuum to operate their gyro instruments,

see "Application Tab"

Piper Twin Engine the basic CV1J4 Inline Air Filter is also approved for installation on the following:

PA-31, PA-31P, PA-31-300, PA-31-310, PA-31-325, PA-31-350, PA-31P-350, PA31T2 and model PA-34-200T

Beechcraft Single Engine that utilize pressure gyro instruments: F33, F33A, F33C, G33, V35B, 36, A36, A36TC, and B36TC

Beechcraft Twin Engine that utilize pressure gyro instruments and are provided with wing pneumatic

de-icing boots: 95-B55, D55, E55, 56TC, A56TC, 58, 58P, 58TC, B60, A65, 70, 76 and 65-B80

Socata, S.A.: (formally Gulfstream, formally Grumman) GA-7

Mooney: M20J, M20K and M20M

Twin Commander: 700 P/N 10-00450..... $68.95

INLINE AIR FILTER KIT FOR CESSNAS

This FAA-PMA approved kit includes a CV1J4 clear view filter, necessary hardware, a copy of the STC and detailed instructions for smooth installations. An adhesive backed label is provided for recording kit installation data in aircraft log books.

P/N 10-00451..... $99.75

Model	Year	A/C Serial No.
150K, L, M	1970-1977	15071129 to 15079405
A150K, L, M	1970-1977	A1500001 to A1500734
152	1978-1985	15279046 to 15286033
A152	1978-1985	A1520735 to A1521049
172 I, K, L, M, N, P, Q	1968-1985	17256513 to 17276516
R172K	1977-1961	R1722000 to R1723454
172RG	1980-1985	172RG0001 to 172RG1191
177, A, B	1968-1978	17700001 to 17702752
177RG	1971-1978	177RG0001 to 177RG1366
182R	1985-1986	18268435 to 18268615
T182	1981-1985	18267716 to 18268541
R182	1983-1986	R18201929 to R18202041
TR182	1983-1986	R18201929 to R18202041

INLINE AIR FILTER KIT FOR PIPERS

Similar to kit for Cessnas above. FAA approved for most PA-28 and all PA-38. P/N 10-00452.....$99.75

INLINE AIR FILTER KIT FOR BEECH, GULFSTREAM, MOONEY, COMMANDER

Beechcraft Single Engine that utilize pressure gyro instruments: F33, F33A, F33C, G33, V35B, 36, A36, A36TC, and B36TC

Beechcraft Twin Engine that utilize pressure gyro instruments and are provided with wing pneumatic

de-icing boots: 95-B55, D55, E55, 56TC, A56TC, 58, 58P, 58TC, B60, A65, 70, 76 and 65-B80

Socata, S.A.: (formally Gulfstream, formally Grumman) GA-7

Mooney: M20J, M20K and M20M

Twin Commander: 700 P/N 10-00450.....$68.95

UMA 1" GYRO SUCTION GAUGES

Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-02361	3-7 IN.HG	B & W	$147.75
10-00311	3-7 IN.HG	GA 4.5-5.4	$160.95
10-02464	3-7 IN.HG	GA 3.5-5.0, RR 3.5 & 5.0	$156.75

UMA 1-1/4" GYRO SUCTION GAUGES

Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-01010	3-7 IN. HG.	GA 4.5-5.2, RR 4.5 & 5.2	$167.75
10-02465	3-7 IN. HG.	GA 4.75-5.25, RR 4.75 & 5.25	$182.75
10-02466	3-7 IN. HG.	GA 4.5-5.0	$182.75
10-02467	2-6 IN. HG.	GA 3.8-4.4, RR 3.8 & 4.4	$182.75
10-02358	3-7 IN. HG.	B & W	$182.75
10-02468	2-6 IN. HG.	GA 4.0-5.0	$182.75
10-02469	2-6 IN. HG.	GA 4.5-5.4, YA 2.0-4.5, RR 6.0	$182.75
10-02470	2-6 IN. HG.	GA 3.5-5.0, RR3.5	$183.75
10-02471	0-10 IN. HG.	B & W	$182.75

UMA 2-1/4" UMA GYRO SUCTION

Case: Cast Aluminum. Weight: 4.7 oz.

Part No.	Range	Dial Markings	Price
10-00090	2-8 IN. HG.	GA 4.6-5.4	$188.75
10-01000	0-10 IN. HG.	B & W	$176.75
10-02359	0-10 IN. HG.	GA 4-5, RR 5	$178.75
10-02360	0-10 IN. HG.	GA 4.2-4.4, RR 4.2 & 5.3	$187.75

UMA 1-1/4" PNEUMATIC PRESSURE

Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-02364	0-25 PSI	GA 5.0-10, YA 10-21	$238.95
10-02365	0-25 PSI	GA 15-21, YA 21-25, RR 14.9	$238.95
10-12305	0-25 PSI	GA 15-21, RR 24	$238.95
10-02366	0-25 PSI	GA 2.5-7.5, YA 7.5-21	$238.95

VARGA 1" INCH ROUND SUCTION GAUGE

Miniature 1" round case instrument. Used in many production aircraft. A real space saver.

P/N 10-01100..... $109.75

FOR EXPERIMENTAL AIRCRAFT ONLY.

NOT FAA APPROVED

1-1/4 INCH GYRO PRESSURE GAUGE

These units are designed to save space in cockpit panels. These gauges utilize an internal diaphragm for accuracy and reliability. Miniature 1-1/4" instrument. Case: Molded ABS Plastic. Weight: 1.4 oz.

Part No.	Range	Dial Markings	Price
10-01105	3-7 IN. HG.	GA 4.25-6.25	$183.75
10-02462	3-7 IN. HG.	GA 4.25-5.2, RR 4.25 & 5.2	$183.75
10-02463	3-7 IN. HG.	GA 4.5-5.2, YA 3.8-4.5, RR 3.8 & 5.2	$183.75

UMA 2-1/4" GYRO PRESSURE GAUGES

These units are designed to save space in cockpit panels. These gauges utilize an internal diaphragm for accuracy and reliability. Case: Cast Aluminum. Weight: 4.7 oz.

Part No.	Range	Dial Markings	Price
10-02362	2-8 IN. HG.	B & W	$175.00
10-02363	2-8 IN. HG.	GA 4.5-5.5	$188.75

UMA 2-1/4" CABIN ALTITUDE DIFFERENTIAL PRESSURE GAUGE

Case: Valox 420 Plastic Weight: 7.4 oz.

Part No.	Range	Daial Markings	Price
10-02370	0-25,000 Ft. 0-6 PSI	B & W	$529.00
10-02371	0-30,000 Ft. 0-6 PSI	GA 0-10, YA 10-28	$529.00
10-02460	0-30,000 Ft. 0-6 PSI	GA 0-10, YA 10-28	$529.00
10-02461	0-35,000 Ft. 0-8 PSI	B & W	$529.00

IN

AIRSPEED INDICATORS

UMA AIRSPEED INDICATORS (NON-TSO'D)

These quality UMA, non-TSO'd airspeed indicators are available in MPH, Knots or Dual Scales.
Note: An inverter is required for the Internal Lighting Option (P/N 10-02083 UMA 14V LIGHT INVERTER)

Description	Dial	Part No.	Price
3-1/8"	20-80 mph	10-04905	$184.99
3-1/8"	20-100 mph	10-04910	$193.75
3-1/8"	20-120 mph	10-04915	$193.75
3-1/8"	20-140 mph	10-04920	$199.95
3-1/8"	20-160 mph	10-04925	$195.95
3-1/8"	40-180 mph	10-04930	$193.75
3-1/8"	40-200 mph	10-01029	$193.75
3-1/8"	40-240 mph	10-00512	$192.75
3-1/8"	40-260 mph	10-01030	$193.75
3-1/8"	40-280 mph	10-01031	$193.75
3-1/8"	40-300 mph	10-01032	$193.75
3-1/8"	20-80 Knots	10-01033	$193.75
3-1/8"	20-100 Knots	10-01034	$193.75
3-1/8"	20-120 Knots	10-04950	$193.75
3-1/8"	20-140 Knots	10-04955	$206.95
3-1/8"	20-160 Knots	10-01035	$204.95
3-1/8"	40-180 Knots	10-04965	$180.85
3-1/8"	40-200 Knots	10-04970	$184.99
3-1/8"	40-240 Knots	10-00514	$193.75
3-1/8"	40-260 Knots	10-01036	$193.75
3-1/8"	40-280 Knots	10-01037	$193.75
3-1/8"	40-300 mph	10-01038	$193.75
3-1/8" Dual	20-140 mph/20-120 Knots	10-00511	$205.95
3-1/8" Dua	40-160 mph/20-135 Knots	10-02200	$195.80
3-1/8" Dual	40-180 mph/20-150 Knots	10-02300	$212.95
3-1/8" Dual	40-200 mph/40-170 Knots	10-02400	$205.95
3-1/8" Dual	40-240 mph/40-205 Knots	10-02600	$212.95
3-1/8" Dual	40-260 mph/40-225 Knots	10-01039	$212.95
3-1/8" Dual	40-300 mph/40-250 Knots	10-01040	$212.95
3-1/8" Dual	40-350 mph/40-300 Knots	10-01041	$212.95
3-1/8" Dual	40-260 Knots/50-300 mph	10-01042	$212.95
3-1/8" Dual	40-300 Knots/40-340 mph	10-01043	$212.95
Range Markings	UMA Range Markings on NON-TSO Units	10-02792	$125.00

UMA 3-1/8" AIRSPEED INDICATORS (TSO'd)

These quality UMA airspeed indicators are available in MPH, Knots or Dual Scales.

3-1/8" TSO'd Single Scale	Part No.	Price
40-160 MPH	10-03250	$514.00
40-180 MPH	10-03251	$522.00
40-200 MPH	10-03252	$489.00
40-240 MPH	10-03253	$522.00
40-260 MPH	10-03254	$522.00
40-280 MPH	10-03255	$522.00
40-300 MPH	10-03256	$522.00

3-1/8" TSO'd Dual Scale	Part No.	Price
40-160 MPH/ 40-135 Knots	10-03270	$522.00
40-180 MPH/ 40-150 Knots	10-03271	$514.00
40-200 MPH/ 40-170 Knots	10-03272	$498.00
40-240 MPH/ 40-205 Knots	10-03273	$543.00
40-260 MPH/ 40-225 Knots	10-03274	$524.00

3-1/8" NOT TSO'd Single Scale	Part No.	Price
40-160 Knots	10-03257	$522.00
40-180 Knots	10-03258	$522.00
40-200 Knots	10-03259	$522.00
40-240 Knots	10-03260	$522.00
40-260 Knots	10-03261	$522.00
40-280 Knots	10-03262	$522.00
40-300 Knots	10-03263	$522.00

3-1/8" NOT TSO'd Dual Scale	Part No.	Price
40-240 MPH/ 40-205 Knots	10-03276	$522.00
50-270 MPH/ 40-240 Knots	10-03277	$522.00
50-300 MPH/ 40-260 Knots	10-03278	$522.00
Outside/Inside Scale: 300 Knots	10-03279	$522.00
40-300 MPH/ 40-250 Knots	10-03275	$522.00

UMA 2-1/4" MINIATURE AIRSPEEDS

A fine quality instrument of new manufacture for the exceptional homebuilt aircraft. Matte-white dial markings. Fits standard 2-1/4" instrument panel opening. Space saving dims: 2-3/8"x2-3/8"x3.25"L. All ranges available in knots.

Range	P/N	Range	P/N	Range	P/N
20-100 MPH	10-03992	40-160 MPH	10-03996	40-240 MPH	10-04000
20-120 MPH	10-03993	40-180 MPH	10-03997	40-260 MPH	10-04001
20-140 MPH	10-03994	40-200 MPH	10-03998	40-300 MPH	10-04002
0-120 Knot	10-03995	40-140 Knot	10-00507	40-160 Knot	10-01787
40-180 Knot	10-00508	40-200 Knot	10-00509	40-240 Knot	10-00510
ALL MODELS.....$214.95					

UNITED AIRSPEED INDICATORS (TSO'D)

These 8000 series United airspeeds are TSO'd for instalation on certificated aircraft. Factory new. Available in dual scale MPH/knots, or in MPH or knots only. Fits standard 3-1/8" panel hole. Wt: 0.7 lb. Not Lighted.

Range	Part No.	Price
40-200mph/40-170kts	10-00190	$646.00
0-250mph/40-200 kts	10-00191	$659.00
40-300mph/40-260 kts	10-00192	$665.00
0-260 knots	10-00201	$665.00
0-170 knots	10-00198	$665.00

Available with custom range marks..... P/N 10-02614 .....$215.95

LIGHTED UNITED AIRSPEEDS

Add -1 to P/N's above for internally lighted airspeed indicators.
For an additional $128.00

UNITED TRUE AIRSPEED INDICATORS

The true airspeed indicator corrects the indicated airspeed for changes in temperature and pressure encountered as aircraft changes altitude. By aligning outside temperature and pressure altitude with setting knob, movable airspeed scale is rotated proper amount so pointer registers true airspeed. Factory new 8100 series by United. TSO'D for certificated aircraft. Dual scale. Not Lighted. Add $215.95 for custom range marks & specify exact range marks needed.

Series	Range	Part No.	Price
8100	0-200mph/170kt	10-00203	$724.00
8125	0-250mph/215kt	10-00204	$729.00
8100	40-170 Knots	10-00216	$729.00
8125	0-200mph/170kt	10-00217	$729.00
8130	0-260 Knots	10-00218	$729.00
8140	60-350 Knots	10-00219	$745.00

LIGHTED UNITED AIRSPEEDS

Add -1 to P/N's above for internally lighted airspeed indicators.

Dual Scale (MPH/Knots) with multicolor markings

UMA 2-1/4 TSO'D AIRSPEED INDICATORS

UMA indicators are FAA TSO'd to C2d specifications. Installable in a fixed wing aircraft with a reciprocating or Turboprop Engine. Must be installed in a temperature controlled environment from -55 to +85 °C, to a max altitude of 25,000 ft. UMA offers indicators with full scale ranges available, from 160 to 300 in MPH or Knots.

UMA Part NO.	Range	Part No.	Price
T16-210-121	20-120 MPH	10-03577	$542.00
T16-211-121	20-120 Knots	10-03578	$542.00
T16-210-141	20-140 MPH	10-03579	$542.00
T16-211-141	20-140 Knots	10-03580	$542.00
T16-210-142	30-140 MPH	10-03582	$542.00
T16-211-142	30-140 Knots	10-03583	$542.00
T16-210-160	40-160 MPH	10-03584	$495.00
T16-211-160	40-160 Knots	10-03585	$542.00
T16-210-161	20-160 MPH	10-03586	$544.00
T16-211-161	20-160 Knots	10-03587	$542.00
T16-210-180	40-180 MPH	10-03588	$542.00
T16-211-180	40-180 Knots	10-03589	$542.00
T16-210-200	40-200 MPH	10-03590	$542.00
T16-211-200	40-200 Knots	10-03591	$542.00
T16-210-240	40-240 MPH	10-03592	$542.00
T16-211-240	40-240 Knots	10-03593	$542.00
T16-210-260	40-260 MPH	10-03594	$542.00
T16-211-260	40-260 Knots	10-03595	$542.00
T16-210-300	40-300 MPH	10-03596	$542.00
T16-211-300	40-300 Knots	10-03597	$542.00
T16-210-400	40-400 MPH	10-03598	$612.00
T16-211-400	40-400 Knots	10-03599	$612.00
T16-212-240	40-240 KmH	10-03602	$542.00
T16-212-260	40-260 KmH	10-03603	$542.00
T16-212-280	40-280 KmH	10-03604	$542.00
T16-212-300	40-300 KmH	10-03605	$542.00
T16-212-320	40-320 KmH	10-03606	$542.00
T16-212-380	40-380 KmH	10-03607	$542.00
T16-212-400	40-400 KmH	10-03608	$612.00
T16-212-440	40-440 KmH	10-03609	$612.00

IN

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FALCON 3 1/8" SINGLE RANGE AIRSPEEDS

These Airspeed Indicators have been one of the most chose flight instruments by kit plane builders and pilots. There are many great advantages to using these gauges: excellent slow speed characteristics; very progressive increments; a variety of ranges, light weight; short length, and affordable price. All Airspeed Indicators are housed in an aluminum case and consist of all metal parts. Available ranges: mph, knots, km/hr; single range reading or dual range readings. Non-Tso'd.

Model No.	Length	Range	Part No.	Price
ASI200M-3	3.5"/97.3mm	30-200 MPH	10-02918	$167.95
ASI180M-3	3.5"/97.3mm	30-180 MPH	10-03000	$167.75
ASI080M-3	2.2"/56.5mm	0-80 MPH	10-02905	$167.75
ASI100M-3	2.2"/56.5mm	0-100 MPH	10-02910	$167.75
ASI120M-3	2.2"/56.5mm	0-120 MPH	10-02915	$167.75
ASI140M-3	3.5"/97.3mm	0-140 MPH	10-02916	$167.75
ASI150M-3	2.2"/56.5mm	0-150 MPH	10-02225	$167.75
ASI160M-3	3.5"/97.3mm	0-160 MPH	10-02917	$167.75
ASI080N-3	3.5"/97.3mm	0-80 Knots	10-02896	$167.75
ASI100N-3	2.2"/56.5mm	0-100 Knots	10-02897	$167.75
ASI120N-3	2.2"/56.5mm	0-120 Knots	10-02898	$167.75
ASI140N-3	3.5"/97.3mm	0-140 Knots	10-02899	$167.75
ASI160N-3	3.5"/97.3mm	0-160 Knots	10-02900	$167.75
ASI180N-3	3.5"/97.3mm	0-180 Knots	10-02217	$167.75
ASI200N-3	3.5"/97.3mm	0-200 Knots	10-02218	$167.95
ASI220N-3	3.5"/97.3mm	0-220 Knots	10-02219	$167.75
ASI120K-3	2.2"/56.5mm	0-120 KPH	10-02625	$167.75
ASI150K-3	2.2"/56.5mm	0-150 KPH	10-02221	$167.75
ASI200K-3	2.2"/56.5mm	0-200 KPH	10-02222	$167.75
ASI300K-3	2.2"/56.5mm	0-300 KPH	10-02223	$167.75

FALCON 3 1/8" DUAL RANGE AIRSPEEDS

These Airspeed Indicators have been one of the most chose flight instruments by kit plane builders and pilots. There are many great advantages to using these gauges: excellent slow speed characteristics; very progressive increments; a variety of ranges, light weight; short length, and affordable price. All Indicators are housed in an aluminum case and consist of all metal parts.

Falcon Gauge Dual Dial Airspeed Indicators provide dual readings and are suitable for higher performance type aircraft flying at moderate to high speeds. Matte-white dial markings, housed in a sturdy protective aluminum case.

Weight: approx. 10.5 oz./301g Length:2.2" or 56.5mm
Size: 3-1/8"

Model No.	Range	Part No.	Price
ASI164MN-3	20-160 MPH/140 Knots	10-02227	$167.75
ASI186MN-3	30-180 MPH/160 Knots	10-02228	$167.75
ASI208MN-3	30-200 MPH/180 Knots	10-02901	$167.75
ASI252MN-3	30-250 MPH/220 Knots	10-02229	$206.95
ASI306MN-3	40-300 MPH/260 Knots	10-02230	$166.95
ASI316KN-3	30-300 KPH/160 Knots	10-02231	$167.75

SIGMA-TEK RESTRAINED AIRSPEED INDICATORS

These airspeed indicators have restrained movements.These instruments are actuated by ram air and ambient atmospheric pressure obtained from the aircraft pitot and static pressure systems. A moveable pointer and a fixed dial indicate airspeed with the zero index at the 12 o'clock position. Temperature compensation is internal and there is no external zero adjustment. Pointer damping is internally adjustable.

Note: Lighted Instruments do not include lamp trays, see accessories.

Model No.	Lighted	MPH	Knots	Part No.	Price
EA5174-( )L	X	40-200	40-170	10-05158	$786.00
EA5175-( )		40-250	40-200	10-05159	$640.00
EA5175-( )L	X	40-250	40-200	10-05160	$786.00
EA5176-( )		40-300	40-260	10-05162	$759.00
EA5176-( )L	X	40-300	40-260	10-05163	$798.00

FALCON 3 1/8' TRUE AIRSPEEDS

Falcon Gauge True Airspeed Indicators have a sub-dial and window. The pilot can set the dial to coincide the outside temperature with the flight altitude for immediate and accurate true airspeed reference. It is a high precision airspeed indicator which makes for a nice feature and impression in an experimental aircraft cockpit. It also features all parts made with metal, aluminum case housing, short length and light weight. Non-Tso'd

Dual Range: mph inside/knots outside or knots inside/mph outside
Single Range: mph or knots Size: 3-1/8"
Length: 2.2" or 56.5mm Weight: 10.5 oz. or 301g

Model No.	Range	Part No.	Price
ASIT260M-3	40-260 MPH	10-02235	$281.95
ASIT260M-3L	40-260 MPH, Lighted	10-02236	$377.00
ASIT210N-3	40-210 Knots	10-02237	$281.95
ASIT210N-3L	40-210 Knots, Lighted	10-02238	$378.00
ASIT2210N-3	40-220 Knots	10-02240	$298.00
ASIT220N-3L	40-220 Knots, Lighted	10-02239	$379.00
ASIT240M-3	40-240 MPH	10-02248	$281.95
ASIT240M-3L	40-240 MPH, Lighted	10-02249	$376.00
ASIT241MN-3	40-240 MPH/210 Knots	10-00001	$274.95
ASIT241MN-3L	40-240 MPH/210 Knots, Lighted	10-02214	$377.00
ASIT262MN-3	40-260 MPH /220Knots	10-00004	$281.95
ASI262MN-3L	40-260 MPH/220 Knots, Lighted	10-02234	$378.00
ASIT214NM-3	40-210 Knots/240 MPH	10-00002	$281.95
ASIT214NM-3L	40-210 Knots/240 MPH, Lighted	10-02233	$378.00
ASIT226NM-3	40-200 Knots/260 MPH	10-00003	$281.95
ASIT226NM-3L	40-200 Knots/260 MPH, Lighted	10-02216	$377.00

FALCON 2 1/4" MINIATURE AIRSPEEDS

These Miniature Airspeed Indicators are designed for ultralights. They offer ultralight pilots an affordable alternative to other higher priced indicators found in the market today without compromising the pilot's needs for a quality gauge that provides accuracy, light weight, compactness and safety. Their excellent slow speed performance provides an extra measure of safety by assuring accurate speed readings when flying low or critical stall speeds. Weight: approx. 2.8 oz. or 80g Length: 2-9/16" or 41mm

Model No.	Range	Part No.	Price
ASI080M-2	0-80 MPH	10-02605	$149.75
ASI100M-2	0-100 MPH	10-02610	$149.75
ASI120M-2	0-120 MPH	10-02615	$149.75
ASI140M-2	0-140 MPH	10-02620	$149.75
ASI120K-2	0-120 KPH	10-04198	$149.75
ASI140K-2	0-140 KPH	10-02226	$149.75
ASI120N-2	0-120 KNOTS	10-04069	$149.75

SIGMA-TEK AIRSPEEDS (TSO'D)

Sigma-Teks precision airspeeds are original equipment on a variety of aircraft and over 144,000 have been delivered worldwide. Select from a single MPH scale or dual scale showing MPH / Knots. New manufacture. TSOD for certificated aircraft unlit. Add $95 for custom range markings. (Specify exactly)

Model	Lighted	MPH	Part No.	Price
Dual Scale Airspeed	No	40-250	10-03210	$620.00
Dual Scale Airspeed	No	40-300	10-03215	$608.00
Standard Airspeed	No	40-200	10-05152	$591.00
Standard, Lit Airspeed	Yes	40-200	10-05153	$679.00
Standard, Lit Airspeed	Yes	40-250	10-05154	$742.00
Standard Airspeed with decal and calibration card	No	40-250	10-05155	$809.00
Standard, Lit Airspeed	Yes	40-300	10-05156	$764.00

SIGMATEK 3-1/8" TRUE AIRSPEED

These true speed indicators are differential pressure indicators that measure the difference between static and total pressure produced by ram air from the pitot. The indicated airspeed can be corrected for changes in altitude by turning the knob to align the outside air temperature with the altitude. The moveable airspeed scale will then show the actual, or true, airspeed. Model No.: EA5175-( )PTL. Lighted. MPH: 40-250. Knots: 40-200. Note: Lighted Instruments do not include lamp trays, see accessories. P/N 10-05161 ..... $876.00

Sigmatek Accessories

14V Lamp Tray ..... P/N 10-02757 ..... $67.75
28V Lamp Tray ..... P/N 10-02758 ..... $67.75
Sigmatek Airspeed Range Markings ..... P/N 10-04961 ..... $166.95

IN

AIRSPEED INDICATORS - ALTIMETERS

WINTER 2-1/4 INCH AIRSPEED INDICATOR EBF VARIOUS RANGE DIAL

This precision instrument is enclosed in a compact housing and operates by means of a measuring tube. This ensures high accuracy even at very low speeds. EBF-series airspeed indicators are available with a pitot tube and static pressure connection.

Description	Part No.	Price
Winter 2-1/4 Asi 8020 EBF Various Range 360 Degree Dial	10-05625	$289.85
Winter 2-1/4 Asi 8022 EBF Various Range 360 Degree Dial	10-05627	$289.85
Winter 2-1/4 Asi 8026 EBF Various Range 510 Degree Dial	10-05629	$343.75

MID-CONTINENT INSTRUMENTS AND AVIONICS AIRSPEED INDICATORS

Customizable range markings can be added to match aircraft operating handbook. Affordable, certified 2-inch instrument which can be used as standby or primary indicator. Combine with a Mid-Continent MD15 Altimeter and 4200 Attitude Indicator for a complete standby package designed for tight panel applications. Approved to FAA TSO-C2d. Integral long life 5, 14 or 28 volt LED lighting. Anti-reflective glass enhances visibility and reduces pilot fatigue. Rear-mounted in standard 2 1/4" cutouts horizontally, vertically or individually. Designed and built in the USA. One year limited warranty.

Model	Description	Part No.	Price
MD25-160	2-Inch 20-160 knots, Lighted	10-04761	$1,495.00
MD25-200	2-Inch 40-200 knots, Lighted	10-04763	$1,495.00
MD25-260	2-Inch 40-260 knots, Lighted	10-04764	$1,501.00
MD25-300	2-Inch 40-300 knots, Lighted	10-04765	$1,495.00
MD25-350	2-Inch 40-350 knots, Lighted	10-04766	$1,495.00
MD25-400	2-Inch 40-400 knots, Lighted	10-04767	$1,495.00

HALL WINDMETER

Designed for hang gliders but can be mounted on low speed aircraft as an airspeed indicator. Easy to read. Mounting bracket clamps to 7/8 or 1 1/8" dia. tube. Short bracket is 3' long, Long bracket 15" long.

Wind Meter (0-55 mph)..... P/N 10-04100 ..... $18.85
Wind Meter (0-80 mph)..... P/N 10-04105 ..... $18.85
Wind Meter (0-130 kph)..... P/N 15-04602 ..... $18.50
Short Bracket..... P/N 10-04200 ..... $5.75
Long Bracket ..... P/N 10-04300 ..... $6.75

WESTACH AIRSPEED KIT K2M6RH

Air speed 60 MPH kit, 2" round, with 303GW sender with 510A-1 propeller & 323B mount & 205-SS-SS 5' cable and 692B-323 bullet case with 323B mount, 2GM60R

P/N 10-01295 ..... $178.75

OPERATING RANGE DECALS

Yellow, red, green and white, pressure sensitive. Just pull off backing and place on instrument lens.

P/N 10-03905 ..... $2.95/set

VECTOR WRIST-TOP COMPUTER

The Vector combines an altimeter, vertical speed indicator, barometer, compass and a precision timepiece in one compact wristwatch-sized case. The instrument allows altitude measurement in feet or meters, up to a max. 27,000 ft., accurate to plus or minus 10 ft. It also provides instantaneous vertical ascent & descent rates in either feet/second or meters/second. The backlit display is easy to see in all lighting conditions. The barometer displays current barometric pressure and trends for accuracy, and deviation adjustment to correct for differences between true and magnetic north. Reliable & accurate, this new instrument provides time, day and date, as well as three daily alarms, a stopwatch and countdown timer. The unit is also waterproof to 100 ft.P/N 10-19325..... $199.00

WINTER 3-INCH ALTIMETERS 4 FGH 10 1000-20000 FEET

Standard Precision Altimeters 4 FGH 10. Airtight, black plastic housing. Connection via hose from static pressure sensor to hose connector on rear. Kollsman window with millibar scale, reading from 940 to 1050 millibars. See scale drawing for installation dimensions. Weight 0.330 kg. Linear scale. The 4 FGH 10 altimeter can be fitted with a scale ring.

Description	Part No.	Price
Winter 3 Altimeter 4 FGH 10 1000-20000 FT MB	10-05621	$960.00
Winter 3 Altimeter 4 Fgh 10 1000-20000 FT INHG	10-05622	$960.00

WINTER 2-1/4 INCH ALTIMETERS

The pressure-sensitive measuring element is a diaphragm capsule (aneroid capsule) which reacts to the effect of changing air pressure as the aircraft changes altitude. Tempered, aged copper-beryllium diaphragms ensure highly accurate readings. Diaphragm movement is transmitted to the instrument pointers by a linkage and gearwheels - the whole is insensitive to shock and vibration. A bimetal link compensates the effect of temperature change.

Description	Part No.	Price
Winter 2-1/4 Altimeter EBH 8032 0-5000 FT MB	10-24105	$316.00
Winter 2-1/4 Altimeter EBH 8034 0-5000 FT INHG	10-05632	$316.00
Winter 2-1/4 Altimeter EBH 8035 0-10000 FT INHG	10-05634	$316.00

TASKEM 2000 DIGITAL ALTIMETER

The Series 2000 Digital Altimeter is a precision instrument providing altitude readings from -100 to +30700 feet in 10' steps. A standard 3-1/8 instrument powered from 11–35V DC & uses a highly visible backlighted liquid crystal display. Displayed data includes Altitude, Baro Ref & Vertical Speed. A programmable altitude alert function combines both audio and visual (LED) outputs. An oxygen alert cautions when over 12500 feet. All data is output in computer compatible RS-232 format. Model 2000 devices display pressure in Hg while Model 2001 units are in mBar. 2 options can be added to the basic (-1) model; OAT (-2) includes temperature sender and also computes and displays Density Altitude, Mode C (-4) is a standard TSO-C88a compatible encoder. Both options are included in the (-3) versions. Wt., 8 oz. Depth behind back of instrument panel, 3-7/8". 2-yr factory warranty.

Model	P/N	Price	Model	P/N	Price
2000-1	10-24040	$399.50	2001-1	10-24041	$405.95
2000-2	10-24050	$498.95	2001-2	10-24051	$498.95
2000-3	10-24060	$498.95	2001-3	10-24061	$498.95
2000-4	10-24070	$597.00	2001-4	10-24071	$597.00

TASKEM 5000 DIGITAL ALTIMETER

Unlike mechanical altimeters, the Taskem 5000 is insensitive to the high vibration of 2-stroke engines frequently used on ultralight aircraft. This has literally shaken many mechanical altimeters. The 5000 is all solid state and can withstand severe shock and vibration without damage. It has a full 4.5 digit liquid crystal (LCD) display with large, 1/2" high characters. Because the LCD uses direct drive, it is easily readable from most viewing angles and does not disappear when viewed from an angle or does not washout in bright sunlight. Includes a backlight for night or dusk viewing. The altitude range extends from below sea level to well above the need for supplementary oxygen. The limits are -1000 to 19,990 ft. (-305 to 6,093 meters). Increments are in 10 ft./1m steps. The instrument is powered from DC in the range of 7–30V and is protected for accidental polarity reversal. A 9V battery is a common power source and a battery holder for this is provided on the back, external to the case. An alkaline battery will provide over 40 hours of operation, without the backlight illuminated. The backlight is not powered in the ON power switch position to conserve battery life.

Feet..... P/N 10-24010 ..... $264.00
Meters..... P/N 10-24020 ..... $287.95

ALTILERT ALTITUDE ALERT

Designed for general aviation use, the Altilert is a portable device to help the pilot maintain an assigned or desired altitude. It's use is simple. Fly to your desired altitude and turn the unit on. The Altilert learns your current altitude (by sampling barometric pressure, just like your altimeter) and stores this information. As your altitude drifts, an error signal is generated. At approximately +/- 100 ft. (or 50 ft. in Precision Mode), the red indicator flashes quickly and is accompanied by a piezo horn. The horn can be silenced by pressing the push button switch. Alarms will clear upon return to your original altitude. A new desired altitude can be set by turning the unit off and back on at any time. SPECIFICATIONS: • Size: 1.5"h x 4"L • Wt: 5 oz. (including battery) • Battery: 9V (not included) • Battery Life: 24 hrs+ • Dual Sensitivity Levels •Audible Alarm.

P/N 10-01727..... $149.00

IN

UNITED SENSITIVE ALTIMETERS

Designed to help the pilot determine altitudeby measuring existing atmospheric pressure, this altimeter translates this measurement into "height-above-sea-level." This is indicated on the dial of the instrument in feet, which requires setting the barometric pressure in the Kollsman window. Standard 3-1/8" size.

Range	Scale	Manufacturer	P/N	Price Ea.
0-20000 ft.	Inches	United (TSO)	10-04550	$1,057.00
0-35000 ft.	Inches	United (TSO)	10-04570	$1,195.00
0-20000 ft.	Millibar	United (TSO)	10-04560	$1,049.00
0-20000 ft.	Inches	United (Lighted)	10-00929	$1,265.00
0-35000 ft.	Inches	United (Lighted)	10-00930	$1,399.00
0-20000 ft.	Millibar	United (Lighted)	10-00931	$1,277.00
0-20000 ft.	In/Mil	United (Lighted)	10-00932	$1,289.00
0-20000 ft.	In/Mil	United (Unlighted)	10-00933	$1,065.00
0-35000 ft.	In/Mil	United (Unlighted)	10-02696	$1,195.00
0-35000 ft.	In/Mil	United (Lighted)	10-02697	$1,425.00
0-35000 ft.	Millibar	United (Lighted)	10-02698	$1,395.00
0-35000 ft.	Millibar	United (Unlighted)	10-02699	$1,195.00
0-35000 ft.	In/Mil	United (Unlighted)	10-04514	$3,359.00

UNITED ALTIMETER WITH CORRECTED BAROMETRIC OUTPUT

True airspeed all the time! No need to correct the barometer, the altimeter does it automatically for the pilot. • Compatible with most Air Data Systems • 35,000 ft., dual barometric scale • Internally lighted – light tray included • TSO C10d certified • Standard D.C. voltage barometric output • Mounts in standard 3 1/8" panel cutout • Requires just 5" depth behind the panel • 1/8" NPT static port • Connector included • Manufactured by United Instruments.
P/N 10-02718.....$2,465.00

MID-CONTINENT INSTRUMENTS AND AVIONICS ALTIMETER, 2-INCH

Reliable for primary or standby use, these altimeters provide flight critical data with a three-pointer or counter drum pointer display. The compact, 2-inch size is ideal for complex panel installations. Lighting is included. These altimeters are used in many popular OEM and STC packages. Call for application assistance.

Model	Description	Part No.	Price
MD15-211	2-Inch 20K, 3-ptr., Right-hand knob, Mil., lighted	10-04753	$3,995.00
MD15-212	2-Inch 20K, 3-ptr., Left-hand knob, Mil., lighted	10-04754	$3,995.00
MD15-221	2-Inch 20K, 3-ptr., Right-hand knob, In., lighted	10-04755	$3,995.00
MD15-222	2-Inch 20K, 3-ptr., Left-hand knob, inches, lighted	10-04756	$3,995.00
MD15-311	2-Inch 35K, 3-ptr., Right-hand knob, Mil., lighted	10-04757	$4,159.00
MD15-312	2-Inch 35K, 3-ptr., Left-hand knob, Mil., lighted	10-04758	$4,159.00
MD15-321	2-Inch 35K, 3-ptr., Right-hand knob, In., lighted	10-04759	$4,159.00
MD15-322	2-Inch 35K, 3-ptr., Left-hand knob, In., lighted	10-04760	$4,159.00

FALCON 3 1/8" SENSITIVE ALTIMETERS

1. Three Pointer Altimeter with Barometric Window and Low Altitude Warning Stripes is a modern type. The easy to read striped sector will show while flying below 16,000 ft. 2. Three Pointer Altimeter with a Barometric Window enables the pilot to adjust the altimeter to the barometric conditions existing at the point of landing. 3. Two Pointer Altimeter without Barometric Window. This type of altimeter is designed to meet the demands of some pilots who either live or fly the area's barometric pressure beyond 28.1 to 31 inches of mercury, or 950 to 1050 millibars, or some pilots prefer to set the altimeter to"0" altitude before taking off without regard to the barometric pressure. By installing this altimeter, the pilot can fly anywhere in the world without having to care about the barometric pressure changes. Non-TSO'd.

UMA 3-1/8" ALTIMETERS

This UMA standard altimeter utilizes a single pointer and is designed to meet the needs of the low-cost Non-IFR user. This altimeter utilizes a single pointer and adjustable barometric scale, viewed through a Kollsman Window. Can be ordered in inches of mercury or millibar. Available in feet or meters. Aluminum case. $181.80 ea

Part No.	Range	Dial Markings	Scale
10-22965	0-20,000 Ft.	B &W	w/ IN HG
10-02436	0-10,000 Ft.	B &W	w/ IN HG
10-02369	0-5,500 Ft.	B &W	w/ IN HG
10-05120	0-5,500 Ft.	B &W	w/ Millibar
10-05125	0-10,000 Ft.	B &W	w/ Millibar
10-05126	0-20,000 Ft.	B &W	w/ Millibar
10-05127	0-3,000 M	B &W	w/ Millibar

UMA 2-1/4" ALTIMETERS

This UMA standard altimeter utilizes a single pointer and is designed to meet the needs of the low-cost Non-IFR user. This altimeter utilizes a single pointer and adjustable barometric scale, viewed through a Kollsman Window. Can be ordered in inches of mercury or Millibar. Scale is available in feet or meters. $327.00 ea

Part No.	Range	Dial Markings	Scale
10-05131	0-10,000 Ft.	B &W	w/ IN HG
10-05132	0-20,000 Ft.	B &W	w/ IN HG
10-05133	0-10,000 Ft.	B &W	w/ Millibar
10-05134	0-20,000 Ft.	B &W	w/ Millibar

FALCON 3 1/8" NON-SENSITIVE ALTIMETERS

These light weight altimeters feature a non-sensitive altimeter on a 3-1/8", single pointer, and a barometric window. A setting knob allows the pilot to set the barometric reading to the correct field elevation or barometric pressure setting. They are weight conservative, economical, yet very precision and accurate instruments that provide excellent altitude measuring capabilities; designed for ultra-light airplanes. 3-1/8" is non-sensitive. Standard Types are either feet reading with barometric window inches of mercury or millibars reading; or meters reading with barometric window millibars reading. Length: 2 3/8" Weight: 10.7 oz.

Part No.	Range	Price
10-05100	6,000 ft./12,000 ft Inches	$166.75
10-03422	10,000 ft./20,000 ft. Inches	$164.75
10-02251	6,000 ft., Millibars	$164.75
10-02252	10,000 ft., Millibars	$164.75

FALCON 2 1/4" SENSITIVE ALTIMETERS

2-1/4" is sensitive. Single Pointer, and a barometric window. A setting knob allows the pilot to set the barometric reading to the correct field elevation or barometric pressure setting. They are weight conservative, economical, yet very precision and accurate instruments. It is suitable where space and weight is a consideration. This type is available in Feet or Meter reading, the baro-metric window can be either in inches of mercury or in millibars reading. Length: 2 3/8" Weight: 3.6 oz.

Model No.	Part No.	Range	Price
ALTN6INF-2	10-02205	5,500 ft. Inches	$209.95
ALTN10INF-2	10-04510	10,000 ft. Inches	$208.95
ALTN6MBF-2	10-04070	6,000 ft., Millibars	$213.95
ALTN10MBF-2	10-04071	10,000 ft., Millibars	$208.95
ALTN3ME-2	10-02207	3,000 Meters, Millibars	$256.95
ALTN6ME-2	10-02254	6,000 Meters, Millibars	$208.95

Size	Model No.	Range	Part No.	Price
Altimeter-Sensitive, without Barometric Window, 2 Pointers				
3-1/8"	ALT100F-3	10,000 feet	10-02259	$398.00
3-1/8"	ALT20INF-3N	20,000 ft, Inches	10-02204	$395.00
3-1/8"	ALT20MBF-3N	20,000 ft, Millibars	10-02256	$399.00
Altimeter-Sensitive, with Barometric Window, and Warning Stripes , 3 Pointers				
3-1/8"	ALT20INF-3	20,000 feet, inches	10-05327	$432.00
3-1/8"	ALT20MBF-3	20,000 feet, millibars	10-04500	$443.00
3-1/8"	ALT20IMF-3	20,000 Feet, inches & millibars	10-02260	$463.00
3-1/8"	ALT6MEMB-3	6,000 meter, millibars (no stripes)	10-02257	$443.00

IN

MICROTIM™ BAROMETRIC ALTIMETER

Features: * Registers changes in altitude of 2 feet or less. * Calibrated from -2000 feet MSL (2000 feet BELOW sealevel) to +20000 feet MSL (20000 feet ABOVE sealevel). * Low Power. * One foot resolution, barometric-pressure and field-elevation adustable. * AGL(relative), MSL(sealevel) or BOTH alternately every 2 seconds. * Selectable units: feet/inHg or meter/kPa or feet/mbar(hPa). * Excellent ultralight altimeter or backup unit. * Small (3"x1.5"x3/4") * Very durable * EASY TO USE right out of the box.

P/N 10-01726..... $213.95

INSTRUMENT BUGS

"Bugs" are perfect for pilots who rent aircraft, and for owners. The transparent suction cup works on all instruments. A thumb screw friction lock lets the yellow pointer tip rotate 360°. Fly with it day & night. Includes: 2 "Bugs" in a plastic reusable storage box with instructions and 4 disposable alcohol swabs, which are used to clean the instrument face and bugs so that they stick well. P/N 10-00114..... $9.85

STATIC BUGS REMOVEABLE REUSEABLE DECAL

The Bug is a transparent, static low-tack, Removable Reusable Decal. Place it on the face of gages, instruments for a quick visual reference. The Bug also helps remember Numbers for you and is a paper Map Marker. Does not leave residue on surface. Reusable Many Times. 5 Reusable Static-Bugs in each package. P/N 10-05080..... $6.85

AIRCRAFT INSTRUMENT COVER

The instrument cover is a plastic disk approximately 2 3/4" in diameter and 1/16" thick. By use of the attached suction cup, the cover will mask the face of most general aviation flight instruments. It is useful in many training situations one of which is partial panel work. As a safety aid, the cover can be used to mask an instrument when it is non-functional, as is required by Regulations. Each package has two covers.

P/N 13-04968.....$5.95

INSTRUMENT COVERS

The suction cup on the back of this soft rubber disc enables the pilot or instructor to cover up one or more flight instruments for partial panel instruction or to cover a failed instrument during flight. Measures 3-1/8" in diameter. Flight instructors and IFR pilots should have several of these handy covers in their flight bags.

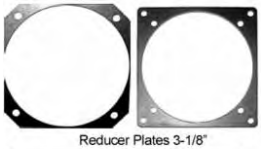
P/N 13-00088.....$2.65 ea

INOPERATIVE INSTRUMENT AID

Designed with static cling polyester, the IIA will stick to your glass instrument face without licking and will stay there until you want to remove it. Practicing instrument failures during flight is a requirement by the Federal Aviation Administration for your practical test. One package includes four Inoperative Instrument Aids. Developed by a Certified Instrument Flight Instructor with the intent to improve instrument instruction. measures 3" in diameter.

P/N 13-04173..... $8.95

3ATI REDUCER PLATES



Reducer Plates 3-1/8"

3ATI Reducers to 3 1/8" - Use a 3ATI hole cut out to mount 3 1/8" diameter instrument. Plate can be shimed to instrument panel thickness . Simple installation. Heat-treated aluminum .080 thick with black anodize finish.

P/N 07-01331 ..... $16.75

Reducer Plates 2-1/4"

3ATI Reducers to 2 1/4" - Use a 3ATI hole cut out to mount 2 1/4' diameter instruments. Plate can be shimed to instrument panel thickness, comes with 4 rivets. Simple installation. Heat-treated aluminum .080 thick with black anodize finish.BACK PLATE 3.8 X 3.8

P/N 07-01330 ..... $16.75

REDUCING MASKS

Precision die-cut black anodized aluminum masks simplify installation of small instruments in large instrument panel cut-outs. 3 types available.

#1: Large AN-type artificial horizon cut-out to 3-1/8" size
P/N 10-05900 .....$10.95

#2: Large AN-type directional gyro cut-out to 3-1/8" size.
P/N 10-06000 .....$13.75

#3: 3-1/8" size cut-out to 2-1/4" size .....P/N 10-06100 .....$10.95

DRILL JIG AND FILING TEMPLATE FOR THE 3 ATI INSTRUMENT CUT

A handy much needed tool to have for those difficult to make 3 ATI cut outs that everyone complains about. A rugged tool made of alloy steel with a 58–60 RC hardness for long life. Simply drill mounting holes and cut opening file to template. P/N 10-00153.....$32.50

MOUNTING PLATE FOR THE 3 ATI INSTRUMENT

Quick fix for a hard to cut out opening. Plate is .500 wider than instrument. For easy mounting, material is .080 aluminum P/N 10-00154.....$10.50

REDUCING PLATE FROM 2-1/4" DIA.

Reduce from 2.25" to 2" diameter instrument. For oil pressure, ammeter gauge etc. P/N 10-00155.....$8.95

INSTRUMENT COVERS FOR PARTIAL PANEL PRACTICE

Sold in 4 packs of 25 (for a total of 100 sticky notes). These round pads are white with a light blue ASA logo, and fit any aviation instrument. Perfect for partial panel practice or jotting down quick notes. P/N 13-21776 ..... $6.50

INSTRUMENT PANEL COVER-UPS

These white stick on instrument size covers are ideal for partial panel practice or to cover an actual failed instrument. These covers are reusable and are furnished in a package of 5 covers P/N 10-00066 .....$2.95

INSTRUMENT PANEL COVER-UPS FOR PFD / MFD

Cover ups for PFD and MFD screens for glass cockpit training. For partial panel practice & actual instrument failures. * Reusable, 3 per pack * "Cling" type plastic covers, with lift tab * Zip lock plastic bag for convenient storage. P/N 13-06116 ..... $6.95

INSTRUMENT HOLE COVER PLATES

Use these plates to attractively cover unused panel cut-outs. Aluminum and plastic plates have raised center, which brings the plug face about even with the front surface of the panel.

Plastic plate for 2-1/4" Cut-Out.....P/N 10-06900..... $4.85
Plastic plate for 3-1/8" Cut-Out.....P/N 10-07000..... $5.75
Plastic plate for standard altimeter hole .....P/N 10-07100..... $8.95
Aluminum plate for 2-1/4"hole, black wrinkle .....P/N 10-00427..... $9.75
Aluminum plate for 2-1/4"hole, no paint.....P/N 10-00428..... $9.75
Aluminum plate for 3-1/8"hole, black wrinkle .....P/N 10-00429.....$11.50
Aluminum plate for 3-1/8"hole, no paint.....P/N 10-00430.....$10.75
Plastic plate for 3ATI hole, black fire retardant .....P/N 10-00433..... $8.50
Aluminum plate for 3ATI hole, black wrinkle .....P/N 10-00434.....$11.50
Aluminum plate for 3ATI hole, no paint.....P/N 10-00436.....$10.50
Plastic plate for half ATI hole, black fire resist. .....P/N 10-00437..... $8.50

INSTRUMENT PANEL LAYOUT TEMPLATE

Use this template for precise positioning of instrument holes and mounting screw holes in panel. For both 2-1/4" & 3-1/8" dia. instruments. With transfer punch for marking screw hole centers and instructions.

P/N 12-14600.....$20.55

IN

FALCON ACCELEROMETER (G-METER)

Accelerometers register to "g" forces acting on the airframe during turbulence or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. Easy to reset by pushing the "push to reset" knob. All models are mechanical and offer precision, accuracy, reliability and durability. They are very easy to operate with no wiring necessary. Whether flying acrobatic or not, this G-Meter provides the pilot valuable information for a winged airplane and helicopter without having to spend astonishing figures.

Size	Part No.	Range	Price
3-1/8"	10-00936	-5g to +10g	$398.00
3-1/8"	10-00935	-2g to +5g	$419.00
2-1/4"	10-09800	-5g to +10g - white pointers	$396.00
2-1/4"	10-04073	-5g to +10g, Lighting 24V	$727.00
2-1/4"	10-02049	-5g to +10g, Lighting 12V	$629.00
2-1/4"	10-04074	-5g to +10g, Lighting 5V	$675.00
2-1/4"	10-00840	-2g to +5g	$419.95

FALCON ACCELEROMETER SMALL G METER

This instrument, mounted in the aircraft panel with its face in the vertical plane, register to "g" forces acting on the airframe during turbulence, or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. A reset knob is provided. The mechanism is locked for shipping. Interchangeable with MS282025-1. Specifications: Dim: 2-1/4" X 2-1/4" X 4" Weight: Approx. 7lbs Range: -5g to +10g.

P/N 10-09800.....$396.00

CENTURY INSTRUMENTS RECONDITIONED ACCELEROMETER (G-METER)

This reconditioned instrument, mounted in the aircraft panel with its face in the vertical plane, register to "g" forces acting on the airframe during turbulence, or aerobatic maneuvers. One pointer gives a continuous reading, the other two indicate maximum positive and negative loads. A reset knob is provided. The mechanism is locked for shipping. Interchangeable with AN5745. Specifications: Dim: 3-1/8" X 3-1/8" X 3" Weight: Approx. 8lbs Range: -5g to +12g.

P/N 10-09710.....$359.95

FLIGHT DATA G-METER GT50 12/28

Note: Now FAA Approved as a replacement clock in non-transport category aircraft.
The GT-50 is a Six Function: Accelerometer - Clock - Voltmeter - Temperature for Experimental Aircraft.
G-Meter:
* Continuous Instantaneous Display to +12/-10 G's
* Records and Saves Max and Min G's
* 30 Degree (Sonex) Tilted Panel Compatible
Flight Timer: Automatically Records Flight Time
Clock: 12 or 24 Hour Format
Timer/Stopwatch Voltmeter
Features: * Best G-Meter Value Available. * Extreme Operating Temperature Display. * Soft Orange Backlight. * 2-1/4" Panel Mounted. * Weighs 2.5oz * Includes Pre-Wired Connector * 12-28 Volt Compatible

P/N 10-03691.....$159.00
Flight Data OAT Probe GT50.....P/N 10-03694.....$29.00

WINTER 2-1/4 INCH VARIOMETERS EBV

The tiny housings mean that these instruments can be installed even where space is restricted.

Description	Part No.	Price
Winter 2-1/4 Variometer 8051 EBV 1000 FT Min	10-05638	$604.00
Winter 2-1/4 Variometer 8052 EBV 10 Knots	10-05639	$604.00
Winter 2-1/4 Variometer 8058 EBV 2000 FT Min	10-05642	$604.00
Winter 2-1/4 Variometer 8061 EBV 1000 FT Min Log	10-05644	$680.00
Winter 3 Variometer 8054 EBV 1000 Ft Min	10-05640	$604.00
Winter 3 Variometer 8055 EBV 10 Knots	10-05641	$604.00
Winter 3 Variometer 8059 EBV 2000 Ft Min	10-05643	$604.00
Winter 3 Variometer 8064 EBV 1000 Ft Min Log	10-05646	$680.00
Flask for Winter Variometer	10-03856	$33.00

UNITED VERTICAL SPEED INDICATORS

The vertical speed indicator is a precision instrument which provides an accurate indication of rate of change of altitude. This instrument is temperature compensated and is provided with a zero adjustment screw on the face of the case in the seven o'clock position. Power: Static system.

Manufactured by United Instruments. Used in most production aircraft. Size: 3-1/8" x 3-1/8" x 4", Wt. 0.7 lb. TSO-C8b.
Unlighted VSI's
0-2000 FPM .....P/N 10-05200.....$574.00
0-3000 FPM .....P/N 10-20400.....$565.00
0-4000 FPM .....P/N 10-20500.....$574.00
0-6000 FPM .....P/N 10-05250.....$1,045.00
Lighted VSI's
0-2000 FPM .....P/N 10-00925.....$778.00
0-3000 FPM .....P/N 10-00926.....$778.00
0-4000 FPM .....P/N 10-00927.....$778.00
0-6000 FPM .....P/N 10-00928.....$1,225.00

3-1/8" UMA VERTICAL SPEED INDICATORS

Part No.	Name	Range	Price
10-20505	Vertical Speed	0-2,000 Ft.	$214.00
10-02368	Vertical Speed	0-3,000 Ft.	$212.95
10-20506	Vertical Speed	0-4,000 Ft.	$244.95
10-20508	Vertical Speed	0-6,000 Ft.	$256.95
11-07239	Optional internal lighting		$56.75

UMA MINIATURE 2 1/4" VERTICAL SPEED INDICATORS

This instrument mounts in a standard 2-1/4" instrument panel cutout. New manufacture with brilliant easy-to-read matte-white numerals on black background. Size: 23/8"x 23/8"x 31/4" long.

Part No.	Name	Range	Price
10-05500	Vertical Speed	0-2,000 Ft.	$283.00
10-00079	Vertical Speed	0-3,000 Ft.	$283.95
10-05550	Vertical Speed	0-4,000 Ft.	$296.95
10-05560	Climb	0-4,000 Ft.	$335.00
10-05570	Rate of Change	0-4,000 Ft.	$335.00
10-05580	Cabin Climb	0-4,000 Ft.	$335.00
10-05600	Vertical Speed	0-6,000 Ft.	$296.95
10-05610	Climb	0-6,000 Ft.	$335.00
10-06910	Rate of Change	0-6,000 Ft.	$335.00
11-07239	Optional internal lighting		$56.75

FALCON VERTICAL SPEED INDICATORS

These Vertical Speed Indicators (Rate of Climb), have been installed in thousands of planes. Available in climb ranges from 2,000 feet per minute to 3,000 feet per minute, and 10 meters per second. This precision aircraft instrument provides immediate climb and descent information with an easy to read dial and is extremely reliable and durable. Over several decades, they have been servicing and satisfying pilots and kit plane builders worldwide.

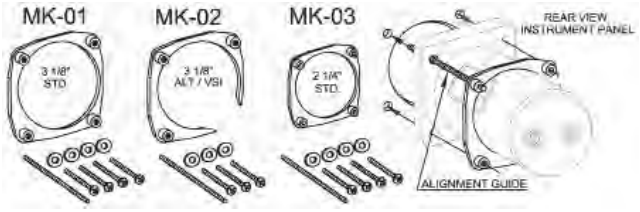
The 2-1/4" altimeter is perfect for the ultra-light models and where space and weight are a factor of consideration.

Part No.	Size	Range	Length	Weight	Price
10-05352	3 1/8"	2,000 ft/min	4.25"/105mm	12.7 oz	$177.75
10-05210	3 1/8"	3,000 ft. / Min.	4.25"/105mm	12.7 oz	$210.95
10-02246	3 1/8"	10 meter/second	4.25"/105mm	12.7 oz	$181.75
10-01643	2 1/4"	2,000 ft. / Min.	4.8"/112mm	9.2 oz	$245.95
10-00983	2 1/4"	10 Meters / Sec.	4.8"/112mm	9.2 oz	$245.95

IN

INSTRUMENT MOUNTING & ADAPTER KITS

INSTRUMENT MOUNTING KITS

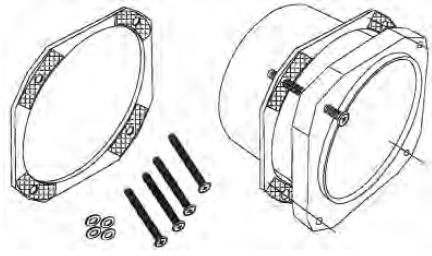


Kits come with "special" self-locking black pan head screws nylon washers, and alignment guide pin.

Precision machined "Nut Ring" instrument mounting kit. Designed to slide on from the back side of the instrument using the alignment guide pin inserted through a screw hole. Pulling on the alignment pin from the front side of the panel allows you to hold the instrument in correct alignment in the panel. Specially designed self-locking pan head black brass mounting screws and nylon washers are then easily installed from the front. Countersunk self-locking black brass screws are also available. Extra screws & washers are sold in packs of 12. The nylon washer keeps from chipping the instrument panel. All self-locking screws are extra long to accommodate the extra thickness of light wedges and internally lighted instruments. Nut Rings can be installed without removing hoses, tubing, or electrical connections. Designed to replace "grasshopper nuts". PMA'd. Alignment guide pin sold separately.(P/N 10-03696)

Model	Description	Part No.	Price
MK-01	3-1/8" Std.	10-00335	$10.85
MK-02	3-1/8" ALT/VSI	10-00336	$10.85
MK-03	2-1/4" Std.	10-00337	$10.85
MKNR-05	Pan Head Screws	10-00338	$10.95
MKNR-06	Countersunk Screws	10-00339	$11.50
Accessories			
AP-01	Alignment Mounting Kit	10-03696	$1.95

"EZ NUTS" INSTRUMENT MOUNTING SYSTEM BY SPT



Take the frustration out of mounting instruments with the use of Superior Panel Technology's EZ Nuts. Adhesive tape securely holds nut ring in place. No realignment if instrument is later removed. Aluminum bezel is treated to prevent corrosion. The pressed in stainless steel inserts eliminate the problem of striped threads. Simply cut off one corner if only three screws are needed. Save labor time when compared to "grasshopper nuts".
Includes four 1-1/2" non-magnetic black oxide stainless steel, pan-head screws. Stronger than brass. Includes four black nylon washers to prevent marring of the panel.
*100 degree countersunk screws available and are sold in packs of eight.

3-1/8" Bezel ..... P/N 11-01830 ..... $8.95
2-1/4" Bezel ..... P/N 11-01831 ..... $8.95
Black-Oxide Stainless Steel Countersunk screw package (set of 8) ..... P/N 11-06546 ..... $3.95
Black-Oxide Stainless Steel Pan head screw package (set of 8) ..... P/N 11-09911 ..... $2.95

PITOT TUBE PROTECTORS

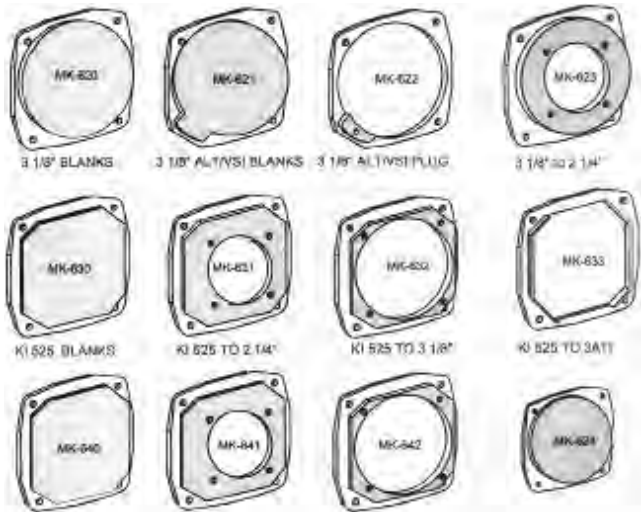
These hinged pitot tube protectors open automatically in take off at speed of about 40 mph and close automatically at end of landing roll.

Model No.	Part No.	Fits Pitot Tube Sizes	Price
1	10-02000	1/4" O.D.	$11.50
2	10-02100	1/2" O.D.	$11.50
3	10-04968	3/16" O.D.	$11.50
4	10-04969	3/8" O.D.	$11.50

REMOVE BEFORE FLIGHT RIBBON

This 3" x 24" orange vinyl streamer with black letters, features a grommet for a clip ring to attach anywhere on the aircraft. High visibility, fire resistant material. P/N 15200.....$6.95

INSTRUMENT ADAPTER KITS



CNC Machined from aircraft grade aluminum. The adapter face is raised .075" to give the flush panel look. Easy to install and easily painted.
See www.aircraftspruce.com for specifications.

Model	Description	Part No.	Price
MK-620	3-1/8" Blank	10-00340	$13.85
MK-621	3-1/8" ALT/VSI Blank	10-00341	$13.80
MK-622	3-1/8" ALT/VSI Plug	10-00342	$19.75
MK-623	3-1/8" to 2-1/4"	10-00343	$19.75
MK-624	2-1/4" Blank	10-00344	$13.85
MK-630	KI525 Blank	10-00345	$13.50
MK-631	KI525 to 2-1/4"	10-00346	$19.75
MK-632	KI525 to 3-1/8"	10-00347	$19.75
MK-633	KI525 to 3 ATI	10-00348	$17.75
MK-640	3 ATI Blank	10-00349	$13.95
MK-641	3 ATI to 2-1/4"	10-00350	$21.05
MK-630	3 ATI to 3-1/8"	10-00351	$19.75

PITOT TUBE COVERS

PITOT TUBE BOOTY – Durable leather-like cover provides optimum protection. Velcro strap attaches booty to 5/8" or 11/16" dia. L-shaped pitot tube. Bright red "Remove Before Flight" streamer. Made of flame-proof & weather-resistant National Aerospace material.
P/N 15210.....$7.95

SLIP-ON PITOT TUBE COVER – Not shown. Same as above except is slip fit over 1/4" or 1/2" dia. pitot tube. Red "Remove Before Flight" streamer is attached to cover. Made of flame-proof and weather-resistant National Aerospace material.
P/N 15220.....$6.95

DEGROFF'S PITOT SHIELDS

PITOT SHIELDS are a "fail-safe" pitot tube cover that will protect the pitot tube from contamination by insects, debris and ice while the airplane is on the ground. It is friction-fit to the pitot tube and has a calibrated "flat-plate-forward" design that, upon reaching a specific velocity, will release from the pitot tube and fall harmlessly away, allowing for normal airspeed indications. The cover utilizes EVA foam that is UV resistant and stable at temperatures reached by heated pitot tubes. It is a highly visible color with the words "REMOVE BEFORE FLIGHT" printed and visible from all directions. This pitot tube cover is soft, but tough. It will not damage aircraft surfaces when it comes off during ground roll, nor will it be a potentially hazardous foreign-object on the runway.

For 5/8" pitot tube..... P/N 10-00491 .....$17.75
For 3/4" pitot tube..... P/N 10-00492 .....$18.95
For Piper pitot tube..... P/N 10-00493 .....$18.95

IN

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PITOT TUBES

UNHEATED PITOT TUBES

STRAIGHT TYPE – Flange-mounted through leading edge of spar. Aluminum tube 24" long, 1/4" dia. May be cut to shorten.
P/N 15133 ..... $19.85

L-SHAPED TYPE – Flange mounted L-shaped model for under-the-wing mounting. 1/4" dia. aluminum tube.
P/N 15135 ..... $28.75

L-SHAPED PITOT-STATIC TUBE – Same design with static tube added. For pitot tube cover order #15220 or 10-02100 (flip up). P/N 15144 ..... $34.85

STRAIGHT TYPE PITOT-STATIC TUBE – Clamp-mounted for leading edge of wing. 14-1/2" long. May be shortened, formed or shaped to best angle of attack. 1/4' dia. aluminum tubes. All installation hardware furnished.
P/N 10-01800 ..... $26.75

STRUT TYPE PITOT-STATIC TUBE – Simple L-shaped design for clamping to strut. 1/4" dia. aluminum tubes.
P/N 10-01900 ..... $31.75

MAST-MOUNT PITOT TUBE - Designed for mounting in 3/4" O.D. x .049" wall aluminum tubing (not furnished). Machined from solid aluminum. Polyethylene fitting for 1/4" I.D. hose included. P/N 15170 ..... $35.85

RAVEN PITOT STATIC TUBE

Pitot system combines pitot and static functions in one tube. Used for years on many different aircraft. Comes complete with mounting block to install it.
P/N 10-00476 ..... $219.95

PITOT STATIC SUMP BOTTLE

This pitot-static sump bottle collects moisture in the aircraft's static system which prevents water damage to panel mounted instruments. Used in many Cessna aircraft. Measures 1.625" dia. x 4.75" long.
Cessna ..... P/N 10-00630 ..... $13.50

STATIC PORTS

Aluminum static port for mounting through 9/16" dia. hole in side of fuselage. Base has 1/8" NPT female port for connecting to static line (polyethylene fitting included). Install with 3/32" dia. flush rivets. P/N 15160 ..... $16.85

Aluminum static port mounts from outside of fuselage through 9/16" dia. hole. Secure to skin with 9/16" Pal nut & lock washer on inside. Includes (1) 0700-153 polyethylene fitting. Kit ..... P/N 15165 ..... $19.50
Static port only ..... P/N 10-00658 ..... $19.65

Aluminum static port mounts from outside of fuselage through .560 dia hole. Secure with four countersunk 100o 3/32" rivets. Includes one 0700-153 polyethylene fitting.
P/N 15175 ..... $18.90

Aluminum single engine cessna type static port. External mounted through a 19/64" hole. Can be used on fabric, composite or aluminum. No need for rivets. 1-3/8" dia.x1" depth. Ideal for homebuilts of all types. P/N 10-00250 ..... $17.75

Aluminum static ports mount 1-1/4" base OD from outside of fuselage through 5/16" ID hole. Secure with 4 countersunk 3/32" rivets to skin with pal nut & lock washer on inside.
P/N 10-00659 ..... $16.75

Aluminum static ports mount 1-1/4" base OD from outside of fuselage through 5/16" ID hole. Secure with 4 countersunk 3/32" rivets to skin with pal nut & lock washer on inside.
P/N 10-00660 ..... $18.75

BOND-IN STATIC PORT SET

This aluminum static port is designed for high performance composite aircraft. Simply bond through the fuselage from the outside. Base has a 1/8" NPT for connecting to the static line. Furnished with installation instructions. Sold in set of 2. P/N 10-00229 ..... $39.95

AEROGIZMOS PITOT TUBE

Incorporates the mount and the tube in one convenient unit, making it no longer necessary to have a separate mount. This unit further enhances the building experience as there is no protruding mast from the wing if it is to be stored during the building process. Made from a single piece of 6061 aluminum making it strong and long lasting. The unit has been lightened in the interest of weight savings. Not for IFR use. P/N 10-03633 ..... $199.00

WINTER PITOT TUBE

The pitot tube is the sensor for aircraft instruments. It consists of a cylindrical tube open at the front to sense total pressure (measuring pressure for airspeed indicators) and slotted along the sides to sense static pressure. These pressures must then be carried to the instruments by hoses.
P/N 10-03854 ..... $29.25

HEATED PITOT TUBES

AN5812 PITOT TUBE - This heated pitot tube mounts under the wing. Used on Mooney, Beech, Piper, Maule, American Aviation aircraft, Glasair & Glastar. Threaded outlet fits 1/4" size AN tube fittings. Use 2.023x.857x.049 4130 Streamline Tubing to fabricate mount.
AN5812-12 (12V) (10 amp.) $1,689.00
AN5812-1 (24V) (15 amp.) $2,919.00
Phenolic connector receptacle P/N 10-00032. $159.00

AN5813-1 PITOT TUBE - The AN5813-1(PH500) is the standard replacement heated pitot tube for twin Cessnas with 24V systems. Draws 3-4 amps and measures 93/4" long. Mounts in 1.18 diameter tube. Dull finish.
P/N 10-00064 ..... $3,457.00

FALCON HEATED PITOT TUBES

The AN5812 heated pitot tube has been used on a wide variety of aircraft over the years and is now available for experimental aircraft. Made from brass and weighing 1.5 lbs, these imported pitot tubes meet the AN specifications.

Model No.	Description	Part No.	Price
12-AN5812	12V, standard	10-00984	$589.00
12-AN5812-1	12V, for RV's	10-04199	$586.00
12-AN5812-2	12V, left and right drain holes	10-04201	$586.00
24-AN5812	24V, standard	10-00985	$586.00
24-AN5812-2	24V, left and right drain holes	10-04202	$579.00
PT-001	non-heated, 1 drain hole	10-04224	$348.00
PT-002	non-heated, left and right drain hole	10-04225	$348.00

FALCON GAUGE PITOT TUBE MOUNTING BRACKET

Works with heated and non-heated tubes. Aluminum Alloy
Standard Mounting Bracket ..... P/N 10-01063 ..... $41.50
Mounting Bracket for RV's ..... P/N 10-02276 ..... $94.50

GRETZ GA-1000 HEATED PITOT TUBE

Molded from a very high-tech polymer material. Electronics embedded in the Pitot tube. Comes with a small electronic control module to control the heat of the Pitot and information to the pilot regarding performance. A LED board that will mount conveniently on the panel. Will fit the Gretz mounting bracket kits. Come with the electronic control module, the LED board and cable, Pitot mounting screws, electronic control module mounting hardware, and complete instructions for installation and use.
P/N 10-01715 ..... $425.00

GRETZ GA-500 UNHEATED PITOT TUBE

Same shape and color as the heated GA-1000 Pitot tube, but does not include the heater, electronic instructions, etc. It will mount into the same Gretz mounting bracket kits. P/N 10-01716 ..... $125.00

GRETZ AERO PITOT TUBE BRACKET KITS

To be installed on all of the very popular Van's RV aircraft series, but it can also be installed easily on other metal wing aircraft,. as well as composite, and tube and fabric aircraft with very minor modifications to the kit parts. Very easy to remove and to re-install. The mount brackets comes with in a paintable finish. These Pitot Tube Mounting Bracket.
Paintable Finish Pitot Tube Mounting Bracket Kit for GA-1000, & GA-500, also, AN5812, PH502-12CR, Dynon, and Fly More
P/N 10-01820 ..... $102.95
Paintable Finish Non-Drilled Pitot Tube Mounting Bracket Kit for Falcon.
P/N 10-01188 ..... $109.95
Please Note: Pitot tubes are Not included in Kits or Kit prices!

WELDED PITOT TUBE ASSEMBLY

This non-heated non-IFR welded pitot tube assembly. It is intended for the experimental VFR aircraft market. The tube and mast are from 4130 tube welded in a fixture to assure alignment. The orifice is produced from aircraft grade aluminum. The pressure tube is polyethylene for easy connection to the aircraft pitot system. Dimension: 6" x 5" x 2-1/2"
P/N 10-03637 ..... $148.95

PNEUMATIC TOGGLE SWITCHES

2-Way Toggle Switch, (1/8" NPT Male Inlet) for alternate static air source.
Steel ..... P/N 11-12169 ..... $10.64
Plastic ..... P/N 11-12168 ..... $15.70

IN

ANGLE OF ATTACK INDICATORS

BENDIX KING KLR 10 LIFT RESERVE INDICATOR

The easiest stall to recover is the one that never happens. The KLR 10 Lift Reserve Indicator provides at-a-glance awareness and audible cues of remaining lift, in an easy-to-install, easy-to-read device that's ready for your experimental aircraft. Mounted on the glare shield, it's at eye-level, exactly where you need it. Helping you takeoff with confidence, grease more landings and fly with better Angle of Attack. The KLR 10 Advantage: Lightweight, Low-cost, easy installation with low power consumption. Accurate and instantaneous displays of lift reserve, which is the safety margin above a stall. Visual and audible cues alert you of decaying lift much earlier than traditional warning systems. Allows for quick and timely reactions. Independent of pilot-static systems, so it can be used even if the existing air-data system is compromised by ice, water or other contaminants . Optional heated probe.

KLR 10 ..... P/N 11-12022 ..... $1,600.00

Accessories

Heated Probe Option, +12vDC ..... P/N 11-12024 ..... $115.95
Angle of Attack Probe Cover with flag ..... P/N 11-12027 ..... $15.99
Swivel Mount ..... P/N 11-12028 ..... $84.75
Flush Mount Panel (Instrument Panel Mount) ..... P/N 11-12029 ..... $42.50

THE REDDISH STALL WARNER

Developed in the UK by Nigel Reddish, these stall warners have been installed in many RV series aircraft. the vane is ground adjustable and installation is simple. Includes a micro switch and vane. For experimental aircraft only.Note: The Mark 2 Version is practically the same as the Mark 1, the only difference is the vane on the Mark 2 is longer. The installation is the same as the Mark 1.only.

Mark I ..... P/N 10-00189 ..... $89.95
Mark II ..... P/N 10-02686 ..... $89.95

ANGLE OF ATTACK CYA 100

The CYA-100 Angle of Attack system is the only affordable FAA APPROVED TRUE Angle of Attack system on the market today! Extremely light, and extremely small, the CYA-100 is easy to install, with no extra computer boxes or hoses. The vane driven sensor is magnetically coupled. There are no small pressure ports to plug and no ball bearings to seize. ..... P/N 10-05682 ..... $625.00

RITE ANGLE BASIC SYSTEM AOA

The RiteAngle Basic, is a high quality AOA system for aircraft without flaps. This is the most accurate low cost AOA system available to customers today. Note: The Basic system is for aircraft without flaps only. The RiteAngle™ Basic uses electronics not available during earlier designs of RiteAngle™ systems. Although operationally similar to prior RiteAngle products, the RiteAngle Basic is a totally new, more efficient, economical design. It is a modern up to date system, that accurately determines your aircraft's angle of attack. This series uses our proven, easy-to-understand, five LED display. Green indicates Safe, Amber indicates Caution, and Red indicates Danger. The "On Speed" AOA, 1.3 Vso will be correct, regardless of bank angle, density altitude, or any of the other variables where the airspeed might be inaccurate. P/N 11-10388 ..... $345.00

RIGHT ANGLE BUDDY AOA

The RiteAngle™ Buddy also uses electronics not available during design of the initial RiteAngle™ systems. Although it is similar to the prior RiteAngle systems, for aircraft with no flaps, The RiteAngle Buddy operationally, is a totally new design using an enhanced display.

Note: The Buddy is for aircraft without flaps only.

The RiteAngle™ Buddy is a modern, up to date system that accurately determines your aircraft's angle of attack. This series uses an improved easy-to-understand LED display. This instrument is designed to FAA standards. Green indicates safe, amber indicates caution, and red indicates danger.

P/N 11-06626 ..... $450.00
Ema AOA Basic And Buddy Sensor ..... P/N 11-10392 ..... $50.00

RITE ANGLE ELITE SYSTEM AOA

With the RiteAngle Elite system you have the advantage of having a system which was designed to the FAA guidelines for use on certified aircraft, without all the expense of tracking of parts and having it assembled by a PMA facility, and of course not having to pay for the time, effort, and work involved in getting the STC!

The RiteAngle™ Elite is a modern, up dated system that accurately determines your aircraft's angle of attack. Easy to understand - Green Safe, Amber Caution, Red Danger. There are no computed values, the vane actually measures the relative wind.

Ema Elite Angle Of Attack ..... P/N 11-10389 ..... $875.00
Ema AOA Small Vane Option ..... P/N 11-10390 ..... $85.95
Ema Elite Enhanced Display Opt ..... P/N 11-10391 ..... $200.00

AOA PROFESSIONAL MODEL

This angle of attack instrument is designed for experimental aircraft pilots. The AOA Professional includes a four color liquid crystal display and a aural voice system which warns of critically high AOA, gear position errors and installation/hardware errors. There are no ugly probes, vanes or protrusions to slow you down or accumulate ice.

For Composite Construction
P/N 10-00016 ..... $1,479.00
For Metal Construction ..... P/N 10-00736 ..... $1,375.00

AOA SPORT MODEL

Designed for those tight panels, requiring simplified features but still uses revolutionary patent pending sensing techniques. This angle of attack instrument is only 1/2" wide by 1-3/4" by 1-1/4" deep overall and will fit on or under your glare shield or between instruments as a panel mount in either the vertical or horizontal position. The display is a three color LED ladder and includes the same aural voice warnings as the AOA Professional. It can be powered with a 9V battery or by standard 14 or 28 aircraft bus systems. Excellent for RV's, Glasairs, Lancairs, and other homebuilts.

For Composite Construction ..... P/N 10-04792 ..... $874.00
For Metal Construction ..... P/N 10-04793 ..... $874.00
Aluminum A-Kit - Contains parts that will allow the builder to buy just the parts he needs to install in his wing and up to the panel. (For Either Pro or Sport Systems) ..... P/N 11-11360 ..... $400.00
Composite A-Kit - Contains parts that will allow the builder to buy just the parts he needs to install in his wing and up to the panel. (For Either Pro or Sport Systems) ..... P/N 11-11873 ..... $400.00

SAFE FLIGHT PRE-STALL WARNER

Warns by light and horn of any danger of an approaching stall regardless of the flight maneuver. Never signals unless a stall is imminent. Consists of an instrument panel unit (fits standard 2.25" hole) containing a warning horn & signal light, and a small vane wing unit which operates a relay. Operation of the instrument doesn't depend upon air speed but rather on the air flow conditions of the wing. Complete with installation kit & instructions. Installation time: 2-6 hours.

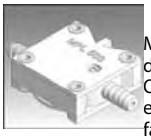
Description	Model	Part No.	Price
Complete Lit	164S (24V)	164S	$2,958.00
Lift Detector	164	164	$2,034.00
Horn & Light	R (12V)	10-22712	$1,459.00
	S (24V)	10-22724	$1,779.00

STALL HORN TESTER

Quickly and easily test your stall warning horn without inhaling bugs or putting your mouth on a freezing wing. With the stall warning horn tester you no longer need a ladder to test stall horn on high wing aircraft. It is an FAA requirement that you test the stall warning device before flight. This effective device eliminates the old way of testing the stall horn - by simply depressing the bellow and releasing the bellow "quickly". Instantly, you can tell if the stall warning horn is functioning. Thousands of this product have been sold throughout the world. The compact size allows you to store it in your flight bag or aircraft compartment. P/N 14-01021 ..... $9.95

ACI STALL WARNER

Few pilots need reminding of the catastrophic consequences of an unintentional stall at low level. A frequent sequence of events is distraction of pilot attention, leading to lack of speed control, with the stall rapidly followed by rotational entry into a spin. Steep ground impact follows all too quickly. We all know about this, but why do stall accidents continue to kill pilots and their passengers year after year? Factors include the rapidity with which our low inertia aircraft lose airspeed, their sensitivity to gusts, the higher frequency of engine failure - and so on. However, very few Experimental and PFA aircraft are fitted with audible stall warners, and yet we are flying aircraft that need them. Virtually every certified production light aircraft has a stall warning system as standard. The ACI Stall Warner is for experimental aircraft only. P/N 10-00235 ..... $295.00



MPL 503 AIR PRESSURE SWITCH

MPL 500 Series switches offer pressure, vacuum, and differential sensors, sensitive to as low as 0.05 in/H 2 O. Their accuracy and reliability offer the designer an excellent general purpose low pressure to electric interface for monitoring and control applications. Miniature size and low cost make the 500 Series ideal for OEM applications. MPL 503 is a Range B switch, which is 0.50 to 3.00 in/H2O

P/N 11-02379 ..... $50.50

IN

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AIRCRAFT SPRUCE EAST
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Prices Subject to Change Without Notice

ALPHA SYSTEMS AOA KITS

ALPHA SYSTEMS AOA FALCON KIT

For Pressurized aircraft and dual displays, call for pricing and availability.
(H: 2.5" D: 1.25" W: 0.865" Weight: Less than 3.00 lbs)
Kit Features The Falcon display is a Light Bar Style display with a remote switch panel. With the Falcon display, when you come in for a landing you want to fly to the blue LED (on speed for landing). Should you come in with too low of an angle of attack, the display will illuminate into the yellow, telling you to put your nose up. Should you come in with too high of an angle of attack, the display with illuminate red, telling you to put your nose down P/N 11-12667 .....$1,995.00

ALPHA SYSTEMS AOA CONDOR KIT

For Pressurized aircraft and dual displays, call for pricing and availability.
(H: 2.38" D: 1.25" W: 2.38" Weight: Less than 3.00 lbs)
Kit Features: This is simply the Falcon System in a round 2-1/4" flush panel mount version. With the display, you will aim for the blue LED when landing and the more LED's that are on, the more lift you have available. P/N 11-12668 .....$1,995.00

ALPHA SYSTEMS AOA GRIFFIN KIT

For Pressurized aircraft and dual displays, call for pricing and availability.
(H: 2.5" D: 1.25" W: 0.865" Weight: Less than 3.00 lbs)
Kit Features- The Griffin display is a Chevron Style display. With the Griffin display, when you come in for a landing you want to fly to the blue donut (on speed for landing). Should you come in with too low of an angle of attack, the yellow chevron will light up and tell you to put your nose up. Should you come in with too high of an angle of attack, the red chevron will light up and tell you nose down. P/N 11-12665 .....$1,995.00

ALPHA SYSTEMS AOA EAGLE KIT

For Pressurized aircraft and dual displays, call for pricing and availability.
(H: 2.5" D: 1.25" W: 0.865" Weight: Less than 3.00 lbs)
Kit Features - The Eagle Display is a Chevron plus Diamond Style display with a remove switch panel. With the Eagle Display, when you come in for a landing you want to fly to the blue donut (on speed for landing). Should you come in with too low of an angle of attack, the yellow chevron will light up and tell you to put your nose up. Should you come in with too high of an angle of attack, the red chevron will light up and tell you nose down. P/N 11-12666 .....$1,995.00

ALPHA SYSTEMS VALKYRIE HUD ADAPTER

Features: Display sold separately. This mounting kit allows either the Eagle, Griffin or Falcon displays to be mounted vertically above the glare shield to make it a "heads up" display.
P/N 11-12671 .....$500.00

AOA HEATED PROBES

Heated Probe has a built in heater of 12V DC that minimizes the potential for ice build up on the leading edge of the probe. Probe comes complete with high temperature fittings and tubing. It is a drop in replacment and can be used or upgraded in the existing Alpha Systems AOA mounting plate.
12V Heated Probe..... P/N 11-09983.....$150.00
24V Heated Probe..... P/N 11-09984.....$198.75

IN

CALL OR VISIT WWW.AIRCRAFTSPRUCE.COM FOR ADDITIONAL ALPHA SYSTEMS PARTS AND KITS.

COMPASSES

AIRPATH COMPASSES

Factory-new Airpath compasses as used in almost all production aircraft. 2.25" size.

Model	Mounting	Lighting	P/N	Price
C2300	Panel	None	10-01340	$134.75
C2300- S. Hemisphere	Panel	12V Red	10-01342	$145.75
C2300-L4	Panel	12V Red	10-01341	$156.95
C2300-L4- S. Hemisphere	Panel	12V Red	10-01387	$166.75
C2400-L4P	Pedestal	12V Red	10-01343	$179.95
C2400-L4P - S. Hemisphere	Pedestal	12V Red	10-01344	$186.75
C2400-L4VT	Overhead	12V Red	10-01345	$246.95
C2400-L4VT - S. Hemisphere	Overhead	12V Red	10-01346	$246.95
C2200-L4 N. Hemisphere	Cessna "Bonded Bracket"	12V Red	10-00592	$173.75
C2200-L4 S. Hemisphere	Cessna "Bonded Bracket"	12V Red	10-05355	$173.75

BULBS FOR AIRPATH COMPASSES

14V.....P/N 11-04016 ..... $1.25 ea 28V.....P/N 11-04015 ..... $0.88 ea

AIRPATH COMPASS REPAIR KITS

Kit consists of diaphragm, 1/2pt of compass fluid & face glass gasket.

Repair Kit (with fluid) ..... P/N 10-08000 ..... $17.85
Repair Kit (without fluid) ..... P/N 10-08020 ..... $16.50
Compass Fluid: 1/2 Pint ..... P/N 10-08100 ..... $1.70
Quart ..... P/N 10-08200 ..... $5.50
Airpath Compass Deviation Card Holder ..... P/N 10-01658 ..... $1.56
Deviation Card ..... P/N 10-01659 ..... $0.65
CB21-914H - Inner gasket ..... P/N 10-00505 ..... $7.50
C21-915G Spacer gasket ..... P/N 10-00368 ..... $1.95
Diaphragm Only ..... P/N 10-01386 ..... $6.50
Glass Compass Lens for C2300/C2400 series compasses. P/N 10-08010 ..... $18.50

ECONOMY COMPASS SEAL KITS

Kit without fluid - includes: (2) Gaskets, (1) Deviation Card, (1) Diaphram P/N 10-04943 ..... $9.75
Kit with Fluid - includes: (2) Gaskets, (1) Deviation Card, (1) Diaphram, (1) 1/2pint Compass Fluid P/N 10-04944 ..... $10.95

C2400 SERIES COMPASS HOUSINGS

C24-730A Housing for C2400L4P Top Panel Mount
P/N 10-04696 ..... $25.50
C24-727A Housing for C2400L4VT Windshield Mount.
P/N 10-04697 ..... $29.85

C2400 W/R INNER CASE - This is inner case compass only. Designed to fit Airpath 2-1/4" as replacement only (for models 2400-L4VT, C2400-L4P). P/N 10-04718 ..... $98.75

FALCON AIRCRAFT COMPASSES

These compasses are very similar to the Airpath C2300 & C2400 style compasses above but are priced more economically. New manufacture. Not certified.

Size	Model No.	Description	Part No.	Price
Northern Hemisphere				
2-1/4"	MCPN-2	Panel Mount	10-02067	$94.75
2-1/4"	MCPN-2L	Panel Mount, Lighted	10-02069	$102.75
2"	MCDN-2	Pedestal Mount	10-02071	$102.75
2"	MCDN-2L	Pedestal Mount, Lighted	10-02070	$107.75
Southern Hemisphere				
2-1/4"	MCPS-2	Panel Mount	10-02068	$97.75
2-1/4"	MCPS-2L	Panel Mount, Lighted	10-02243	$102.75
2"	MCDS-2	Pedestal Mount	10-01704	$105.75
2"	MCDS-2L	Pedestal Mount, Lighted	10-05220-SO	$109.95

FALCON VERTICAL CARD COMPASSES

It is easy to read presentation and see the complete 360 degree dial in proper relation to your aircraft heading. 14V, lighting. 2-1/4"

Model	Description	Part No.	Price
MCVC-2L-A	N. Hemisphere Compass Only	10-05276	$229.95
MCVC-2L-A-M	N. Hemisphere Compass & Bracket	10-04174	$259.95
MCVC-2SL-A	S. Hemisphere Compass Only	10-04489	$238.95
MCVC-2SL-AM	S. Hemisphere Compass & Bracket	10-04490	$259.95
30-V-0001	Vertical Card Compass Universal Mounting Bracket	10-04175	$26.50

PRECISION VERTICAL CARD COMPASS

The Precision Vertical Card Compass is a totally new concept for today's aircraft. It is a dry compass, designed to replace the float/liquid type compass; no more leaking fluid or backward azimuth readings. It uses eddy current damping and as such has no overshoot. It consists of a 2"vertical rotating dial which is compared with a fixed miniature airplane (lubber line) to present the magnetic heading of the aircraft at all times. Heading information is more natural because the heading is read at the 12 o'clock position and off the nose of the miniature aircraft. The compass card rotates and presents all quadrants in their true relation to line of flight. Requires no power (except for lighting) to operate. Fully TSO'd. Installed in many current production aircraft and helicopters. Size: 2-7/8"H x 2-3/8"W x 2-1/8"D. Wt. 0.6 lb. After installation, compass must be compensated using standard compensation procedures. Also used in sailplanes. Bracket / mount is required for installation and is not included with unit.

Northern Hemisphere 14V..... P/N 10-00421 ..... $299.95
Northern Hemisphere 28V..... P/N 10-00423 ..... $299.95
Southern Hemisphere 14V ..... P/N 10-00422 ..... $306.00
Southern Hemisphere 28V ..... P/N 10-00424 ..... $309.00

REPLACEMENT LIGHT BARS FOR PAI-700

14V ..... P/N 10-00092 ..... $31.65
28V ..... P/N 10-00093 ..... $31.65
5V Light Assy..... P/N 10-02956 ..... $31.50

PRECISION COMPASS MOUNTS

PACMG-2 – Universal mount for many aircraft using a glare shield or deck mount. Models include Beech Baron and Bonanza, Cessna Skyhawk, Skylane and Cardinal. ..... P/N 10-07500 ..... $26.50
PACMO-U – Universal overhead bracket kit for customer adaptation. P/N 10-07600 ..... $27.50
PACMO-CESNO – Custom mount for several Cessna models using one-piece windshield & compass mounting block. Models include Cessna 150,152,170,180,182,185 & 210. ..... P/N 10-07700 ..... $44.50
PACMO-PIPER – Custom mount for several Piper models with 5/8" hat-section center windshield post. Models include Piper Cherokee, Warrior, Arrow, Archer, Lance, Comanche, Navajo & Cherokee Six. P/N 10-07800 ..... $43.50
PACMO-APZ21 – Custom mount for use in Piper Apache, Aztec, & Cessna 421. ..... P/N 10-07910 ..... $45.75
PACMO-SRN – Custom mount for use in Beech Sierra using windshield mount. P/N 10-07920 ..... $44.50
PACMO-KA – Beech King Air. ..... P/N 10-07921 ..... $44.65
PACMO-EB – Early Bellanca. Compass mounted overhead. P/N 10-07922 ..... $49.99
PACMO-LB – Late Bellanca. Compass mounted on windshield. P/N 10-07923 ..... $43.65
PACMO-2CN – Cessna early 172, 182 with compass mounted on windshield with 1" center with 1" divider strip. ..... P/N 10-07924 ..... $45.75
PACMO-340R – Cessna 340 Twin. ..... P/N 10-07925 ..... $63.75
PACMO-310RN – Cessna 310 Twin. ..... P/N 10-07926 ..... $54.85
PACMO-GTR – Grumman Tiger, Cheetah. ..... P/N 10-07936 ..... $44.50
PACMO-MHN – Mooney compass mounted on housing covering center post. P/N 10-07927 ..... $44.50
PACMO-HMN – Mooney compass mounted on center post with horizontal screws. P/N 10-07928 ..... $43.65
PACMO-VMN – Mooney compass mounted on center post with vertical screws. P/N 10-07929 ..... $43.65
PACMO-PCN – Comanche with no center post use PACMG-2, twin, SE. P/N 10-07931 ..... $43.65
PACMO-R22 – Robinson R22. ..... P/N 10-07932 ..... $49.85
PACMO-R44 – Robinson R44. ..... P/N 10-07933 ..... $49.85
PACMO-RV6C – RV6 kit. (Sliding Canopy only, not tip-up) P/N 10-07934 ..... $50.50
PACMO-HSN3A – 32.50 40.63 Schweizer 300 & 300 CB. P/N 10-07935 ..... $61.85
PACMO-3/4P – w/ a 3/4" post ..... P/N 10-00426 ..... $49.50
PACMO-5/8P – w/ a 5/8" post ..... P/N 10-00431 ..... $47.80
PACMO-7/8P – w/ a 7/8" post ..... P/N 10-00432 ..... $50.50
PACMO-ARCP – Ercoupe ..... P/N 10-00435 ..... $51.75

COMPASS COMPENSATOR

Very sensitive to stray magnetic fields within the aircraft. If the compensators of the compass will not bring the compass within tolerances, it will be necessary to install the PBB475 compensator ("balanced balls"). These balls contain magnets which permit the compass to be properly compensated. Instructions furnished. P/N 10-07900 ..... $46.85

MAGNETIC COMPASS SHIELD

Use this .005" x 5" x 12" metal strip to shield the precision PAI-700 compass from magnetic interference in the instrument panel. P/N 11-00973 ..... $21.65

NON-MAGNETIC SCREWDRIVER FOR COMPASSES

This small non-magnetic screwdriver blade is ideal for adjusting magnetic compasses. This blade is durable, corrosion resistant, & can be put on a key chain until needed. ..... P/N 10-07930 ..... $7.50

IN

SIRS "PEGASUS" (TSO'D)

Utilizes high quality components throughout, including Silicone rubber seals, metal expansion bellows, and Tungsten Carbide pivots. Has a high-visibility spherical display, and can be viewed over a 140° arc instead of the standard 90°. Fits standard 2-1/4" panel hole (by 2-1/4" deep) and weighs only 30% of a typical liquid compass. Blue/white lighted or unlighted versions, and has a 3-yr. warranty.

NORTHERN HEMISPHERE					
P/N	LIGHT	PRICE	P/N	LIGHT	PRICE
PG-2A	NONE	$209.95	PG2C-28	28V BLUE	$232.95
PG2C-12	12V BLUE	$232.95			
SOUTHERN HEMISPHERE					
P/N	LIGHT	PRICE	P/N	LIGHT	PRICE
PG-2ASH	NONE	$246.95	PG2C-12SH	12V LIT	$248.00
PG2C-28SH	28V LIT	$231.95			

SIRS "NAVIGATOR" (TSO'D)

Delivers extremely accurate readings due to it's fully integrated, 4 magnet correction facility. Same features as "Pegasus", but is mounted with a fully adjustable bracket. This allows the compass to be mounted in a variety of positions located away from magnetic influences. Size: 20-3/8"h x 2-1/4"w. "Navigator" comes in lighted or unlighted versions; 3yr. warranty.

NORTHERN HEMISPHERE					
P/N	LIGHT	PRICE	P/N	LIGHT	PRICE
NV-2A	NONE	$209.95	NV2C-28	28V BLUE	$232.95
NV2C-12	12V BLUE	$229.00			
SOUTHERN HEMISPHERE					
P/N	LIGHT	PRICE	P/N	LIGHT	PRICE
NV2C-12SH	NONE	$259.95	NV2C-28	28V LIT	$258.95
NV2C-12V-SH	12V LIT	$259.95			

NAVIGATOR MOUNTING BRACKETS & ACCESSORIES

Description	Part No.	Price
Install Kit for Pegasus Compass	10-02124	$41.85
MF1 Short foot (self adhesive)	10-00277	$26.90
Glareshield Mount for SIRS Nav Compasses	10-00276	$43.50

SIRS NAVIGATOR NV2-2400X

Designed to be installed on the glareshield using the same location holes required for other compass installations. Features silicone seals. The display shows 140° of heading, as opposed to the 90° view offered by standard compasses. TSO'd Navigator comes in 6, 12, & 28V configurations, with a 3 year warranty.

Northern Hemisphere		
Description	Part No.	Price
NV2A-2400 UNLIT COMPASS	10-00401	$225.95
NV2C-2400 LIT COMPASS 12V	10-00467	$232.95
NV2C-2400 LIT COMPASS 28V	10-00468	$225.00
Southern Hemisphere		
Description	Part No.	Price
NAV TSOD COMPASS 28VLIT SH	10-02131	$258.95
NAV NV2A-2400 UNLIT COMPASS SH	10-02132	$256.95
NV2C-2400 LIT COMPASS 28V SH	10-02134	$254.95
NV2C-2400 LIT COMPASS 12V SH	10-02133	$254.95
NAV TSOD COMPASS UNLIT SH	10-02129	$225.95
Accessories	Part No.	Price
INSTALL KIT NAV.SERIES COMPASS	10-02123	$39.75

SIRS MASTER COMPASS

Graduated in 1/2 degree intervals and the compass is supplied with a calibration chart indicating any deviations in minutes of arc. Ideal for use with larger aircraft. A specical reverse-read version (954-2399REV) is available to indicate the same headings as those read from the aircraft instruments during the compass swing operation, when viewing from the front of the aircraft. Magnetic headings are viewed through a magnified prism and a special mounting Tripod is available (non-magnetic tripod) to ensure steady readings PN 10-04231 Warranty: 3 years Accuracy: Better than 30 Minutes Tilt: 7 Degrees

Standard Compass .....P/N 10-04230.....$2,263.00
Reverse Read Compass.....P/N 10-04817.....$2,379.00
Tripod.....P/N 10-04231.....$968.00

SIRS HAND HELD PRISMATIC MASTER COMPASS

Designed to meet demanding requirements of the Aviation and Military environments where accurate bearings are required. Supplied with a calibration certificate and can be configured with reversed readings to assist with aircraft wings. Ideal for use with small to medium aircraft. The liquid damped card is divided in 2 degree increments.Warranty: 3 years. Dial Markings: DegreesTilt: 15 Degrees.

Standard Compass .....P/N 10-04232.....$1,294.00
Reverse Read Compass.....P/N 10-04816.....$1,334.00

BARC TOP HAT RITEWAY COMPASS

Ultra light and Experimental Aircraft correct turn sense magnetic compass. Built upside down and backwards! But by viewing it through a 45 degree turning mirror the vertical image exhibits the correct turning sense. Rotates "with the turn" like a Directional Gyro instead of "opposite the turn" of the typical magnetic compass. Sun light illumination is used to back light the compass card. .....P/N 10-05249..... $59.00

BARFIELD SIGHT CALIBRATION COMPASS

The SC063 is used to check the mounted aircraft compass. Our sight compass, is a portable, self contained calibration device consisting of a modified aircraft compass which has been re-screened to indicate 180º from normal. Since the sight compass is 180º away from normal, it permits the operator to stand facing the aircraft, making it considerably easier to transmit signals to and from the aircraft cockpit. The SC063 is unique in that the compensating magnets have been removed and a combination magnifying lens and collimating sight added. The compensator has been removed so the compass indicates magnetic direction at all times and is not subject to calibration offsets. The magnifying lens increases the readability of the dial and the collimating lens insures precise sighting alignment. Attached to the rear of the compass is an adjustable sight lens.....P/N 10-05357.....$1,337.00

ICEMAN CARBURETOR ICE DETECTION SYSTEM

Fits into a 2-1/4" or 3-1/8" instrument cut-out (or optional bracket) on the panel. The system works on normal 12 or 24V aircraft electrical systems. No temp gauge, no worries about humidity, no graph. Enables an interface with the audio panel, effectively "piping" the ice alert warning sound right into the headset. The ICEMAN is a sealed, solid state unit weighing only 5oz and is currently approved by the FAA in the United States, certified by the CAA, by Transport Canada, and validated in Australia. Probe is included with the system. The Iceman is approved for most general aviation aircraft. Approval list available on request

Iceman System (2-1/4").....P/N 10-00057.....$369.00
Remote Mounting Brckt (for 2-1/4" only).....P/N 10-00060.....$12.50
3" Front Plate.....P/N 10-02163.....$13.00

ARP CARBURETOR ICE DETECTION SYSTEM

Made in USA. Available in three (3) different mounting configurations (Panel Mount, Remote Mount and Universal Mount) thus providing flexibility for any aircraft installation. GIVES UP TO 5 MINUTES WARNING TIME by illuminating a RED visual ice warning light. LIGHT WEIGHT less than 13 ounces. SIMPLIFIED INSTALLATION keeps installation cost down – approx. 1 to 3 man-hours. WARRANTY 3-Years on Electronics Box and 1-Year on Probe. FAA-STC SA489EA APPROVED for normal, utility and acrobatic airplanes and helicopters equipped with Continental, Franklin and Lycoming type engines and Precision Air-Motive (Facet or Marvel-Schebler) MA-2, MA-3, MA-3A, MA-3SPA, MA-4, MA-4-5, MA-4SPA, MA-5, MA-6, MA-6AA and HA-6 series carburetors. Installation on other aircraft not specified on the STC may be performed via FAA Form 337. FAA-PMA APPROVED for installation on Type Certificated aircraft.

Panel Mount, 12V (107AP-12).....P/N 10-09900.....$413.00
Remote Mount, 12V (107AP-R-12).....P/N 10-03708.....$457.00
Remote Mount, 24V (107AP-R-24).....P/N 10-03709.....$424.95
Universal Mount, 12 (107AP-U-12).....P/N 10-03697.....$429.95
Universal Mount, 24 (107AP-U-24).....P/N 10-03698.....$439.00
Spare Probe (107AP-P).....P/N 10-03710.....$187.95

FLIGHT DATA SYSTEMS FC-10

Flow: Instantaneous Display of Fuel Flow , Used: Fuel Used , Remaining: Fuel Remaining , Endurance: Time or Distance Remaining , Required: Fuel Required to Active GPS Waypoint , Reserve: Fuel or Time Remaining at Active GPS Waypoint , Efficiency: Miles Per Gallon (or Liter) Displays Fuel Flow and Fuel Used for Each Engine (Two Engine Systems) Features: Communicates with Handheld or Panel Mount GPS , User Selectable Units (Gallons, Liters, Nautical Miles, Statute Miles) , Low Fuel Warning , Best Fuel Computer Value Available , Large Extreme Operating Temperature Display , Soft Orange Backlight with Automatic Brightness , Weighs 2.6oz 12-28 Volt Compatible , Includes El FT 60 (less than 350 HP - Fuel Pump) , Includes Pre-Wired Harness , Connector is pin to pin compatible with many JPI, Hoskins, and Shadin Systems .

FC-10 Single Engine (additional sender req.).....P/N 10-03150.....$369.95
FC-10 Twin Engine.....P/N 10-03151.....$535.00
FC-10 With Out Sender.....P/N 10-03152.....$235.95

FLIGHT DATA SYSTEMS AFP-30 FUEL COMPUTER

Designed for the experimental aircraft owner who wants instantaneous flight information previously reserved only for transports and private jets. Features complete Winds Aloft information, Airspeed information including: True Airspeed and Mach number, Altitude information such as Density Altitude and Vertical speed, and both Total and Saturated Air Temperature. Complete with GPS communication enabling it to display fuel computer data. The Performance Computer function calculates, instantaneously, Percent Horsepower based on the engine manufacturer's power chart. Backup Tachometer and Manifold Pressure indications. Compatible with most handheld and panel mount GPS units.....P/N 10-03154.....$699.00

IN

MID-CONTINENT INSTRUMENTS AND AVIONICS CARBURETOR TEMPERATURE INDICATORS

The MD-11 carburetor temperature gauge & B-5 temp. probe are designed to help eliminate carburetor icing by early detection, reduce spark plug fouling, extend engine life, increase range & power, and maximize fuel economy. Designed for use with most Marvel-Schebler & Bendix float type carburetors. FAA approved. Mounts in 2-1/4" instrument hole.

14V carb air temp indicator only ..... P/N MD-11-3 ..... $530.00
28V carb air temp indicator only ..... P/N MD-11-4 ..... $533.00
B-5 probe only ..... P/N B-5 ..... $343.00
Mating Connector ..... P/N 10-01563 ..... $13.50
14V Carburetor Air Temperature Kit ..... P/N 10-02759 ..... $829.00
28V Carburetor Air Temperature Kit ..... P/N 10-02760 ..... $829.00

2-1/4" UMA MANIFOLD PRESSURE GAUGES

Manifold pressure is one factor used to obtain correct power setting of the engine. The indicators are temperature and altitude compensated. Matte-white dials. Units are new. Manufactured by UMA.

2-1/4" Gauge, 10-50 Hg. ..... P/N 10-11200 ..... $152.75
2-1/4" Gauge, 10-35 Hg. ..... P/N 10-11250 ..... $152.75
UMA optional internal lighting ..... P/N 11-07239 ..... $56.75

FALCON 3 1/8" MANIFOLD GAUGE

Falcon Gauge Manifold Pressure Gauge is designed and manufactured for use on aircrafts and is a standard diaphragm pressure instrument. This indicator is temperature and altitude compensated. Manifold pressure is one of the factors required to obtain the correct power setting of the aircraft engine.

10-50 IN HG ..... P/N 10-02269 ..... $182.75
10-35 IN HG ..... P/N 10-02270 ..... $176.75

3-1/8" UMA MANIFOLD PRESSURE GAUGES

P/N 10-00080

3-1/8" Gauge, 10-35Hg. ..... P/N 10-00080 ..... $258.00
3-1/8" Gauge, 10-50Hg. ..... P/N 10-11300 ..... $246.95
UMA optional internal lighting ..... P/N 11-07239 ..... $56.75

UNITED TSO'D MANIFOLD PRESSURE GAUGES

Range	Part Number	Price
10 TO 35	10-05452	$795.00
10 TO 35	10-05453	$1,245.00
10 TO 50	10-05454	$795.00
10 TO 50	10-05455	$1,245.00
10 TO 75	10-05456	$795.00
10 TO 75	10-05457	$1,245.00

UMA FUEL/AIRBOX DIFFERENTIAL PRESSURE GAUGE

Displays the differential pressure between the fuel system and air box on turbo charge engines where it is necessary to maintain constant fuel pressure that is above the airbox pressure. Sender sold separate. (Requires the use of a 1EU007D UMA different pressure sneder.)

1 1/4" ..... P/N 10-00979 ..... $191.75
Sender 0-7 PSI ..... P/N 10-00980 ..... $132.75

ROCHESTER OIL PRESSURE GAUGES

Rochester oil pressure gauges have matte-white dial with black bezel. Mount in 2-1/16" dia. hole. 1/8" NPT port fits AN910-1D coupling. New mfg.

0-50 PSI ..... P/N 10-22301 ..... $83.50
0-80 PSI* ..... P/N 10-00015 ..... $39.75
0-120 PSI ..... P/N 10-22302 ..... $47.50

*Chrome Bezel

MINI WATER PRESSURE GAUGE

Range	P/N	Price
(-5)-25 PSI	10-22241	$203.95
(-15)-15 PSI	10-22248	$203.95

ROCHESTER OIL TEMPERATURE GAUGES

Rochester oil temperature gauges have matte-white dial with black bezel. Mount in 2-1/16" dia. hole. New manufacture. Furnished with one 5/8-18UNF X 5/8-18UNF adapter nut. Available in the following temperature ranges and capillary lengths.

P/N 10-11600 ..... 100-250°F ..... 60" Cap $83.75
P/N 10-11700 ..... 100-250°F ..... 72" Cap $91.50
P/N 10-11800 ..... 00-250°F ..... 144" Cap $89.95
10-11900 ..... 100-250°F ..... 48" Cap $91.50
Adapter Nuts Only: 44-0024 5/8-18UNF x 5/8-18UNF $11.95

MECHANICAL OIL TEMPERATURE GAUGE

A quality gauge which is complete with all installation fittings. Range is 100-250° F. 5/16-18 female capillary adapter fitting. 60" lead length Not FAA approved.

P/N 10-00954 ..... $116.75

OIL TEMPERATURE BULB ADAPTER

Brass fitting used to shorten long capillary bulbs for use in light aircraft engines. Internal 5/8-18 threads mate with fitting on bulb. External 5/8-18 threads fit into engine.

P/N 95527 ..... $18.50

MILITARY OIL PRESSURE GAUGE

AN5771-2 Military style gauge with sq. case. Mounts in 2-1/4" dia. hole. New surplus. Matte-White Dial (0-150 PSI) P/N 10-00955 $249.95

MECHANICAL OIL PRESSURE GAUGE

Scott's quality Oil Pressure Gauge features 0-120 PSI range and 1/8 NPT thread on flared tube fitting. Not FAA Approved P/N 10-00956 ..... $253.95

OIL PRESSURE INSTALLATION KIT

This kit contains 4 Weatherhead brass fittings with 1/8" pipe thread & 6 ft. of 1/8" Nylo-Seal tubing. Compatible with most mechanical oil pressure gauge installations.

P/N 10-12000 ..... $7.75

MS28034-3 ENGINE TEMPERATURE SENSOR

Presently in use in government and general aviation industry under liquid and gaseous conditions, this sensing device exceeds stringent U.S. Military Specifications for response time, burst pressure, and AC high potential tests.

P/N 10-01668 ..... $199.50

3-IN-1 GAUGES (ELECTRIC OIL TEMP)

Oil temperature range is -50° to 150°C, oil pressure 200 psi, fuel pressure 0-25 psi. The pressure gauges operate by direct connection to the appropriate system and the oil temperature by an electrical resistance bulb probe. New installation requires Cannon plugs & cable clamps for instrument and resistance bulb.

Certified Overhauled Unit - Gauge ..... P/N 10-12800 ..... $685.00
3-IN-1 White Electric Gauge Farenheight ..... P/N 10-03144 ..... $685.00
MS3106A-14S-2S Cannon Plug P/N 10-00790 ..... $12.50
MS3057-6A Cable Clamp for Instrument ..... P/N 10-00957 ..... $2.95
MS28034-1 Res. Bulb,1-7/8" (#563BH) ..... P/N 10-00953 ..... $184.95
MS3106A-12S-3S Cannon Plug (Res.Bulb) ..... P/N 10-00958 ..... $15.85
MS3057-4A Cable Clamp for Res. Bulb ..... P/N 10-00959 ..... $4.85

P/N 10-03441

KELLY MANUFACTURING TORQUE INDICATORS

Our Torque Indicators are a wet line, direct reading bourdon tube type instru-ment, housed in a 2" diameter case. Unit can be calibrated over a wide rage of PSI input to direct read torque. Units can be furnished to your specifications. Indicate needed pressure input and pressure-to-torque conversion. This unit cannot be damaged by oil back up in vent line. DIMENSIONS: 2" diameter x 2.125" length, Weight: 0.4 lbs, Power: Wet line direct reading pressure gage

Model No. / Part No.	Description	Price
27-3007-1 P/N 10-03441	0 to 1800 FT/LB, Green Arc 0 - 1628, Red Line at 1628	$529.00
27-3007-4 P/N 10-03442	0 to 75 P.S.I, Green Arc 0 - 64.4, Red Line 64.4	$529.00
27-3007-7 P/N 10-03443	0 to 75 P.S.I 0 to 53	$469.95

KELLY MANUFACTURING OIL TEMPERATURE INDICATOR

Housed in a 2" diameter case, this instrument can be calibrated in C° or F°. Oil Temperature is sensed by a MS28034-1 resistance bulb. DIMENSIONS: 2" Dia. x 3.12" L Weight: 0.4 lbs Power: 28VDC Connector: MS3112E8-4P

29-1004-10 - Green Arc 0° C -110° C, Yellow Arc -40° C - 0° C Red Line -40° & 110° C ..... P/N 10-03445 ..... $375.95

IN

UMA ENGINE GAUGES

UMA 2-1/4" SINGLE EGT GAUGES

These highly reliable and lightweight gauges are self-contained, requiring no external power source. Specify probe size and type. Standard markings are black and white.

P/N 10-22275

2-1/4" EGT Gauge
700-1700°F- 90° Sweep..... P/N 10-22275..... $152.75
700-1700°F- 270° Sweep..... P/N 10-02427..... $143.75
Type K EGT Probes
1-5/8" - 2-1/2" Clamp..... P/N 10-04791..... $83.75
1-2" Clamp..... P/N 10-00966..... $83.75
8mm, Bayonet-Rotax..... P/N 10-00967..... $83.75
Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter)..... P/N 11-07239..... $56.75

ELECTRONIC UMA 2-1/4" OIL PRESSURE GAUGE

This reliable and rugged instrument is designed using a moving coil type movement for aircraft use. The electronic pressure gauge connects to pressure transducer which mounts directly to aircraft engine. Made in USA. Order transducer separately.
0-80 PSI..... P/N 10-22245..... $143.75

UMA 2-1/4" WATER TEMPERATURE GAUGE

This instrument is designed to be durable yet lightweight. Excellent for a wide variety of homebuilt aircraft applications. Made in USA. Order probe separately.
0-300°F..... P/N 10-02058..... $143.75
Probes
1/8" NPT (Rotax).... P/N 10-00968..... $69.75
3/8-24 (automotive)
P/N 10-00969..... $69.75

UMA 2-1/4" OIL TEMPERATURE GAUGE

This instrument is designed to be durable yet lightweight. Excellent for a wide variety of homebuilt aircraft applications. Made in USA. Order probe separately.
100-300°F..... P/N 10-22285..... $147.75

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting..... P/N 11-07239..... $56.75

UMA 2-1/4 INCH ELECTRICAL OIL PRESSURE TACH 0-130 PSI ROTAX 912/914

UMA 2-1/4 Inch Electrical Oil Press Tach 0-130 PSI Rotax 912/914
2 1/4" Air Core (270° Sweep)
P/N 10-05510 ..... $176.75

UMA 3 IN 1 ELECTRONIC INSTRUMENT

While rumors have been circulating regarding a new way to maximize on space, saving instruments, UMA has now developed a product line that can combine any three electronic instruments into a 3-1/8" case.
Standard product is with black and white dials, but UMA's reputation is to provide custom range markings and to meet customer demand for specific design. THe 3-in-1 can now satisfy space saving, custom markings, and combine any selection of 3 instruments into a 3-1/8" opening to fit your needs ...Customization is Great!!
*Note - Senders are required and sold separately.
P/N 10-03452 ..... $453.00
UMA Range Markings ..... P/N 10-02792 ..... $125.00

MECHANICAL UMA 2-1/4" FUEL PRESSURE GAUGE

These factory new fuel pressure gauges from UMA fit standard 2-1/4" panel hole. They are mechanical, wet-line gauges and require no sending unit.
0-25 PSI..... P/N 10-02356 ..... $205.95
0-50 PSI..... P/N 10-00316 ..... $203.95
0-10 PSI..... P/N 10-22201 ..... $205.95
0-30 PSI..... P/N 10-22203 ..... $203.95
0-100 PSI ..... P/N 10-22205 ..... $203.95

MECHANICAL UMA 2-1/4" OIL PRESSURE GAUGE

These factory new oil pressure gauges from UMA fit standard 2-1/4" panel hole. They are mechanical, wet-line gauges and require no sending unit.
0-50 PSI..... P/N 10-22240 ..... $203.95
0-130 PSI ..... P/N 10-22242 ..... $204.95
10-100 PSI..... P/N 10-02357 ..... $205.95

UMA 1" PRESSURE GAUGES

This mechanical, direct hook-up pressure indicator is ideal for monitoring the engine pump cooling system. Suitable to a wide variety of homebuilt aircraft applications. Made in USA. 0-10 PSI (water)
P/N 10-22247 $183.75

UMA 1" OIL PRESSURE GAUGE

Case is molded ABS plastic. Wt:1.4oz. Black and white dial markings. 25-125 PSI.
P/N 10-22251 $175.75

UMA 1" FUEL PRESSURE GAUGE

Case is molded ABS plastic. Wt:1.4oz. Black and white dial markings. 0-10 PSI.
P/N 10-22252 $184.75

MECHANICAL UMA 2 1/4" WATER PRESSURE GAUGE

This mechanical, direct hook-up pressure indicator is ideal for monitoring the engine pump cooling system. Suitable to a wide variety of homebuilt aircraft applications. Made in USA. -15 to +15 PSI
P/N 10-22249 $201.95

2-1/4 INCH UMA WATER TEMPERATURE 100-300F

2-1/4 inch UMA Electronic (UMA P/N 12-360-300F°) Water Temperature Gauge, Range: 100-300 deg. F°
P/N 10-02058..... $143.75

UMA 2 1/4" FLAP POSITION INDICATOR

This 2-14" flap indicator uses a resistance potentiometer as a flap position sensor. Transmitter required. Wt: 9.8 oz.
Indicator (0-40°)..... P/N 10-22250 ..... $192.80
Indicator (0-50°)..... P/N 10-22265 ..... $179.95
Indicator (0-60°)..... P/N 10-02442 ..... $191.75
Transmitter..... P/N AN5785 ..... $216.95

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting..... P/N 11-07239..... $56.75

MINI OIL PRESSURE GAUGE

Miniature mechanical instrument, only 1-1/4" dia., as used in many production aircraft. New manufacture.
0-125 PSI Oil Press. ..... P/N 10-12400 ..... $205.95

MINI FUEL PRESSURE GAUGES

1-1/4" Dia. New manufacture by UMA.
0-10 PSI Fuel Press..... P/N 10-12100 ..... $204.95
0-35 PSI Fuel Press..... P/N 10-12200 ..... $206.95
0-50 PSI Fuel Press..... P/N 10-12300 ..... $203.95

IN

2-1/4 inch
UMA Electronic
Oil Pressure Gauge
Case: Valox 420
Plastic Weight:
4.7 oz.

UMA 2-1/4" ELECTRONIC OIL PRESSURE 270°GAUGE

Electronic Oil Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4", 0-60 PSI, TSO'd ..... P/N 10-02415 ..... $203.95
2-1/4", 0-80 PSI, TSO'd ..... P/N 10-02416 ..... $203.95
2-1/4", 0-100 PSI, TSO'd ..... P/N 10-02417 ..... $203.95
2-1/4", 0-100 PSI ..... P/N 10-02424 ..... $143.75
2-1/4", 150 PSI ..... P/N 10-02761 ..... $143.75

SENDER NOT INCLUDED
SEE NEXT PAGE FOR SENDERS

DATCON OIL PRESSURE SENDER

Thread sizes: 1/8"-27 NPTF, #10-32 terminals, Common ground through mounting thread, 0-80 psi/0-5 bar range and 240-33.5 Ohms. P/N 10-05329 ..... $29.85

2-1/4 inch
UMA Electronic
Fuel Pressure Gauge
Case: Valox 420 Plastic
Weight: 4.7 oz.

UMA ELECTRONIC FUEL PRESSURE 270°GAUGE

Electronic Fuel Pressure Gauges connect to a pressure transducer and connects to the gauge with wires. Standard dial markings are black and white.

2-1/4", 0-7 PSI, TSO'd ..... P/N 10-02412 ..... $203.95
2-1/4", 0-15 PSI, TSO'd ..... P/N 10-02413 ..... $203.95
2-1/4", 0-60 PSI, TSO'd ..... P/N 10-02414 ..... $203.95
2-1/4", 0-30 PSI ..... P/N 10-02422 ..... $143.75
2-1/4", 0-60 PSI ..... P/N 10-02423 ..... $131.95

SENDER NOT INCLUDED
SEE NEXT PAGE FOR SENDERS

2-1/4 inch
UMA Electronic
Hydraulic Pressure
Gauge Case: Valox
420 Plastic Weight:
4.7 oz.

UMA ELECTRONIC 2-1/4" HYDRAULIC PRESSURE 270° GAUGE

Electronic Hydraulic Pressure gauge connects to a precision, high pressure transducer which mounts directly to the aircraft's hydraulic system. Standard markings are black and white.

2-1/4", 0-2000 PSI, TSO'd
P/N 10-02459 ..... $203.95

SENDER NOT INCLUDED
SEE NEXT PAGE FOR SENDERS

2-1/4 inch
UMA Electronic
Oil Temperature Gauge
Case: Valox 420 Plastic
Weight: 4.8 oz.

UMA 2-1/4" ELECTRONIC OIL TEMPERATURE 270° GAUGE TSO'D

These rugged aircore gauges work with either thermocouple or thermister probes. Standard markings are black and white.

100-300° F, TSO'd ..... P/N 10-02443 ..... $204.95

SENDER NOT INCLUDED
SEE NEXT PAGE FOR SENDERS

P/N 10-02057

UMA ELECTRONIC 2-1/4" CHT 270° GAUGE

These gauges are available for either thermocouple or thermistor probes. Standard markings are black and white.

2-1/4", 100-300 °F - compatable with VDO ..... P/N 10-02426 ..... $143.75
2-1/4", 100-600 °F - 90° sweep for use with thermocouple powered aircraft ..... P/N 10-02429 ..... $152.75
2-1/4", 100-600 °F - 270° sweep for use with internal powered aircrat
P/N 10-02057 ..... $143.75

TYPE J CHT PROBES

10mm Spark Plug Ring ..... P/N 10-00960 ..... $70.00
12mm Spark Plug Ring ..... P/N 10-00961 ..... $70.00
14mm Spark Plug Ring ..... P/N 10-00962 ..... $70.00
18mm Spark Plug Ring ..... P/N 10-00963 ..... $71.90
3/8"-24 Bayonet w/snap ..... P/N 10-00795 ..... $99.75

UMA TSO'D TEMPERATURE PROBES

T3B1 1/8 NPT TSP Type K with 6' Lead ..... P/N 10-05164 ..... $90.00
T3B2 3/8-24 TSO Type K with 6' Lead ..... P/N 10-05165 ..... $90.00
T3B3 5/8-18 TSO Type Kwith 6' Lead ..... P/N 10-05166 ..... $89.50
T3B3A 5/8-18 TSO Type Kwith 6' Lead ..... P/N 10-05167 ..... $90.00
T3B11 1/4-18 TSO Type Kwith 6' Lead ..... P/N 10-05168 ..... $90.00

UMA ELECTRONIC 2-1/4" WATER TEMPERATURE 270° GAUGE

2-1/4 inch UMA Electronic (UMA P/N T12212U300F000) Water Temperature Gauge Range: 100-300 deg. F TSO2-1/4", 100-300 °F TSO'd
P/N 10-02428 ..... $203.95

UMA ELECTRONIC 2-1/4" CARBURETOR AIR TEMPERATURE 270° GAUGE

These gauges use either thermistor or electronic sensors. Standard markings are black and white.

2-1/4", -60-120 °F TSO'd ..... P/N 10-04670 ..... $203.95
2-1/4", -20-120 °F ..... P/N 10-02391 ..... $143.75

UMA TSO'D 2-1/4 CARBURATOR AIR TEMPERATURE GAUGE

TSO'd Carburetor Temperature 2 1/4" gauge. Range from -60 - 120°F.

NOTE: This is the standard black and white gauge. For color range markings as shown you must add the color range markings part no. to your order.

P/N 10-03465 ..... $205.95
UMA Color Range Markings ..... P/N 10-02792 ..... $125.00

UMA 2-1/4" ELECTRONIC MANIFOLD PRESSURE 270° GAUGE

Electronic Manifold Pressure gauges connect to a pressure transducer which connects to the aircraft's engine and indicates the absolute pressure in the intake manifold of the aircraft. These units are very precise and avoid plumbing issues. Standard markings are black and white.

2-1/4", 5-35 IN. HG. ..... P/N 10-02389 ..... $143.75
2-1/4", 5-50 IN/ HG. ..... P/N 10-02390 ..... $143.75

SENDER NOT INCLUDED
SEE NEXT PAGE FOR SENDERS

UMA 2-1/4" ELECTRONIC OUTSIDE AIR TEMPERATURE

The digital Outside Air Temperature (O.A.T.) is available in either Fahrenheit or Celsius. Standard models use a Red LED display.

2-1/4", -40-60 °C, 270° ..... P/N 10-02387 ..... $200.00
2-1/4", -40-140 °F, 270° ..... P/N 10-02388 ..... $200.00
2-1/4", 0-100 °C ..... P/N 10-00205 ..... $200.00
2-1/4", -40-165 °F ..... P/N 10-00206 ..... $202.95

SENDER NOT INCLUDED
SEE NEXT PAGE FOR SENDERS

UMA DUAL AMP/VOLTMETERS

These 2-1/4" dual amp voltmeters are ideal for any aircraft where panel space is limited. Amperage is displayed at all times, and simply push a button to display voltage. Complete with gauge and shunt. Voltage range 0-30 volts.

Range: 30 amp ..... P/N 10-14680 ..... $288.95
60 amp ..... P/N 10-14685 ..... $283.95
80 amp ..... P/N 10-14690 ..... $282.95
100 amp ..... P/N 10-14695 ..... $282.95
0-150 amp ..... P/N 10-00082 ..... $282.95
UMA Optional internal lighting ..... P/N 11-07239 ..... $56.75

AMMETERS

These new manufactured ammeters offer accuracy, rugged construction, and contemporary styling. Made in U. S. A. Furnished with shunt. Size: 2-1/4".

Range: 0-30 (0 center) ..... P/N 10-14650 ..... $195.75
0-60 (0 center) ..... P/N 10-14655 ..... $196.75
0-80 (0 center) ..... P/N 10-14660 ..... $193.99
0-100 (0 center) ..... P/N 10-02788 ..... $193.75

REPLACEMENT UMA AMMETER SHUNTS 30/60/80/100AMP

UMA Ammeter shunt 30AMP, 60AMP, 80AMP, and 100AMP.

Shunt 30AMP 1C1 ..... P/N 10-02072 ..... $39.80
Shunt 60AMP 1C2 ..... P/N 10-02073 ..... $38.75
Shunt 80 AMP 1C3 ..... P/N 10-02352 ..... $38.75
Shunt 100AMP 1C4 ..... P/N 10-02074 ..... $39.80

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting. ..... P/N 11-07239 ..... $56.75

UMA ENGINE GAUGES

2-1/4 inch
Fuel Flow Gauge

UMA 2-1/4" FUEL FLOW 270° GAUGE

These affordable indicators display gallons/hour fuel flow in a conventional analog instrument package. Standard markings are black and white.

2-1/4" 08- GPH.....P/N 10-02407..... $168.95
2-1/4" 0-20 GPH.....P/N 10-02408..... $168.95
2-1/4" 0-30 GPH.....P/N 10-02409..... $168.95
2-1/4" 0-20 GPH.....P/N 10-03706..... $168.95

Turbine FlowTransducer

UMA 2-1/4" FUEL AIR BOX 270° PRESSURE

Electronic, Fuel/Air-box Differential Pressure gauges and senders are designed for the Rotax 914 engine but have other applications where differential pressures need to be measured. It eliminates having to calculate the fuel/air-box differential pressure by looking at two separate gauges and having two separate senders.

2-1/4" 0-7 diff. PSI (U)
P/N 10-00979.....$191.75
SENDER NOT INCLUDED

2-1/4 inch UMA Fuel Airbox Pressure
Case: Valox 420 Plastic
Weight: 4.8 oz.

UMA OPTIONAL INTERNAL LIGHTING

Optional internal lighting for all UMA 2-1/4", 3-1/8" instruments (except altimeter). This is just a lighted option. Order the instrument in addition to the internal lighting.....P/N 11-07239.....$56.75

UMA 2-1/4" ELECTRONIC FUEL QUANTITY GAUGE

SENDER NOT INCLUDED

Description	Part No.	Price
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (C) 0-5V	10-02392	$205.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180°| Sender: (C) 0-5V	10-02393	$203.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 240/30 ohms	10-02394	$203.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 240/30 ohms	10-02395	$205.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 0-30 ohms	10-02396	$205.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 0-90 ohms	10-02397	$203.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 0-90 ohms	10-02398	$203.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/270° Sender: (F) 78-6 ohms	10-02399	$203.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/180° Sender: (F) 78-6 ohms	10-02401	$203.95
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/ Sender: (C) 0-5V	10-02410	$197.75
2-1/4 inch UMA Electronic Fuel Quantity Indicator Range/Sweep: E-F/ Sender: (F) 240/30 ohms	10-02411	$197.75

UMA PRESSURE SENDERS

UMA's pressure senders offer high reliability and accuracy at an affordable cost. They use precision solid state sensors and are designed for rugged use in just about any environment.

UMA Pressure Sender (U)(G)(D) 1/8"-27 NPTF Connection(s) 1' Cable 5/8-18 Mounting Thread

UMA Precision Sender (A)

Description	PSI	Part No.	Price
UMA Pressure Sender (U)	0-7 PSI Differential	10-00980	$132.75
UMA Pressure Sender (U)	0-7 PSI	10-01057	$152.75
UMA Pressure Sender (U)	0-35 PSI	10-01058	$126.75
UMA Pressure Sender (U)	0-70 PSI	10-01059	$126.75
UMA Pressure Sender (U)	0-100 PSI	10-01060	$126.75
UMA Pressure Sender (U)	0-150 PSI	10-01061	$152.75
UMA Pressure Sender (U)	0-60 InHg Absolute	10-01062	$132.75
UMA Pressure Sender T1EU35(G)(D)	0-35 PSI	10-02646	$162.75
UMA Pressure Sender T1EU100(G)(D)	0-100 PSI	10-02647	$161.90
UMA Ashcroft Precision Sender (A)	0-30 PSI	10-02418	$195.00
UMA Ashcroft Precision Sender (A)	0-150 PSI	10-00530	$195.00
UMA Ashcroft Precision Sender (A)	0-2000 PSI	10-02420	$195.00

IN

UMA TEMPERATURE PROBES NON-TSO'D

(U) All 1BX Temperature Probes contain a thermistor for temperatur sensing. 6" Lead Wires.

(J) All 2B1X & 2B0X Temperature Probes use Type J Thermocouple. 6' Lead Wires.

(K) All 2B2X & 2B3X Temperature Probes use Type K Thermocouple. 6' Lead wires

UMA P/N	Sizes	Our P/N	Price
1B1	Thread:1/8 NPT, 1/2 Hex Head	10-00968	$69.75
1B2	Thread: 3/8-24, 5/8 Hex Head (Auto)	10-00969	$69.75
1B3	Thread: 5/8-18, 7/8 Hex Head (Lyc.)	10-00418	$69.75
1B4	Thread: 10mm x 1.5 Pitch (Rotax 912 & 914)	10-00973	$69.75
1B5F	Thread: 3/8-24, 2-1/4" OAT F°	10-02374	$79.75
1B6	Thread: 16mm x 1.5 Pitch	10-02375	$68.75
1B7	Thread: 12mm x 1.5 Pitch	10-02376	$68.75
1B8	Thread: 1/4-20 (Carb. Temp.)	10-01156	$68.75
1B10	Thread: 1/4-28	10-02377	$69.75
1B11	Thread: 1/4-18 NPT	10-02378	$68.75
2B10	10mm Spark Plug Ring	10-00960	$70.00
2B12	12mm Spark Plug Ring	10-00961	$70.00
2B14	14mm Spark Plug Ring	10-00962	$70.00
2B18	18mm Spark Plug Ring	10-00963	$71.90
2B01	Bayonet Type: 1/8 NPT	10-02448	$96.75
2B02	Bayonet Type: 3/8"-24, w/snap	10-00795	$99.75
2B20	Clamp Size: 1-5/8 - 2-1/2" Length: 1" Tip	10-04791	$83.75
2B21	Clamp Size: 1 - 2" Length: 1" Tip	10-00966	$83.75
2B30	Clamp Size: 8mm, Bayonet Length: (Rotax)	10-00967	$83.75

UMA 1-1/4" ENGINE INSTRUMENTS

Monitor your engine's vitals with a full line of space saving 1-1/4" engine instruments with 240 degree analog sweep. These instruments allow you the opportunity to utilize panel space without compromising readability. No longer do you have to decipher cluster gauges or push buttons for readings or try to concentrate on flashing numbers. These premiere UMA instrument are electronic and can be powered from 14 or 28 volts. Signals are acquired from remote mounted sensors, processed and displayed on analog dials with easy to read markings. Each gauge uses rugged aircore meter movement for vibration resistance and repeatability. Each gauge can be placed in a 1-1/4" diameter hole and mounted behind the panel with (4) 6-32 screws. They can be cluster mounted as close as 11/2" centers. Senders are sold separately.

UMA Technical Support: 800-842-5578.

STREAMLINE • STACKABLE • EASY TO READ • RUGGED DESIGN

CYLINDER HEAD TEMP. (CHT)

Description	Part No.	Price
CHT Gauge 100-300°F	10-00035	$177.80
CHT Gauge 100-600°F	10-00036	$177.80
CHT Thermocouple 14mm Plug (Rotax)	10-00962	$70.00
CHT Thermocouple 18mm Plug (Lyc.)	10-00963	$71.90
CHT Thermocouple 3/8-24 Bayonet (Lyc.)	10-00795	$99.75

OIL PRESSURE

Description	Part No.	Price
Oil Pressure Gauge 0-80psi	10-00037	$177.80
Oil Pressure Gauge 0-130psi	10-00038	$177.80
Oil Pressure Gauge 0-130psi Rotax 912/914	10-05509	$176.75

FUEL QUANTITY

Description	Part No.	Price
Fuel Qty. Ind. (Float 240-30)	10-00039	$176.75
Fuel Qty. Ind. (Cap. 5v)	10-00040	$176.75
Sender (Float type 240-30 ohms)	10-00056	$39.95
Sender (Capacitance 0-5V)	10-00797	$139.75

AMMETER

Description	Part No.	Price
Ammeter ±30 Shunt incl.	10-00041	$215.95
Ammeter ±100 Shunt incl.	10-00043	$215.95
Ammeter +60	10-00581	$215.95
Ammeter +80	10-00582	$215.95

WATER PRESSURE

Description	Part No.	Price
Water Press. Gauge 0-15psi	10-00044	$176.75
Water Press. Gauge 0-30psi	10-00045	$177.80

WATER TEMPERATURE

Description	Part No.	Price
Water Temp. Gauge 100-300°F	10-02457	$176.75

OUTSIDE AIR TEMPERATURE

Description	Part No.	Price
OAT (-25) -40°C	10-02385	$231.95
OAT (-10) -110°F	10-02386	$231.95

TACHOMETERS

Description	Part No.	Price
0-7000 RPM for Rotax 447/503/582	10-05507	$190.00
0-7000 RPM for Rotax 912/914	10-05506	$190.00

EXHAUST GAS TEMPERATURE (EGT)

Description	Part No.	Price
EGT Gauge 700-1700°F	10-00046	$176.75
EGT Thermocouple Clamp style (Lyc.)	10-04791	$83.75
EGT Thermocouple 8mm, Bayonet (Rotax)	10-00967	$83.75

FUEL AIRBOX PRESSURE

Description	Part No.	Price
Fuel Airbox Pressure Range: 0-7 Diff.	10-02401	$203.95

FUEL FLOW

Description	Part No.	Price
Fuel Flow 0-8 6PH	10-02403	$176.75
Fuel Flow 0-20 6PH	10-02404	$176.75
Fuel Flow 0-30 6PH	10-02405	$176.75

OIL TEMPERATURE

Description	Part No.	Price
Oil Temp. Gauge 100-300°F	10-00047	$176.75
1-1/4 inch VDO - TSO'd Electronic Temperature Gauges 100-300 deg F	10-02779	$176.75
Oil Temp. Probe 3/8-24 (Automotive)	10-00969	$69.75
Oil Temp. Probe 5/8-18 (Lyc./Cont.)	10-00418	$69.75
Oil Temp. Probe 10mm (Rotax 912/914)	10-00973	$69.75

FUEL PRESSURE

Description	Part No.	Price
Fuel Pressure Gauge 15psi	10-00048	$177.80
Fuel Pressure Gauge 30psi	10-00049	$176.80
Fuel Pressure Gauge 0-80 psi	10-00050	$176.75

VOLTMETER

Description	Part No.	Price
Voltmeter 18-36V	10-00052	$176.75
Voltmeter 9-17V	10-00578	$176.75

FLAP INDICATOR

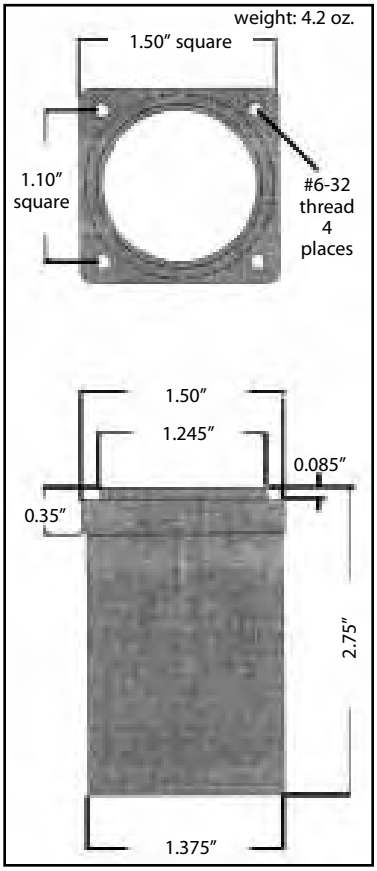
Description	Part No.	Price
Flap Position Indicator 0-30°	10-00053	$191.75
Flap Position Indicator 0-40°	10-00054	$191.75
Flap Position Indicator up-full	10-00055	$191.75
Flap Indicator Transducer	AN5785	$216.95

MANIFOLD PRESSURE

Description	Part No.	Price
5-35"	10-02438	$177.80
5-50"	10-02439	$176.75

For Experimental aircraft only. See next page for TSO'd Gauges. Mount individually or as a cluster.

MOUNTING INFORMATION



IN

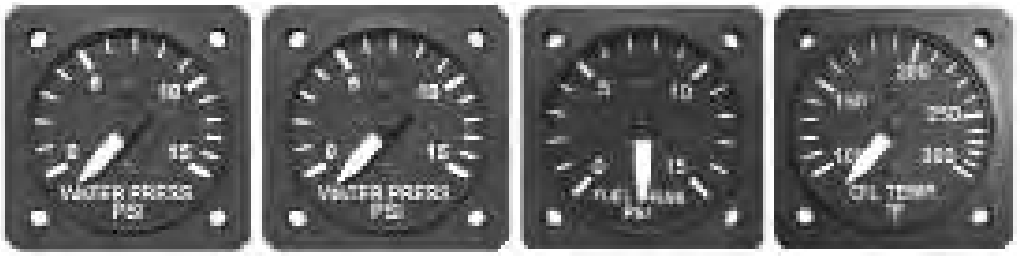
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

UMA 1-1/4" TSO'd ENGINE INSTRUMENTS

These 1 1/4" instruments are identical to the 1 1/4" UMA Gauges on previous page, except these are TSO'd for certified aircraft. (Except Ammeters)



UMA No.	Size & Type	Range / Sender Sender Range	Markings & Sweep	Part No.	Price
TO4 113V 080P 000	1 1/4" OIL PRESS	0-80 PSI (VDO)	B & W	10-00037	$177.80
TO4 113V 130P 000	1 1/4" OIL PRESS	0-130 PSI (VDO)	B & W	10-00533	$203.95
TO4 1135 060P 000	1 1/4" OIL PRESS	0-60 PSI (ASHCROFT)	B & W	10-00534	$203.95
TO4 112V 015P 000	1 1/4" FUEL PRESS	0-15 PSI (VDO)	B & W	10-00538	$203.95
TO4 112V 030P 000	1 1/4" FUEL PRESS	0-30 PSI (VDO)	B & W	10-00539	$205.95
TO4 112V 080P 000	1 1/4" FUEL PRESS	0-80 PSI (VDO)	B & W	10-00540	$203.95
TO4 1125 100P 000	1 1/4" FUEL PRESS	0-100 PSI (ASHCROFT)	B & W	10-00544	$187.75
TO4 1125 150B 000	1 1/4" FUEL PRESS	0-150 PSI (ASHCROFT)	GA 59-115, RR@ 59-115	10-00545	$205.95
TO4 115V 015P 000	1 1/4" WATER PRESS	0-15 PSI (VDO)	B & W	10-00546	$203.95
TO4 1145 2K0P 000	1 1/4" HYDRAULIC PRESS	0-2000 PSI (ASHCROFT)	B & W	10-00550	$203.95
T12 113U 150C 000	1 1/4" OIL TEMP	40-150 °C	B & W	10-00555	$205.95
T12 113U 300F 000	1 1/4" OIL TEMP	100-300 °F	B & W	10-00556	$205.95
T12 115U 150C 000	1 1/4" WATER TEMP	40-150 °C	B & W	10-00557	$203.95
T12 115U 300F 000	1 1/4" WATER TEMP	100-300 °F	B & W	10-00558	$203.95
T12 116J 530C 000	1 1/4" CHT	50-300 °C	B & W (Thermocouple)	10-00561	$203.95
T12 117K 1K7F 000	1-1/4" EGT	400-1700 °F	B & W (Thermocouple)	10-04945	$203.95
T12 117K 1K7F 000	1 1/4" EGT	100-900 °C	B & W (Thermocouple)	10-00562	$203.95
T12 118U 120F 000	1 1/4" CARB. TEMP	-60-120 °F	B & W	10-04670	$203.95
T12 11AU 300F 000	1 1/4" GEARBOX TEMP	100-300 °F	B & W	10-00564	$203.95
T12 11T5 1K0C 000	1 1/4" TURBINE TEMP	0-1000 °C	B & W, 5V INPUT	10-00565	$194.75
T07 11MU A35H 000	1-1/4" MANIFOLD PRESSURE	5-35 in.	B & W	10-05523	$203.95
T18 1125 1C10 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (cap 5V)	B & W (2700)	10-00566	$203.95
T18 1125 2C10 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (cap 5V)	B & W (1800)	10-00567	$203.95
T18 112F 1F10 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 240-30 ohms)	B & W (2700)	10-00568	$203.95
T18 112F 1F20 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 0-30 ohms)	B & W (2700)	10-00569	$203.95
T18 112F 1F30 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 0-90 ohms)	B & W (2700)	10-00570	$205.95
T18 112F 1F40 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 78-6 ohms)	B & W (2700)	10-00571	$203.95
T18 112F 1F50 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 10-180 ohms)	B & W (2700)	10-00572	$203.95
T18 112F 2F10 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 240-30 ohms)	B & W (1800)	10-00573	$203.95
T18 112F 2F20 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 0-30 ohms)	B & W (1800)	10-00574	$203.95
T18 112F 2F30 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 0-90 ohms)	B & W (1800)	10-00575	$203.95
T18 112F 2F40 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 78-6 ohms)	B & W (1800)	10-00576	$205.95
T18 112F 2F50 000	1 1/4" FUEL QTY IND.	EMPTY TO FULL (float 10-180 ohms)	B & W (1800)	10-00577	$203.95
Ammeters are not TSO'd					
15 11S0 P30A 000	1 1/4" AMMETER (2700) (w/shunt)	-30 to 30 A	B & W	10-00041	$215.95
15 11S0 P60A 000	1 1/4" AMMETER (2700) (w/shunt)	-60 to 60 A	B & W	10-00581	$215.95
15 11S0 P80A 000	1 1/4" AMMETER (2700) (w/shunt)	-80 to 80 A	B & W	10-00582	$215.95
15 11S0 P1CA 000	1 1/4" AMMETER (2700) (w/shunt)	-100 to 100A	B & W	10-00043	$215.95

NOTE: These Ammeters are NOT TSO'd

Senders sold separately, optional internal lighting available, Range Markings available at additional cost.

HOUR METERS – ENGINE GAUGES

HOBBS HOUR METERS

P/N 15000

P/N 15001

P/N 15006

P/N 15007

The Quartz + series of hour meters provide performance and reliability. Features include a highly reliable drive mechanism and odometer gear train combined with the accuracy of quartz crystal timing. Accurate to +/- 0.02% from -40° to 185°F. Total digital quartz readout is 9999.9 hours. Easy-to-read white numerals on black face dials. Sealed against dirt and moisture. Meets requirements of spec. MIL-L-3971B. Power: 12 – 32 V DC. Models 85094, 85001 and 85011 read "Total Hours". Model 85012 reads "Flight Hours".

Hobbs Hour Meter 85094 + ... P/N 15000 ..... $26.95
Hobbs Hour Meter 85001 + ... P/N 15001 ..... $68.75
Hobbs Hour Meter 85011 + ... P/N 15006 ..... $76.85
Hobbs Hour Meter 85012 + ... P/N 15007 ..... $67.85

PRESSURE SWITCH FOR HOBBS HOUR METERS Normally open. Closes at 4 PSI. Single circuit with 2 insulated terminals. Switch has silver contacts enclosed in weatherproof case. 1/8" male pipe thread connection. P/N 10-00813 ..... $31.85

Water Compatible Pressure Switch for Rotax engines.
P/N 10-00326 ..... $31.50

For pressure switches with 1/8" male pipe threads. For 1/4" O.D oil pressure lines. ..... P/N 10-04846 ..... $9.85

DATCON HOUR METERS

871
3-Hole Flange Mounting 2.54" Bolt Circle 1.45" Dia. Holes

873
Mounts in Standard 2-1/4" Instr. Hole

876
Bracket Mount in 2-1/32" - 2-1/8" Panel Hole

Standard equipment in most production aircraft. Operate on any DC voltage from 4-40V. Recommended for use on aircraft because they start or stop instantly when power is applied or removed. Furnished with mounting hardware. If meter is connected improperly it will not operate but meter will not be damaged. The running indicator indexes every 6 seconds.

Model 871 ..... 12/24V ..... P/N 56456-3 ..... $68.50
Model 873 ..... 12/24V ..... P/N 56457-3 ..... $68.90
Model 876 ..... 12/24V ..... P/N 56458-4 ..... $71.85

TINY TACH TACHOMETER/HOUR METERS

RPM reading adjustable from 1 spark per 2 revolutions to 8 sparks per revolution. One TINY-TACH™ now works for most gas engines. RPM display from 1 to 19,000. RPM update time 1/2 second. Hour meter records total actual running time on your engine. Job timer can be reset to record run time for record keeping. Coax cable transmits signal without EMF interference. 1 Antenna cable winds around your spark plug wire to give you the RPM reading – clean and simple to attach. Signal strength can be controlled by the antenna wire. Standard cable length is 6 feet. This unit is potted to prevent damage from moisture and vibration. Lithium battery life 5+ years, not replaceable. One year warranty.

TT2A Standard Model ..... P/N 10-04182 ..... $48.50
For Diesel Engines - 6mm transducer ..... P/N 10-04016 ..... $95.00
For Diesel Engines - 1/4 inch transducer ..... P/N 10-04017 ..... $95.00

FALCON VOLTMETERS AND AMMETERS

Falcon Gauge Voltmetersand ammeters are 6-16V and are availble in 2-1/4" and 2" Round.

Size	Model No.	Description	Part No.	Price
2 1/4"	VM16-ZO	Voltmeter, 6-16V	10-02271	$48.50
2 1/4" round	VM16-ZO	Voltmeter, 6-16V	10-02272	$43.75
2-1/4"	VM30-2O	Voltmeter, 0-30V	10-04040	$69.85
2 1/4"	A30-001	Ammeter, +/-30A	10-03410	$45.75
2 1/4" round	A30-001R	Ammeter, +/-30A	10-03411	$40.75
2 1/4"	AV60-001	Ammeter, +/-60A	10-04041	$72.75
2 1/4" round	AV60-001R	Ammeter, +/-60A	10-03415	$109.75
2 1/4"	AV3016-002	Amp/Voltmeter +/-30A, 6-16V	10-03412	$96.75
2 1/4" round	AV3016-001R	Amp/Voltmeter +/-30A, 6-16V	10-03413	$92.75
2-1/4"	AV3030-002	Amp/Voltmeter +/-30A, 30V	10-04043	$96.75
30A	SHT-030	Shunt for Amp/Voltmeter, 50mV/30A	10-03416	$29.95
60A	SHT-060	Shunt for Amp/Voltmeter, 50mV/60A	10-03417	$31.75

ENM HOUR METERS

Features 6-digits with an hour glass as a running indicator - operates only when engine is vibrating. Install anywhere with no wired connection or power source to operate. Internal battery supplies all the necessary power for the gauge to operate for years of service. Total operating hours are always shown on the LCD display. Compact tamper-proof meter is sealed against the environment to provide years of service.

- Voltage: 10-80 V DC
- Total dimensions: 1.43"W x 0.92"H x 2.13"D
- Face dimensions: 2.12"W x 1.25"H
- Weight: 2oz
- Power: 0.03W
- 6 Digit display
- Analog
- No reset
- Back of panel mounting

ENM Hourmeter DC Power Analog ..... P/N 10-05278 ..... $45.75
ENM Hourmeter AC Power Analog ..... P/N 10-05279 ..... $47.80
ENM Hourmeter Digital Vibration Activated ..... P/N 10-05277 ..... $47.60

UNIVERSAL DIGITAL TACH/HOURMETER

Now both a digital tachometer and an hourmeter in the same low cost and small size package! No power required yet there is a large 7 segment LCD display. Solid state electronics with quartz crystal technology make this instrument highly reliable. Easy to install - just wrap the attached wire around your spark plug cable. The case is completely sealed, it operates in a wide temperature range and the service interval is programmable.

P/N TLPT14 ..... $48.50

BISHOP AIR SWITCH FOR HOURMETERS

Externally mounted air switch. Connects to the pitot static tube on the wing and allows air from the pitot static tube that is for the airspeed to activate the hourmeter. P/N 11-02378 ..... $44.80

TASKEM DIGITAL TACH / HOURMETER 4000

The Model 4000 Tachometer/Timer displays RPM in both digital and analog formats. The digital format uses a liquid crystal display (LCD)showing up to 19,990 RPM in 10 RPM steps. The LCD is backlighted for night viewing and since it uses "direct drive" it does not washout in sunlight or when viewed from an angle. The analog format is presented as a ring of light emitting diodes (LEDs) around the perimeter of the front panel. The user can easily set the range of RPM that the LEDs represent.

P/N 15-05211 ..... $298.00

VOLTMETERS

These new manufacture voltmeters offer accuracy, rugged construction, and contemporary styling. Made in USA. 2 1/4" Range:

9-16V ..... P/N 10-14620 ..... $144.75
20-32V ..... P/N 10-02064 ..... $143.75

DIGITAL FLAP INDICATOR

The Visual Instruments Flap Indicator system provides a means for owners of older aircraft to upgrade their troublesome indicators to a modern, more reliable design. The system includes a new transmitter, a modern digital display, and all parts necessary to perform the upgrade. The new display incorporates a color LED bar graph. The appearance is similar to flap indications shown on modern glass cockpits. Positions of more than 10° flap are indicated in a different color. This allows for easy identification during an emergency procedure such as a balked landing (go-around). The LEDs are very viewable from a wide angle. This is particularly useful since the indicator on many Cessna models is located on the right side of the panel. The display automatically adjusts to the ambient light for IFR or night operation. The Flap Indicator system includes all necessary parts and typically takes a mechanic approximately 2 hours to install. 2 year factory warranty. STCd for installation on early model Cessna 172s, 182s, 205s, 206s, & 210s. P/N 10-00240 ..... $749.00

IN

INSTRUMENT MOUNTING PODS

An economical, high-quality, easy-to-install solution to your instrument mounting problems. Made of vacuum-molded white and black ABS plastic with attractive black matte ABS faces. The white pod may be easily spray-painted with acrylic enamel to match your aircraft. Two-piece mounting brackets fit snugly around 1" tubing, secured with screws provided. Available for 2, 3, 4 or 5 instruments with the face precut and mounting holes drilled for either 2-1/4" or 2" instruments. Blank face plates also available. May be used horizontal or vertically. When you order, specify either 2-1/4"or 2" instruments holes or blank face plate. Instruments not included.

2 Instrument Pods: 7-1/2" Wide x 3-3/4" Tall x 3-3/4" Deep
3 Instrument Pods: 10-3/8" Wide x 3-3/4" Tall x 3-3/4" Deep
4 Instrument Pods: 13-1/8" Wide x 3-3/4" Tall x 3-3/4" Deep
5 Instrument Pods: 16" Wide x 3-3/4" Tall x 3-3/4" Deep

P/N	Instr 2-1/4" Hole	Color	Price	P/N	Instr. 2" Hole	Color	Price
10-01513	2	White	$39.95	10-01538	2	Black	$39.75
10-01517	3	White	$52.25	10-01539	3	Black	$48.50
10-01521	4	White	$48.25	10-01540	4	Black	$48.50
10-01525	5	White	$55.50	10-01541	5	Black	$61.50
10-01529	2	Black	$39.95		Blank		
10-01530	3	Black	$48.50	10-01542	2	White	$39.95
10-01531	4	Black	$48.50	10-01543	3	White	$55.25
10-01533	5	Black	$61.50	10-01544	4	White	$49.25
	2" Hole			10-01545	5	White	$55.50
10-01534	2	White	$39.95	10-01546	2	Black	$39.95
10-01535	3	White	$55.25	10-01547	3	Black	$49.85
10-01536	4	White	$49.25	10-01548	4	Black	$51.75
10-01537	5	White	$45.75	10-01549	5	Black	$61.50

SHOCK MOUNTS

For vibration and shock proofing on instruments and radios.

10-02183 - 1" Square Plate Type Lord Mounts, 6 lb. rating. Monel mounting plate. Base holes .141" dia. for 6-32 screws. Center hole .166" dia. for 8-32 screw. New surplus item - like new mfg.
P/N 10-02183 ..... $7.85

200P-35 - 2" Square Plate Type Lord Mounts, 35 lb. rating. Steel mounting plate. Base holes .196" dia. for 10-32 screw. Center hole .391" dia. for AN6 bolt. P/N 10-00034.....$17.90

ROUND MOUNT – As used in Cessna aircraft. Overall length 1.25". Rubber molded on 8-32 threaded projections. New manufacture. Similar to Cessna P/N J6984-8. P/N 10-14700..... $6.55

LORD J-14290-4 INSTRUMENT SHOCK MOUNT - 5 lb rating • Metal mounting plate • .144 dia. base hole (screw size: #6) • .195 dia. center hole (screw size #10) • Aircraft: Cessna 182, 182A-182N
P/N 08-00381 ..... $33.85

RTC-2 AVIATION REAL TIME CLOCK & OAT DISPLAY

The RTC-2 is a 2.25" aviation Real Time Clock featuring a two time zone system, stopwatch, countdown timer, alarm and OAT (Outside Air Temperature) display. It is primarily intended to show UTC time (also known as Greenwich Mean Time, GMT or Zulu time) together with a local time to facilitate ordinary ATC time reporting.
P/N 11-06443 ..... $225.00

SCOTT TYPE FREE AIR THERMOMETER

Mounts through 3/8" dia. hole in windshield or cowling. Convenient scale reads in both Centigrade and Fahrenheit. Stem length is 4". Face diameter 2-1/8". Sunproof crystal. P/N 10-15500 ..... $82.80

P/N 10-03435

RC ALLEN 3 INCH ENGINE GAUGES 18-1000 & 18-1002 SERIES

Consists of three independent gages contained within a standard 3" diameter case. Oil temperature and cylinder head temperature gages are moving coil meter move-ment operated by MS28034-1 and AN5546-1 resistance bulbs respectively. Connection for the temperature gage is by cannon type connector: P/N MS3106A-14S-2S. FAA TSO Approved C47.

Model No. / Part No.	Description	Price
18-1000-1 P/N 10-03435	28 VDC Oil Temp. 50°-250°F, Oil Press. 0-200 PSI, Cylinder head temperature 100 to 500°F	$649.00
18-1000-2 P/N 10-03436	28 VDC Oil Temp. 20° to 120°F, Oil Press. 0 to 200 PSI, Cylinder head temp. 50 to 250°F	$649.95
18-1000-3 P/N 10-03437	14 VDC Oil Temp 50°-250°F, Oil Press. 0-200 PSI, Cylinder head temp. 100-500°F.	$649.95
18-1000-4 P/N 10-03438	14VDC Oil Temp 20° to 120°F, Oil Press 0 - 200 PSI, Cylinder head temp. 50 to 250°F	$759.00

P/N 10-03439

18-1002 SERIES - This gage consists of three moving coil meter movements within a 3" diame-ter case. Oil temperature is sensed by an MS28034-1 resistance bulb and cyl-inder head temperature is sensed by an AN5546-1 resistance bulb. Oil pres-sure is sensed by a VDO Transducer. Connection is made by a single cannon type connector: Part Number MS3106A-14S-6S.

Model No. / Part No.	Description	Price
18-1002-1 P/N 10-03439	Oil Temp 50° - 250°F, Oil Press. 0 - 120psi, Cylinder temp. 0 - 500°F	$759.00
18-1002-5 P/N 10-03440	Oil Temp 50° - 250°F, Green Arc 100° - 200°F, Red line at 249°F, Oil Press. 0 - 120psi, Red line 10psi & 100psi, Yellow Arc 10psi - 30psi, Green Arc 30psi - 60psi, Yellow arc 60psi - 100psi, Cylinder Temp 0°- 500°F, Green Arc 220° - 420°F, Red Line 460°F	$1,035.00

ACCESSORIES FOR 18-1000 & 18-1002 SERIES

Part No.	Description	Price
10-00958	Resistance Bulb MS3106A-12S-3S	$15.85
10-00953	Resistance Bulb MS28034-1	$184.95
AN5546-1	86146 CHT Probe Thermistor	$343.00
10-00790	MS3106A-14S-2S Cannon Plug	$12.50

Note: Use MS3106A-14S-2S Cannon Plug for instruments and MS3106A-12S-3S for Resistance Bulb MS28034-1.

DIGITAL OUTSIDE AIR TEMPERATURE GAUGE

This high quality digital outside air temp. gauge gives constant and precise readings on a bright, easy-to-read digital presentation. Comes complete with probe and ready to install. Made in USA
Celsius ..... P/N 10-00205 ..... $200.00
Fahrenheit..... P/N 10-00206 ..... $202.95

HYDRAULIC PRESSURE GAUGE

AN5771-4A Military style gauge with steel case. Mounts in 2-1/4" dia. panel opening. Range: 0-2000 PSI. Overhauled and Certified. With fresh Matte-white dial. P/N AN5771-4A..... $244.95

IN

ASTROTECH QUARTZ CHRONOMETERS

A fine quality instrument to satisfy all cockpit clock/timer needs. 12 or 24 hour clock, 24 hour elapsed timer with time-out or hold feature, month and date. Will operate on internal battery for 2 years or can be connected to electrical system. 12 or 28V DC operation. Does not include internal battery.

Part no.	Model	Description	Price
10-15508	LC-2	Panel Mount Aircraft Powered 14/28V	$473.00

NOTE: For Aircraft Application Information on Astrotech Chronometers visit www.aircraftspruce.com

FLIGHT DATA SYSTEM ELECTRIC TACHOMETER

Tachometer: Monitors both left and right ignition systems. Works with magnetos and electronic ignition. Warns when an ignition system has failed. Engine Hour Meter: Saves engine hours in "tach time" or actual time. Flight Timer: Automatically records flight Time. Features: Large and easy to read digits. Extreme operating temperature display. Soft orange backlight with automatic brightness. 2-1/4" panel mounted. Weighs 2.6oz. Includes pre-wired connector. 12-28 volt compatible P/N 10-03898 ..... $159.00

AEROSPACE LOGIC 200 - CLOCK, OUTSIDE TEMPERATURE KIT

The CA200 is an advanced, next generation airborne timepiece plus a seven input annuciator. It can scan seven 200 Series instruments and report any out-of-limit conditions the moment they occur; all on one instrument. Once identified, simply glance over the panel to view the exact cause for concern.

With the CA200 mounted either in or close to your primary panel scan you will reduce the need for consistent full panel scans and be automatically made aware of any condition requiring attention.

The CO200 is identical to the CA200 with the exception of the annunciator function. Using one of the world's most accurate digital timebases they will provide precise time for years to come.

Outside air temperature functionality is TSO'd and meets the temperature accuracy requirements of SAE AS8005 for a Class IIa (+/- 1%) instrument. Functional displays include:

• UTC Time • Local Time • Chronograph • Flight Time and Interval Timer • Seven annunciator sense inputs (CA200 only)

P/N 10-04348 ..... $511.00

YOKE MOUNT FLIGHT CLOCK

Battery-operated quartz aircraft clock reads out 12 or 24 hour formats in bright digital display, and has stopwatch & alarm features. Includes yoke attachment for mounting directly in front of the pilot, and the yoke clip holds charts, approach plates, etc. Uses one watch battery (included). 1yr warranty. A great clock & approach timer.

Flight Clock (for Piper)
P/N 13-31200 ..... $20.00

Flight Clock (for Cessna & all others)
P/N 13-31210 ..... $19.50

ELECTRONIC STOPWATCH/TIMER

This easy-to-use stopwatch counts up to 60 minutes, then recycles automatically. As a timer, it counts down from 100 minutes in minutes and seconds. Features loud tone when timing period is complete, a large LCD digital display, and soft-touch buttons which are easy to set. Stands or hangs for convenience. 1.5V battery included. By Westbend. P/N 13-31380 ..... $19.95

MODEL 100 STOPWATCH

The Bodytronics Model 100 stopwatch strikes a great balance between price and performance. You will not find a better quality stopwatch at this price! ..... P/N 13-02954 ..... $10.50

SUPERCLOCK FROM ELECTRONICS INTERNATIONAL

Displays local and Zulu time. May be set to display in a 12 or 24-hr format. A 10-year lithium battery keeps the clock running even if the aircraft battery is removed. Displays an Up Timer, that will start running when the engine is started. Acts as an automatic Flight Timer. The Up Timer may be started, stopped or reset. A Recurring Alarm may be set to alert you at appropriate time intervals. Displays a Down Timer. Displays an Engine Timer. Acts as a Hobbs Meter. When the engine starts, the Engine Timer will run. Specifications: 2-1/4" mount. 3.65" Depth. 10 Oz. Unit. Viewable in direct sunlight. Backlit for night operation. Operates from 7.5 to 35 volts at .3 amps. P/N 10-01612 ..... $284.95

SUPERCLOCK/ALTITUDE ALERT FROM ELECTRONICS INT'L.

Reads your Altitude Encoder and displays your current altitude as seen by ATC. Display indicates when your current altitude is above or below your Programmed Target Altitude. A "Level off Alarm" occurs as you approach your Programmed Target Altitude. Displays Density Altitude based on your current OAT reading. Degrees F and degrees C. A Timer may be set as an "UP" or "Down" counting Timer. A Recurring Alarm may be set to alert you at appropriate time intervals. Displays Local and Zulu Time. The Local Clock may be set to display in a 12 or 24-hr format. Meets FAA requirements for a clock. Specifications: 2-1/4" mount. 3.65" Depth. 10 Oz. Unit. Viewable in direct sunlight. Backlit for night operation. Operates from 7.5 to 35 volts at .3 amps.

P/N ASC-5 ..... $479.95

PRECISION QUARTZ AIRCRAFT CLOCKS

Designed for accuracy, this precision clock is manufactured to meet rugged aircraft environmental standards. High-quality, solid state quartz movement. Comes with a factory one year limited warranty.

Features: FAA/PMA approved. Precision quartz movement. Transient and reverse polarity protected. One year limited warranty. Continuously powered by aircraft battery. Low power consumption (3mA). Fits standard 2-1/4" panel hole

Specifications: Dimensions: 2.5 x 2.5 x 3.2 inches max. Weight: 0.5 lbs.. Altitude: -1,000 to +55,000 feet. Mounting: Front or rear panel.

Standard Quartz Electric Clock (unlit) ..... P/N 10-00459 ..... $277.95
Lighted Quartz Electric Clock (14V) ..... P/N 10-00460 ..... $319.00
Lighted Quartz Electric Clock (24V) ..... P/N 10-04615 ..... $321.00

QUARTZ ELECTRIC AIRCRAFT CLOCKS

These clocks are constructed for easy installation in a wide variety of aircraft. The rugged quartz movement is accurate within 2 seconds in 24 hours under normal operations and runs accurately in temperatures from -30°–180°F. The clock kit includes a power harness, mounting screws and installation instructions. The clock features adjustable red elapsed time hands.

P/N 10-22812 (12V) $122.75
P/N 10-22824 (24V) $122.75

MID-CONTINENT INSTRUMENTS AND AVIONICS QUARTZ ANALOG ELECTRIC CLOCK

FAA PMA approved. Precision quartz movement. Compact 2 1/4-inch size – fits standard panel cutout. Transient and reverse polarity protected. Original equipment for many major aircraft manufacturers Low power consumption (3 mA). Continuously powered by aircraft battery One year limited warranty.

MD-90L 14V Lighted ..... P/N 10-00460 ..... $319.00
MD-90L 28V Lighted ..... P/N 10-04615 ..... $321.00
MD-90L 14V Lighted ..... P/N 10-00460 ..... $319.00
MD-90L 28V Lighted ..... P/N 10-04615 ..... $321.00

IN

FLIGHT TIME CONTROL

P Model: Controlled by programmable Airspeed with solid state pressure sensor
G Model: Gets TAS from GPS source
Solid state speed sensor for internal take off and landing speed
Speed level is adjustable for different aircraft from the protected set up menu Stores up to 4,000 flights with date, departing and landing time Daily totals with number of landings like a trip meter in cars; this is very helpful if you have a lot of short flights a day. (Example: Glider Towing or Parachuting) Adjustable plain total as reference for maintenance and log book MFG in Switzerland to precise standard.

FLISYS 80

Features:
- Easy Flight Time Controlling for Basic Training, Glider Training and Parachuting
- Internal Real Time Clock • Records Departing - Landing time with date and Pilot Number
- Records Aircrafts Total Flight Time
- Communication via SD - Card • SD Card for read outs of flight with defined Pilot Number
- Pilot Number stored for every recorded flight
- Programmable "On Air" output for Transponders
- Bigger size display for easier read out
- Power Supply 12 to 24 V DC.

3-1/8" TAS From Pilot FLISYS80P.....P/N 10-05104 ..... $985.00
3-1/8" TAS From GPS FLISYS80G.....P/N 10-05105 ..... $718.00

FLISYS 57

FEATURES:
- Internal Real Time Clock
- Records Departing - Landing time and date
- Records Aircrafts Total Flight Time
- Programmable "On Air" output for Transponders
- Controlled by programmable Airspeed with solid state pressure sensor
- Power Supply 12 to 24 V DC

2-1/4" TAS From Pilot FLISYS57P.....P/N 10-05102 ..... $529.00
2-1/4" TAS From GPS FLISYS57G.....P/N 10-05103 ..... $509.00

FTC 57

Easy Flight Time Controlling for Basic Training, Glider Towing, Parachuting. Counts Time Hours and Minutes. 57mm (2-1/4") round. FTC with same front size as Hobbs time counter. Easy initial time set with 2 push buttons on back side Input for On/Air from external switch or GPS system with output. Power supply is 12 V to 24 V DC.

2-1/4 FTC 57
P/N 10-05106 ..... $217.00

37x24 mm Rectangular
P/N 10-05107 ..... $217.00

ASA FLIGHT TIMER

Ergonomically designed and engineered for reliability, ease and convenience, the ASA Flight Timer should be considered essential equipment for all aviators. Features: Large LCD backlit display, multi-function clock and three simultaneous timer options. Exclusive digital notepad for squawk codes or frequencies, stores up to 12 approach times, audible and visual alarms.
P/N 13-02357 ..... $38.95

NELSON FLIGHT CLOCK

- Stopwatch / Alarm • Quartz clock • Digital • Replaceable battery • Yoke clip holds Sectionals, Approach plates, etc. • 2 yoke sizes, Piper & Cessna • 12 or 24 hour time

Cessna ..... P/N 13-31210 ..... $19.50
Piper ..... P/N 13-31200 ..... $20.00

WESTBEND ELECTRONIC TIMER

The jumbo LCD display on this electronic timer displays time in hours, minutes and seconds. Includes clock feature, electronic alarm, clip, stand, magnet and hanging hole for versatile use. AAA Battery included.
P/N 17-00240 .....$12.50

DUAL CHANNEL TIMER

The Dual Channel Timer times 2 activities at once. One channel times hours, minutes, and seconds. Second channel times minutes and seconds. Dual LCD readout shows both times. Memory recalls previous time settings Includes clip, stand, magnet and hanging hole for ease of use 4½"L x 1½"W x 2.4"H. AAA battery included. ..... P/N 17-00241 .....$14.25

WESTBEND ELECTRONIC TRIPLE TIMER/CLOCK

Features of this electronic timer include a continuous running clock that displays hours, minutes, seconds, and AM/PM mode, three timing channels that count to and from 100 hours, and three distinctive alarms.
Additional Features: Memory recalls previous time setting. Times three activities at once. Alarm beeps for one minute and counts up to show elapsed time. Easy-to-read large LCD display. Clip, stand, magnet and hanging hole for versatile use. Specifications: One AAA battery included. 2.5" x 3" x 1". P/N 17-00239 .....$19.95

DAVTRON DIGITAL CHRONOMETER MODEL 800

MODEL 800

- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- Model 800 AA Memory Battery (Optional)
- Input Voltage 11 to 28 Volts

MODEL 800 Illuminated Buttons

- External Output for Optional Audio Alarm (ET)
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke
- Internal Lighting

Description	Part No.	Price
GMT, LT, & ET Digital Clock 5 Volt Lighting (800)	10-03323	$145.90
800-5V With Battery Holder (AA)	10-03305	$152.85
800-5V With Night Vision Lighting Green A	10-03324	$258.95
800-5V NVG With Memory Battery Holder (AA)	10-03325	$259.95
GMT, LT, & ET Digital Clock 14V Lighting (800)	10-04508	$145.85
800-14V With Memory Battery Holder (AA)	10-02050	$152.75
800-14V With Night Vision Lighting Green A	10-03330	$257.95
800-14V NVG With Memory Battery Holder (AA)	10-03331	$258.95
GMT, LT, & ET Digital Clock 28V Lighting(800)	10-24535-28	$145.85
800-28V With Memory Battery Holder (AA)	10-02051	$152.95
800-28V With Night Vision Lighting Green A	10-03335	$259.95
800-28V NVG With Memory Battery Holder (AA)	10-03336	$259.95
800-5V, Illuminated Buttons, Battery Holder	10-04730	$322.00
800-14V, Illuminated Buttons, Battery Holder	10-04574	$322.00
800-28V, Illuminated Buttons, Battery Holder	10-04575	$322.00
800-5V NVG, Illuminated Buttons, Battery Holder	10-04576	$526.00
800-14V NVG, Illuminated Buttons, Battery Holder	10-04577	$526.00
800-28V NVG, Illuminated Buttons, Battery Holder	10-04578	$526.00

IN

DIGITAL CHRONOMETERS AND CLOCKS

MODEL 803

- UT, LT, FT, & ET
- FT & ET Visual Alarm
- External Output for Optional Audio Alarm(FT/ET)
- Aircraft Voltage
- OAT F & C (12Ft. Temperature Probe)
- Internal Lighting
- AA Memory Battery
- Input Voltage 11 to 28 Volts
- NVIS (NVG) Option Green A

Description	Part No.	Price
UT, LT, FT, & ET Digital Clock 5V Lighting, Voltmeter, OAT (F & C)	10-03304	$441.00
UT, LT, FT, & ET Digital Clock 14V Lighting, Voltmeter, OAT (F & C)	10-25520-14	$442.00
UT, LT, FT, & ET Digital Clock 28V Lighting, Voltmeter, OAT (F & C)	10-25520-28	$438.00
803-5V With Night Vision Lighting Green A	10-03342	$612.00
803-14V With Night Vision Lighting Green A	10-03343	$612.00
803-28V With Night Vision Lighting Green A	10-03344	$612.00
C307PS Temperature Probe 12Ft. Coax (Analog)	11-04603	$68.75
Audio Alarm Son-Alert	11-04610	$49.50

MODEL 800

MODEL 800 Illuminated Buttons

- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- Model 800 AA Memory Battery (Optional)
- Input Voltage 11 to 28 Volts
- External Output for Optional Audio Alarm (ET)
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke
- Internal Lighting

• 5 volt and 28 volt lighting units need at least 20 volts on main power input for clock to operate. For 14 volt systems, order a clock with 14 volt lighting.

Description	Part No.	Price
GMT, LT, & ET Digital Clock 5 Volt Lighting (800)	10-03323	$145.90
800-5V With Battery Holder (AA)	10-03305	$152.85
800-5V With Night Vision Lighting Green A	10-03324	$258.95
800-5V NVG With Memory Battery Holder (AA)	10-03325	$259.95
GMT, LT, & ET Digital Clock 14V Lighting (800)	10-04508	$145.85
800-14V With Memory Battery Holder (AA)	10-02050	$152.75
800-14V With Night Vision Lighting Green A	10-03330	$257.95
800-14V NVG With Memory Battery Holder (AA)	10-03331	$258.95
GMT, LT, & ET Digital Clock 28V Lighting(800)	10-24535-28	$145.85
800-28V With Memory Battery Holder (AA)	10-02051	$152.95
800-28V With Night Vision Lighting Green A	10-03335	$259.95
800-28V NVG With Memory Battery Holder (AA)	10-03336	$259.95
800-5V, Illuminated Buttons, Battery Holder	10-04730	$322.00
800-14V, Illuminated Buttons, Battery Holder	10-04574	$322.00
800-28V, Illuminated Buttons, Battery Holder	10-04575	$322.00
800-5V NVG, Illuminated Buttons, Battery Holder	10-04576	$526.00
800-14V NVG, Illuminated Buttons, Battery Holder	10-04577	$526.00
800-28V NVG, Illuminated Buttons, Battery Holder	10-04578	$526.00

MODEL 811

- Six-digit Display on all 3 Functions.
- Time Function (12 OR 24HR Selectable)
- FT & ET
- Bright Sunlight Readable Displays
- Memory Battery Included
- Input Voltage11 to 28 Volts
- NVIS (NVG) Option Green A

Description	Part No.	Price
LT, FT, & ET Clock	10-24550-14	$438.00
811B With Gray Faceplate	11-09414	$423.95
Model 811 With Night Vision	10-03346	$577.00

Accessories / Replacement Parts	Part No.	Price
811 Dropping Resistor	11-04607	$5.35
811 Memory Battery Pack	10-24560	$23.50
811 Inverting Cable	11-04608	$24.70
811B Female Connector (Standard Cable)	11-04609	$38.80
KW-505FDigital Display for Model 811B	11-04613	$47.80

MB800 (BEECHCRAFT YOKE)

MB800 Illuminated Buttons

- GMT, LT & ET
- ET Counter (UP/DOWN), Visual Alarm
- Input Voltage 11 to 28 Volts
- Ext[illegible] Audio Alarm (ET)
- NVIS (NVG) Option Green A
- Available for Beechcraft yoke
- Internal Lighting

Description	Part No.	Price
MB800-5V (Black)	10-03341	$145.75
MB800-14V (Black)	10-02649	$145.75
MB800-28V (Black)	10-02651	$145.75
MB800-5V (Cream)	10-04581	$145.75
MB800-14V (Cream)	10-02906	$145.90
MB800-28V (Cream)	10-03340	$144.80
MB800-5V (Black) NVG Green A	10-04582	$268.95
MB800-14V (Black) NVG Green A	10-04583	$257.95
MB800-28V (Black) NVG Green A	10-04584	$259.95
MB800-5V (Cream) NVG Green A	10-04585	$258.95
MB800-14V (Cream) NVG Green A	10-04586	$258.95
MB800-28V (Cream) NVG Green A	10-04587	$258.95
MB800-5V (Black) Illuminated Buttons	10-04588	$322.00
MB800-14V (Black) Illuminated Buttons	10-04589	$322.00
MB800-28V (Black) Illuminated Buttons	10-04590	$322.00
MB800-5V (Black) NVG Green A, Illuminated Buttons	10-04591	$526.00
MB800-14V (Black) NVG Green A, Illuminated Buttons	10-04592	$526.00
MB800-28V (Black) NVG Green A, Illuminated Buttons	10-04593	$526.00

MODEL 877 REAR MOUNT

MODEL 850 NVG FRONT MOUNT

MODEL 850 FRONT MOUNT

- GMT, LT, FT, & ET
- FT & ET Visual Alarm
- External Output for Optional Audio Alarm(FT/ET)
- Bright Sunlight Readable displays
- Illuminated Displays
- 850 N Size Memory Battery
- Model 877 AA Memory Battery
- Input Voltage 11 TO 28 Volts
- NVIS (NVG) Optional Green A (850 & 850-2)

Description	Part No.	Price
GMT, LT, FT, & ET Clock 5V Lighting (850)	10-03310	$876.00
850A-5V-With Gray Faceplate	10-03311	$434.00
850-5V With Night Vision Compatibility (Green A)	10-03306	$587.00
850A-5V-NVG With Gray Faceplate	10-03347	$587.00
850-2-5V Rear Mount Night Vision (Green A)	10-04725	$587.00
GMT, LT, FT, & ET Clock 14V Lighting (850)	10-03312	$455.00
850A-14V With Gray Faceplate	10-03348	$455.00
850-14V With Night Vision Compatibility (Green A)	10-03349	$587.00
850-2-14V Rear Mount Night Vision(Green A)	10-04726	$615.00
850A-14V-NVG With Gray Faceplate	10-03350	$587.00
GMT, LT, FT, & ET Clock 28V Lighting (850)	10-03313	$434.00
850A-28V With Gray Faceplate	10-03314	$435.00
850-28V With Night Vision Compatibility (Green A)	10-03351	$587.00
850-2-28V Rear Mount Night Vision(Green A)	10-04727	$586.00
850A-28V-NVG With Gray Faceplate	10-03352	$587.00
GMT, LT, FT, & ET Clock 5V Lighting (877)	10-03308	$435.00
877A-5V With Gray Faceplate	10-03309	$434.00
GMT, LT, FT, & ET Clock 14V Lighting (877)	10-24545-14	$434.00
877A-14V With Gray Faceplate	11-05879	$434.00
GMT, LT, FT, & ET Clock 28V Lighting (877)	10-24545-28	$434.00
877A-28V With Gray Faceplate	11-05880	$439.00
Audio Alarm Son-Alert	11-04610	$49.50

DAVTRON INSTRUMENTS

MILITARY CHRONOMETER

MODEL M880

- Military clock
- Two button control system
- Control switch has remote capability
- Sunlight readable displays
- N.V.G. Filter, Green A or BG7B
- Manual dimming of the display
- Full 6 digit display selectable, GMT, LT, ET
- Elasped time is count up or down
- Keep alive battery (2 year life)
- GMT full 6 digit hours/minutes/seconds
- Local Time, 24 hour, 4 digit

Description	Part No.	Price
GMT, LT & ET Clock with night vision compatibility for military (BG7B)	11-08021	$1,226.00
GMT, LT & ET Clock with night vision compatibility for military (Green A)	11-08022	$1,189.00

DENSITY & PRESSURE ALTITUDE MODEL 655

FRONT MOUNT

REAR MOUNT

- OAT (F) & OAT (C)
- Pressure & Density Altitude With Pressure ALT. Alarm
- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. F&C/Vol/ Pres & Den ALT (Front Mount)	10-24515-1	$288.95
O.A.T. F&C/Vol/ Pres & Den ALT (Rear Mount)	10-24515-2	$288.95

DIGITAL VOLTMETER OUTSIDE AIR TEMPERATURE MODEL 303

FRONT MOUNT

REAR MOUNT

- OAT (F) & OAT (C)
- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. F & C / Voltage (Front Mount)	10-24565-14-1	$236.95
O.A.T. F & C / Voltage (Rear Mount)	10-24565-14-2	$234.95

DIGITAL VOLTMETER AMMETER MODEL 475VA/475VAA

M475VA

M475VAA

- Low current drain .001 amp
- Plus 100.0 volt D.C. range
- 1.3" case depth
- Sunlight readable
- One tenth volt resolution

- Plus or minus 100.0 amp range
- 2¼ Standard mount
- 5, 14, or 28 volt back lighting
- One tenth amp resolution

The M475VAA has dual shunts and can read voltage and two current flows (M475VA has a single shunt). The 475VA and the 475VAA were designed for low current drain and are also used in standby and emergency battery packs. One example of safety is if the alternator fails, you can monitor the load current out of the battery.

Description	Part No.	Price
Volt/Amm Meter 14V Lighting (Single Shunt)	10-03319	$272.95
Volt/Amm Meter 28V Lighting (Single Shunt)	10-03320	$272.95
Volt/Amm Meter 14V Lighting (Double Shunt)	10-03321	$299.95
Volt/Amm Meter 28V Lighting (Double Shunt)	10-03322	$299.95
Volt/Amm Meter 14V Lighting (Single Shunt) With Night Vision Compatibility Green A	10-04562	$367.00
Volt/Amm Meter 28V Lighting (Single Shunt) With Night Vision Compatibility Green A	10-04564	$367.00
Volt/Amm Meter 14V Lighting (Double Shunt) With Night Vision Compatibility Green A	10-04566	$367.00
Volt/Amm Meter 28V Lighting (Double Shunt) With Night Vision Compatibility Green A	10-04567	$367.00

DIGITAL OUTSIDE AIR TEMPERATURE

MODEL 301

- OAT (F)
- OAT (C)
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. Celsius (301 C), Amber LED	10-08312	$129.80
301C 3 Pin Connector for Probe, Amber LED	10-03316	$137.75
O.A.T. Fahrenheit (301 F), Amber LED	10-08512	$145.75
301F 3 Pin Connector for Probe, Amber LED	10-03317	$137.75
O.A.T. Celsius, Green LED	10-04543	$137.75
O.A.T. Celsius, White LED	10-04544	$137.75
301C 3 Pin Connector For Probe, Green LED	10-04545	$145.75
301C 3 Pin Connector For Probe, White LED	10-04546	$137.75
O.A.T. Fahrenheit, Green LED	10-04547	$136.75
O.A.T. Fahrenheit, White LED	10-04548	$137.75
301F 3 Pin Connector For Probe, Green LED	10-04549	$145.75
301F 3 Pin Connector For Probe, White LED	10-04551	$145.75

M307FC

M307FCE

M307FCI

- OAT (F) & OAT (C) Voltage
- Bright Sunlight Readable Displays
- Input Voltage 11 TO 28 Volts.
- Complete with 12 FT. Digital Probe.

Description	Part No.	Price
O.A.T. F & C (307FC)	10-08513	$208.95
O.A.T. F & C Cabin Air (307FCI)	11-05881	$209.95
O.A.T. F & C & Voltmeter (307FCE)	10-04552	$241.95

M307CD

M307FD

Description	Part No.	Price
Celsius Differential Intercooler (307 CD)	10-03318	$273.95
Fahrenheit Differential Intercooler (307 FD)	11-05882	$273.95

MODEL 450

MODEL 451

- Aircraft Voltage with Flashing Alarm
- Bright Sunlight Readable Display
- Input Voltage 11 TO 28 Volts.

- Aircraft Voltage (451)
- Bright Sunlight Readable Display
- Minimum panel Space
- Input Voltage 11 TO 28 Volts.

Description	Part No.	Price
Voltmeter (450), Amber LED	10-24505	$113.85
Voltmeter (450), Amber LED, Remote Sensing	10-04555	$118.75
Voltmeter (450), Green LED	10-04553	$110.90
Voltmeter (450), Green LED, Remote Sensing	10-04556	$129.75
Voltmeter (450), White LED	10-04554	$111.75
Voltmeter (450), White LED, Remote Sensing	10-04557	$128.99
Voltmeter (451), Red LED	10-02819	$127.75
Voltmeter (451), Red LED, Remote Sensing	10-04558	$134.75

ACCESSORIES / REPLACEMENT PARTS

Description	Part No.	Price
KW-105G Display for Model 303, 307, 655, 880, & 903	11-04611	$46.95
KW-115G Display for Model 303, 655, 850, 877, & 880	11-04612	$54.75
KW-505F Digital Display for model 811B	11-04613	$47.80
800 Series Alarm Son-Alert	11-04610	$49.50
Temp Probe - 7Ft Red/Black Twisted (Analog)	11-04598	$69.75
Temp Probe - 12Ft COAX C307PS (Analog)	11-04603	$68.75
Temp Probe for 307CD/307FD (Analog)	11-04602	$71.75
Temp Probe 12Ft COAX D307PS (Digital)	11-10717	$68.75

See our website for additional sizes.

IN

TACHOMETERS – TACH CABLES

MITCHELL MECHANICAL TACHOMETERS

3-1/8" Tach

In 1985 AC discontinued production of the popular "RT" series of mechanical tachometers. Mitchell immediately entered the market to fill the void. These tachs feature exceptional accuracy and reliability. Mitchell tachs come with a factory-direct 2 year warranty. The range on all models is 500 to 3500 RPM. Accuracy is +/- 25 RPM from 1000 to 3000 RPM. Determine the correct part number from the chart below. All Mitchell tachs are FAA approved to TSO-C49b for certified aircraft. 2-1/4" tachs are direct replacements for the 3-1/8" tachs to save panel space. $30.00 for custom range marks (specify ranges). $12.50 to set hours (specify hours).

Mitchell P/N	Our P/N	Price
D1-112-5023	10-24623	$198.75
D1-112-5122	10-24622	$199.00
D1-112-5030	10-24630	$223.00
D1-112-5124	10-24624	$231.95

Mitchell P/N	Our P/N	Price
D1-112-5025	10-24625	$198.75
D1-112-5032	10-24632	$223.00
D1-112-5028	10-24628	$199.00

Mitchell P/N	Our P/N	Price
D1-112-5034	10-24634	$198.75
D1-112-5029	10-24629	$223.00
D1-112-5024	10-24644	$199.00

2566 Cruise RPM Clockwise.....P/N 98480-2..... 2-1/4" TACH (98480-2).....$226.00
2300 Cruise RPM Clockwise.....P/N 10-02046..... 2 1/4" TACH $226.00

2-1/4" Tach

IFR P/N	Mitchell P/N	Stewart Warner No.	AC Type	Direction of Rotation	Average Cruise RPM	APPLICATION (REPLACEMENT FOR ORIGINAL EQUIPMENT INSTALLATIONS)
55-35-7	D1-112-5023	P-551-AZ	RT-7	Clockwise	2300	Aero Commander: A9, A9A, A9B Aeronca: 15AC Sedan Alon: F1, F1A, A-2, A-4 & 415C. D, E, F, G (Including Ercoupe and Forney) Grumman/American: AA-1, AA1A, AA-5 Beech: C35, D35, E35, F35 Bellanca/Champion: 7EC, 7FC, 7GC, 7HC,7GCB, 7K, 7ECA, 7GCAA, 7GCBC, KCAB, 8KCAB, 260, 14-19, Viking 300, TurboViking Call: A2, A3, A4, A5, A9 Cessna: 120, 140, 170, 180, 182, 185 (with IO-470 eng.) 188, 336, 337 Culver: Cadet Lake Aircraft: C-1, C-2, L-4, LA-4SC, LA5 Mooney: Mark 20, 20A, 20D, 21, 200, 201, 202, 220 Piper: PA12, PA16, PA18, PA20, PA22, PA23, PA24, PA25PA28,PA30,PA32,PA39 Rockwell: 112, 114 Taylorcraft: 19,15A, 20, 20AG, Zephyr Temco: (Swift: GC-1, GA-1B)
55-35-8	D1-112-5122	P-551-AYZ	RT-8	Clockwise	2050	Beech: 35, A35, B35, 35R
55-35-9	D1-112-5030	P-551-AZH	RT-9	Counter-clockwise	2300	Aeronca: Champion, Chief (early models) Piper: PA15, PA18, (W/TCM eng)
55-35-10	D1-112-5124	P-551-AZJ	RT-10	Counter-clockwise	2050	Aeronca: Champion, Chief (late models) Champion: 7AC, 11AC, 7CCM Beech
55-35-11	D1-112-5025	P-551-TA	RT-11	Clockwise	2566	Bonanza Models: G35 thru V35, V35TC, 36, A36, 95, B95, B95A, D95A- All Musketeer Models. All Debonair Models Cessna:150,152, 172, 177, 185 & 188 (with IO-520 eng), 206, 207, 210, 310, 320 Helio: H250, H391, H392, H395 Navion: E, F, G Stits: SA9A, SA9B Bellanca/Champion: 7AC
55-35-12	D1-112-5032	P-551-AZK	RT-12	Counter-clockwise	2566	Stinson: 105,108
55-35-14	D1-112-5028	P-551-AZA	RT-14	Clockwise	1800	Aero Commander (Ayres Corp.) B1A, S2B, S2C, S2D, S2R Stearman: A75 (P & W eng.)
55-35-15	D1-112-5034	P-551-AZB	RT-15	Clockwise	3000	Cessna; 175
55-35-16	D1-112-5029	P-551-AZL	RT-16	Counter-clockwise	1800	Grumman; G164
55-35-17	D1-112-5024	N/A	RT-17	Clockwise	2400	Maule: M5/6/MX7-180, M5/6/7/MX7-235

Cub Face Dial 3" CW.....P/N 10-05450.....$35.50 Cub Face Dial 3" CCW.....P/N 10-05451.....$35.50

*The specific tachometer listed is best suited if the installation has this approximate cruise rpm.

Direction of rotation must be compatible with the previous tachometer that was used. Direction of rotation is defined as when viewing the front of the tachometer.

SLI AIRCRAFT TACHOMETERS

For three decades, Superior Labs, Inc. (SLI) has supplied the aircraft OEM's with the finest quality and most reliable mechanical tachometers in the industry for new production aircraft and can be customized for a variety of aircraft applications. These are now available to the public as aftermarket tachometers. Specifications: • Accuracy to within ± 25 RPM • Range 0-3500 RPM • Diameter 3-1/8" • Length 3-1/2" • Weight: 13 Oz. • Two Years Warranty Most Models $335.00

Accessories	Part No.	Price
SLI Custom Range Markings	10-03685	$124.99
Sli Tach Lighting	10-03672	$101.95
SLI Tach Hours Set	10-03673	$124.99

SEE WWW.AIRCRAFTSPRUCE.COM FOR APPLICATION CHART, PART NUMBERS, AND PRICES.

TACHOMETER RIGHT ANGLE DRIVE

Attach this 90° adapter to male thread on the recording tachometer & female end of the tach cable. Makes installation possible in "impossible" places. May also be used as a reversing drive by removing plug and replacing it with threaded fitting opposite it. Screw plug in opening left by fitting removed. 1:1 Ratio. P/N 10-00815.....$73.85

RIGHT ANGLE TACH DRIVE

Right angle tach drive. All connections and case are Aluminum. P/N 10-05504.....$59.78

DUAL TACHOMETER DRIVE

Adapter screws to the male thread on the back of the tachometer. The two tachometer cables screw onto the opposite sides of the dual adapter. 1:1 Ratio.
P/N 10-01445..... $108.80

ENGINE RIGHT ANGLE DRIVE

Female end attaches to engine tach drive outlet. Male output end accepts standard tach cable female nut (7/8-18 thread). Eliminates bending of tach cable at the engine in cramped installations. Designed for heavy-duty service. Gears and shafts are of heat-treated alloy steel. Oil impregnated sintered bronze shaft bearings. Cast iron case and fittings. With lubricator fitting for greasing. 1:1 ratio. P/N 10-00814.....$69.75

TACHOMETER CAP

This Tach Cap can be used to close off the tachometer drive of a Lycoming engine when an electronic tach drive is being used off the magneto or electronic ignition. 7/8" thread and Viton (R) O-ring to seal. P/N 10-06754.....$19.95ea

FALCON MECHANICAL TACHS

Falcon TH-007C Tachometer - Non-TSO'd tachometer, 3-1/8" square. Mechanical TH-007 series for Lycoming engines have a color band. 2250-2375 rpm cruise range. P/N 10-05275.....$114.95
Falcon T2-001U Tachometer - For both point and Ducati Ignitions. Standard pointer type. Universal, 0-8000rpm, Point and CDI. Compatible with rotax point and CDI ignition, not compatible with 912, 914. P/N 10-00816.....$79.75

TACHOMETER CABLES

Custom made cables to exact specifications. Over-length cables can cause problems - order one that fits the installation. Select the proper length from the listing below, but measure old tach cable to verify length in chart is correct for your aircraft. Measure original cable from end of Ferrule to end of Ferrule when fully extended. Left lay is standard on all stock tach cables. Tach Cables have male ends only. 7/8-18 on one end and 5/8-18 on the other. No female ends. When ordering special length tach cables specify aircraft, engine make, model & dash number. Note: General rule for installation: Tach cable should be installed as straight as possible - the inner cable length will decrease 11/16" per 360 degrees of bends.

Tach Cable Ass'y – Lengths to 4ft (Add $2.50/Ft. for Longer Lengths)
4 foot length.....$54.75

Inner Cable Only – Length is 4ft (Add $0.90/Ft. for Longer Lengths)
P/N $28.00

TACH CABLE LENGTH

Various	10-02675	22"	Mooney	10-00012	46"
Aeronca Chief	10-15700	29-1/2"	Navion	10-16400	42"
Aeronca Champ	10-15700	29-1/2"	Piper J3, J5	10-16500	34"
Bellanca Cruisair	10-15800	26"	Piper PA-22	10-16600	32"
Cessna 120, 140	10-15900	29"	Stinson	10-16700	35"
Cessna 175	10-16000	25"	Universal Use	10-16900	48"
Cessna 170,172,180	10-16100	37"	Various	10-16910	52"
Mooney	10-16200	36"			

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

TACHOMETERS

UMA 2-1/4" ELECTRONIC TACHOMETERS

These tachs have high resolution and easy to read displays. The analog model has a 250° sweep which provides great resolution in both the 3500 & 7000 ranges. The digital model has a bright LED display. Separate power source required. All tachs require power from a 14 or 28V system. Installations are simple with instructions included.

3500 ANALOG TACH - Lyc./Continental (to replace mechanical tachs) Current: 37 milliamps Size: 2.25"rnd. X 2.75"deep. Magnetic pickup (6 ft. cable length) included with P/N's 10-02141 and 10-02140 (T1A9). 6 ft. harness, sending unit, and .156 diameter tang adapter included with P/N 10-00083 (1A3-4).

0-3500 RPM, 4 cyl., Pulses:1 ..... P/N 10-02140 .....$264.95
0-3500 RPM, 4 cyl., Pulses:2 ..... P/N 10-00083 .....$269.95
0-3500 RPM, 6 cyl. ..... P/N 10-02141 .....$249.00

7000 ANALOG TACH - Current: 37 milliamps; Size: 2.25" round X 2.75" deep

Rotax 19-519-206.....P/N 10-01854 .....$178.75
Rotax 912.....P/N 10-01853 .....$152.75
Rotax 912/914 Lit.....P/N 10-02053 .....$140.95

UMA ELECTRONIC TACHOMETERS

These electronic tachometers use a 250° sweep meter movement to withstand high levels of vibration and register flight time accurately. The hour meter counts flight hours at RPM settings of 1800 & higher. Power: 12-28VDC. 2-year warranty.

Range	Description	Part no.	Price
0-7000 RPM	3-1/8" For Rotax 912 Engine B & W Markings, built-in hourmeter	10-00119	$253.95
	3-1/8" For Rotax 912 Engine Color Markings	10-04223	$283.95
	2-1/4" For Rotax 912 Engine Color Markings	10-01852	$176.75
0-3500 RPM	3-1/8" *To replace Mechanical Tachometer (readsCW or CCW; B&W Dial Only) Furnished w/mechanical sender	10-00120	$355.00
0-3500 RPM	3-1/8" *To replace Mechanical Tachometer (Green Arc 500-2700 - Red 2700) Furnished w/ mechanical sender	10-00121	$375.00

* P/N 10-00120, 10-00121, 10-24870, & 10-24885 tachs eliminate the problems associated with mechanical tach cables, and the sending unit is a direct replacement for the tach cable. All models are analog style tachs with hour meters and can read RPM for either clockwise or counter-clockwise revolutions. Sender included. **Slick Mags Only

UMA SENDING UNITS FOR TACHOMETERS

Unit 1A3-4 - Sending Unit 1A3-4 only
P/N 10-01706..... $121.75

T1A9 Magnetic pickup for Slick or Bendix Magnetos (6 ft. cable lengths)
Slick.....P/N 10-02432..... $99.75
Bendix.....P/N 10-02433..... $97.75

T1A9

WESTACH TACHOMETERS

CLamps to ultralite tubing or motorcycle handle bar. Swivels 360° at any angle. Furnished with chrome plated installation hardware. SINGLE TACH (Tachometer requires no sender.)

PWR By	Application	RPM	Head Type	MFR PN	Part No.	Price
Mag	2/4 cyl. dist/mag & 1/2 VW	0-5000	Round	Y2CT61.32A	10-02926	$118.75
Mag		0-8000	Round	2CT8-2	10-02928	$123.75
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctic at)	0-5000	Round	2CT5A-2/6	10-02923	$118.75
CDI		0-8000	Round	2CT8A-2/6	10-01302	$114.50
CDI	Jabiru 5 imp alt.	0-3500	Round	2CT3A-5	10-00480	$116.75
CDI	Jabiru 6 imp alt.	0-3500	Round	2CT3A-6	10-00481	$117.75
Mag	2/4 cyl. dist/mag & 1/2 VW	0-3500	Square	2AT3-2	10-01275	$131.75
Mag		0-5000	Square	2AT5-2	10-01294	$128.75
Mag	3/6 cyl. dist/mag except GEO	0-3500	Square	2AT33-2	2AT33-2	$127.90
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctic at)	0-8000	Square	2AT8A-2/6	2AT8A-2/6	$122.75
CDI	Jabiru 5 imp alt.	0-3500	Square	2AT3A-5	10-00478	$127.90
CDI	Jabiru 6 imp alt.	0-3500	Square	2AT3A-6	10-00479	$126.75
Mag	2/4 cyl. dist/mag. 1/2 VW	3500	Round	2CT3-2	10-03925	$123.75
Mag	2/4 cyl. dist/mag. 1/2 VW	5000	Round	Y2CT61.32A	10-03926	$247.00
Mag	3/6 cyl. dist/mag except GEO	3500	Round	2CT33-2	10-03902	$123.75
Mag	3/6 cyl. dist/mag except GEO	5000	Round	2CT53-2	10-03903	$104.75
Mag	3/6 cyl. dist/mag except GEO	8000	Round	2CT83-2	10-03904	$121.75
Mag	8 cyl. dist/mag	5000	Round	2CT54	10-03906	$116.75
Mag	8 cyl. dist/mag	8000	Round	2CT84	10-03907	$112.85
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctic at)	3500	Round	2CT3A-46	10-03908	$108.75
CDI	Rotax 912 & 914	8000	Round	2CT8A-1A	10-03924	$135.75

WESTACH 2-1/4" TACH/HOUR METERS

SQUARE

ROUND

PWR By	Application	RPM	MFR PN	Part No.	Head Type	Price
Mag	2/4 cyl. dist/mag & 1/2 VW	3500	Y2AT3-2	10-01305	Square	$228.95
Mag		8000	Y2AT8-2	10-01690	Square	$223.95
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctic at)	3500	Y2AT3A-2/6	10-01689	Square	$222.95
CDI		8000	Y2AT8A-2/6lc	10-00829	Square	$226.95
Mag	2/4 cyl. dist/mag & 1/2 VW	3500	Y2CT3-2	10-01691	Round	$205.95
Mag		3500	Y2CT8-2	10-01693	Round	$246.95
CDI	2 or 6 imp alt (Rotax, 2Si, Hirth, Arctic at)	3500	Y2CT3A-2/6	10-01692	Round	$205.95
CDI		8000	Y2CT8A-2/6	10-01694	Round	$217.95

ELECTRONIC TACHOMETER 0-3500 RPM FOR 6 CYLINDER

UMA has one of the most extensive line of tachometers available on today's market. They manufacture tachometers for a wide variety of engines and ignition systems used in ultralights, kit planes, and most general aviation aircraft.3-1/8" .....P/N 10-02116 .....$322.00

FOR 4 CYLINDER -

3-1/8" 0-3500 RPM (2 Pulse).....P/N 10-00120 .....$355.00

UMA ELECTRONIC TSO'D TACHS

Owners of Lycoming &d Continental powered airplanes now have an electronic, analog alternative to the old cable driven tachometer. The new UMA tach is certified to FAA TSO C49b standards for fixed wing aircraft. The system uses a tach sender mounted on the engine in place of the mechanical cable and is connected to the indicator with a single, 3-conductor cable. The 3 1/8" indicator utilizes a high torque pivot and jewel movement. The hour meter can be factory set to start at any desired RPM point. This unit gives the pilot the analog display that is easiest to scan and provides electronic accuracy and ease of installation. Custom dial markings in color & internal Electro-Luminescent lighting are available at extra cost. UMA manufactures a complete line of TSO'd & non-TSO'd gauges & instruments in the USA.

UMA Model#	Range	Dial Marking	Part No.	Price
T19-801-10	0-3500 RPM	Black & White	10-01221	$448.00
T19-801-11	0-3500 RPM	Green Arc 500-2700 & Red Line 2700RPM(Lyc)	10-01222	$471.00

UMA ELECTRONIC TACHOMETER WITH HOURMETER

3 1/8" Analog Tachometer with hourmeter. 4 Cylinder. 0-3500 RPM. Records engine time above a set RPM point. Standard set point is 1800 RPM. Engine Type: Continental/ Lycoming. TSO'd Magnetic pickup for Slick or Bendix Magnetos (6 ft. cable length), alternative to p-lead connections.

For Bendix Mags .....P/N 10-04867 ..... $322.00
For Slick Mags .....P/N 10-04868 ..... $323.00

P-1000 DIGITAL TACH BY HORIZON INSTRUMENTS

Provides diagnostic and performance information about the aircraft engine and ignition system not normally available with current mechanical or electrical/electronic tachometers. Eliminates problems resulting from inaccurate tachometers. STC approved for primary installation, not just secondary. Also incorporated into the P-1000 is a highly accurate engine hours clock, and an RPM Trap memory that recalls the highest RPM achieved by the engine. Both features are enabled with a touch of a button. The P-1000 is housed in a rugged, light-weight aluminum standard 3-1/8 inch "MS" style case. Installation is simple. Only four wires are connected, all of which are located under the panel! The P-1000 is the ideal aircraft tachometer, for upgrades or new designs, providing the conscientious pilot with high reliability, accurate RPM reading, and valuable diagnostic information.

P/N 10-01592..... $609.00

TRU-TACH II DIGITAL TACHOMETER

Mechanical tachometers are notoriously inaccurate. The TruTach II Optical Digital Tachometer measures the true speed of your propeller from inside or outside the aircraft. Just point it at the propeller or rotor blades and TruTach II will directly display the rotational speed with a resolution of 1 RPM. No connection to aircraft systems is required and measurements may be made at any speed setting from 240 to 70000 RPM. Direct display is available for 2, 3, 4, and 5 blade propellers. Digital Signall Processing assures rock-solid display in single and multi-engine aircraft as well as helicopters. The compact 4-inch instrument weighs just 4 ounces and may be used with fast turning ultra-lights and kit plane propellers. Automatic shut-off turns the unit off if you forget. Includes 9 volt battery providing 150 hours of operation. P/N 10-01021..... $194.00

2-1/4" REMOTE HEAD TACHOMETER

This tachometer is driven with power supplied by a transducer on the engine tach drive. Range 0-3500 RPM. Wt. 6 oz. Includes Gauge, sender, and tang.

Complete kit.....P/N 10-00805 ..... $282.95
Sender only.....P/N 10-02084 ..... $72.50
Tang only .....P/N 444-2 ..... $5.95

1A3-4

WESTACH TACHOMETERS

KY3GA3-1/2A - 500-3,500 RPM with hourmeter kit, 3-1/8" sq., 1/2 to 1 ratio. adjustable, with 303 DGT sender, 444-2 tang, 208-SS-SS cable. PN 10-02644.....$234.95

K3GA3-1/2A - Tachomter 500-3,500 RPM kit, 3-1/8" square, 1/2 to 1 ratio. adjustable with 303DGT sender, 444-2 tang, 208-SS-SS cable. Does not come with a sender. PN 10-02643.....$158.75

IN

ALCOR EGT & CHT SYSTEMS

BASIC EGT & CHT SYSTEMS

FAA and PMA approved for all reciprocating-powered aircraft!

2-1/4" GAUGES

A46125

A46150

A46126

A46151

A46127

A46164

3-1/8" GAUGES

A46124

A46155

A46156

A46157

Instruments: Provide a quick and easy way to troubleshoot and determine an engine's efficiency. Alcor's instruments are known for their quick response time, easy-to-read design and long life. All Alcor instruments are FAA/PMA approved for anything piston-powered that flies! Available in 2 ¼" and 3 1/8" diameters, these instruments can be purchased in single or dual configurations with or without internal lighting. Special order options are also available. All Alcor instruments carry a 3 Year Warranty!

Sensors: Recommended by the most popular manufacturers of digital engine monitoring systems because Alcor sensors are: • Made from the highest-quality materials • FAA approved • Provide fast response time • Built to last • Covered by a 5 Year warranty for grounded probes • Manufactured in the USA!

Basic Systems: Kit includes the 2 ¼" or 3 1/8" instrument, one lead and one sensor for single cylinder EGT or CHT monitoring.

Multi-Cylinder Systems: Kit Includes 2 ¼" or 3 1/8" instrument, all leads, switches and sensors for EGT and CHT monitoring of every cylinder. Alcor's 2 ¼" instrument uses Alcor's Universal Cylinder Selector (UCS) (p/n 80825 or 80827) switch to convert the basic system into an affordable Alcor analyzer!

BASIC SYSTEMS		
System	Part No.	Price
EGT	10-08700	$273.95
CHT	10-08800	$316.95
EGT/CHT 2-1/4"	10-08900	$664.00
EGT/CHT 3-1/8"	10-20700	$585.00

ANALYZER SYSTEMS		
System	Part No.	Price
EGT (4Cyl.)	10-09000	$753.00
CHT (4 Cyl.)	10-09100	$826.00
EGT/CHT (4 Cyl.)	10-09200	$1,572.00
EGT (6 Cyl.)	10-09300	$997.00

IN

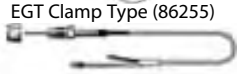
ALCOR PROBES

Alcor's probe (thermocouples) reliability is legendary in the aviation community, designed to give years of dependable and accurate service.

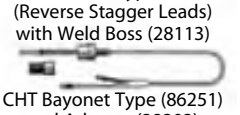
GROUNDED THERMOCOUPLES

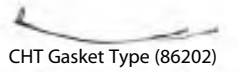
ALCOR	DESCRIPTION
86255	EGT Clamp Type Probe min/ max dia.-1.5"to 3.25") (Yellow/Red, Chrome/ Alumel)
86240	EGT Screw-In Probe, fitting dims: 7/16" x 20 threads (Yellow/Red) less boss
86245	EGT Screw-In Probe, fitting dims- 7/16" x 20 threads (Yellow/Red, reverse stagger leads) less boss
28113	Weld Boss
86251	CHT Bayonet Probe (Black/ Yellow,
28202	Iron/Constantan) AN5541-1 CHT Bayonet Probe Adapter
86202	CHT Gasket Style Thermocouple. Type: J - Black and Yellow. Grounded Style: Gasket. Size: 18 mm. Resistance: .13 + .16 Ω - .05 Ω. Weight: 0.12 lbs.

EGT Clamp Type (86255)


EGT Screw-In Type (86240) with Weld Boss (28113)

EGT Screw-In Type (86245) (Reverse Stagger Leads) with Weld Boss (28113)


CHT Bayonet Type (86251) and Adapter (28202)


CHT Gasket Type (86202)

EGT/CHT Leads

IMPORTANT! EGT systems & components with red/brown color codes are not compatible with systems & components using red/yellow codes.

Alcor Systems are FAA Approved and the grounded probes have a 5Yr factory warranty, the ungrounded probes have a 1yr factory warranty, and the instruments have a 3yr factory warranty.

ALCOR ALCAL 2000+ SYSTEM TESTER

ALCAL 2000+ EGT/CHT TESTER: The Alcal 2000+ provides everything needed for accurate calibration and troubleshooting of EGT/CHT/TIT, Type K, J, and E systems. The tester will simulate thermocouple output millivolts so that instruments can be calibrated on the ramp or in the shop. The Alcal 2000+ will also receive a millivolt input while testing Alcor and other thermocouples installed in its special heater for accurate analysis at operating temperatures.

The Alcal 2000+ is also designed to check the accuracy of an entire system or the individual components. While the thermocouple is in the heater, the instrument can be read in the panel and recalibrated as necessary while simulating temperatures up to 1750 F. An easy-to-read LCD display makes accurate settings a snap. With its rugged Pelican case, the Alcal 2000+ is ready to use anywhere! Certification of the Alcal 2000+ is traceable to National Institute of Standards and Technology (NIST).

Features:

• Redesigned Pelican case with removable lid for stress-free use in any environment
• Internal carrying handle for tranquil transport and handling with or without the lid
• Additional EGT/TIT Heater that accepts competitors' larger probes and tests both digital and analog systems
• Easy access to the fuse and 9V Lithium battery for quick replacement if necessary
• Plus, all the great features of the Alcal 2000 (FAA/PMA not required)

Specifications:

• 9V Lithium Battery-powered
• 12lbs
• Alcor P/N: 85337

2000+ System Tester.....P/N 10-04981 .....$2,880.00

Accessories

28187 Gasket Thermocouple Adapter.....P/N 10-04959 ..... $54.75
35291 EGT Heater 1.28 Hole.....P/N 10-04956 .....$264.95
35309 EGT Heater.....P/N 10-04953 .....$260.95
35311 CHT Heater.....P/N 10-04957 .....$257.95
86188 EGT Reference Thermocouple.....P/N 10-04954 ..... $72.75
86261 CHT Reference Thermocouple.....P/N 10-04958 ..... $92.95

ALCOR EGT & CHT COMPONENTS

ALCOR COMPONENT PRICE LIST

Alcor	Our P/N	Description	Price
EGT Leads, Type K			
42525	42525	EGT Leads, Type K (90")	$33.50
42526	42526	EGT Leads, Type K (144")	$43.85
42527	10-00131	EGT Leads, Type K (240")	$61.75
42528	42528	EGT Leads, Type K (216")	$59.75
CHT Leads, Type J			
42535	42535	CHT Leads, Type J (90" 8 ohm)	$39.50
42536	42536	CHT Leads, Type J (144" 8 ohm)	$48.95
42537	42537	CHT Leads, Type J (240" 8 ohm)	$61.75
42543	42543	CHT Leads, Type J (216" 8 ohm)	$59.75
Meters, Single 2-1/4"			
46149	10-03859	EGT Internal light 24V Type K	$229.95
46150	46150	EGT Type K Fahrenheit red and yellow	$174.75
46151	46151	CHT Type J, Fahrenheit black & yellow	$174.75
46162	10-00992	EGT Type K, Fahrenheit (Green Arc)	$222.95
46164	10-00993	EGT Type K,Fahrenheit (No Green Arc)	$192.75
46171	10-00996	CHT Type J, Celsius Black & Yellow	$222.95
46244	10-00997	EGT 240" Lead Type K, Fahrenheit (Green Arc)	$247.95
Meters, Dual 2-1/4"			
46124	10-00994	TIT/TIT Type K, Fahrenheit Red & Yellow	$445.00
46125	10-00126	EGT/EGT Type K Red & Yellow	$424.00
46126	46126	EGT/CHT Type K & J, Fahrenheit	$439.00
46127	10-00127	CHT/CHT Type J, Fahrenheit	$418.00
Meters, Dual 3-1/8"			
45993	10-00998	EGT Type E Fahrenheit Red and Brown. Designed for twin engine aircraft.	$720.00
46115	10-03861	EGT/EGT 24V Type K. Designed for twin engine aircraft.	$438.00
46155	10-00128	EGT/EGT Type K	$350.00
46156	46156	CHT/EGT Type J & K, Fahrenheit	$356.00
46157	10-03860	CHT/CHT Type J Farenheit	$359.00
46224	10-00999	TIT/TIT Type K, Fahrenheit	$411.00
EGT Probes, Type K			
86143	10-01005	Model N, Screw-In (1/4" NPT)	$125.95
86159	10-01006	Model H, Screw-In (1/4" NPT)	$128.95
86160	10-01007	Model J1, Screw-In (7/16"-20)	$127.95
86161	10-01008	Model K, Screw-In (1/4" NPT)	$127.95
86226	10-01009	Model A, Clamp, 11.56" length (Reverse Stagger)	$126.99
86230	10-01011	Model N2, Screw-In (1/4" NPT)	$124.95
86240	10-00129	Model B, Screw-In (7/16-20)	$88.95
86245	86245	Model B,Screw-In(7/16"-20) (Reverse Stagger)	$88.95
86255	86255	Model A, Clamp (Normal Stagger)	$79.75
86275	10-01012	Model A, Clamp, 13.6" (Rev. Stagger)	$89.75
86281	10-01013	Model A, Clamp C/A Extended Lead	$158.85
EGT PROBES, Type E			
86149	10-01014	Model B, Screw-In (7/16"-20)	$397.00
86153	10-01015	Model H, Screw-In (1/4 NPT)	$397.00
86156	86156	EGT/TIT probe. Clamp 1-1/8"-3-1/4"	$395.00

Alcor	Our P/N	Description	Price
CHT Probes			
86146	AN5546-1	Bayonet (AN5546-1) Thermistor	$343.00
86202	86202	Gasket Style Type J 18mm	$105.75
86251	86251	Bayonet Style Type J	$78.95
86252	10-04949	Bayonet Style, Type K, Red/Yellow, reverse stagger	$77.75
86253	10-04951	Screw In Style, Type K, normal stagger, Red/Yellow	$89.95
Parts and Accessories			
35309	10-04953	EGT Heater (1004-6)	$260.95
86188	10-04954	EGT Reference Thermocouple (1004-7)	$72.75
35291	10-04956	EGT Heater .128 Hole	$264.95
35311	10-04957	CHT Heater (1004-26)	$257.95
86261	10-04958	CHT Reference Thermocouple	$92.95
28187	10-04959	Gasket Thermocouple Adapter (1004-72)	$54.75
Ungrounded EGT Probes			
86307	10-86307	Screw-In (1/4 NPT)	$429.00
86341	10-04952	Red/Yellow, Screw-in (1/8 NPT)	$419.00
86308	10-86308	Screw-In (7/16-20)	$429.00
86309	10-86309	Screw-In (7/16-20), Extended Lead	$429.00
86310	10-86310	Clamp - 2.35" max	$395.00
86343	10-86339	Clamp (with Plug, Short) 3.25"max	$329.00
Accessories			
28113	10-01017	Weld Boss 7/16 UNF (for B Probe)	$23.80
28202	28202	CHT Adapter for Bayonet Probe (AN4076-1)	$23.95
28204	10-01018	Plug for 28113 Weld Boss.	$23.50
42523	10-01019	EGT Lead Stagger Adapter. Type K	$7.75
80825	80825	Universal Selector Switch - 2 section	$147.95
80827	80827	Universal Selector Switch - 4 section	$179.85
Vernier			
93882	10-01020	Vernier Control Assembly 112"	$128.95
Alcor, CHT Parts			
28202	28202	Bayonet Thermocouple Adapter (1004-4)	$23.95

ENGINE MONITOR PROBE PACKS

Description	Part No.	Price
Alcor 4 Cylinder EGT/TIT, Type K Clamp Style Probe Kit*	10-05315	$268.95
Alcor 6 Cylinder EGT/TIT, Type K Clamp Style Probe Kit*	10-05316	$449.00
Alcor 4 Cylinder CHT, Type K Screw In Style Probe Kit 38062*	10-05317	$326.00
Alcor 6 Cylinder CHT, Type K Screw In Style Probe Kit 38063*	10-05318	$489.00
Alcor 4 Cylinder CHT Bayonet Style Probe Pack w/28202 Type K Kit 38064*	10-05319	$328.00
Alcor 6 Cylinder CHT Bayonet Style Probe Kit w/28202 Adapter**	10-05320	$495.00
Alcor 4 Cylinder CHT, Type J Bayonet Style Probe Kit W/ 28202 38070*	10-05321	$329.95
Alcor 6 Cylinder CHT, Type J Bayonet Style Probe Kit W/ 28202 38071**	10-05322	$495.00
Alcor 4 Cylinder EGT/TIT, Type K Screw In Style Probe Kit 38090*	10-05323	$295.75
Alcor 6 Cylinder EGT/TIT, Type K Screw In Style Probe Kit 38092*	10-05324	$439.75
Alcor 4 Cylinder EGT/TIT, Type K Screw In Style Probe Kit 38097	10-05325	$295.75
Alcor 6 Cylinder EGT/TIT, Type K Screw In Style Probe Kit 38098	10-05326	$439.75

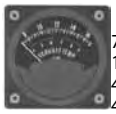
IN

2-1/4" ENGINE INSTRUMENTS

Guaranteed accurate within 2% with a 1-yr. warranty. Weight - an unbelievable 4oz. These instruments are self powered by the thermocouple, except for the lighting.

CYLINDER HEAD TEMPERATURE

100-700°F ..... P/N 2A1 ..... $74.75
25°–375°C ..... P/N 2A1-2 ..... $75.75
SENDERS: CHT Senders have 4 ft. leads.
14mm gasket type (VW, Rotax) ..... P/N 712-4W $31.50
18mm gasket type (Cont,Lyc.) ..... P/N 712-5W $31.85
Bayonet type 3/8" x 24 thread ..... P/N 712-7D $56.75
Bayonet type 1/8" NPT thread ..... P/N 712-7DJ $59.90
(All Rotax) ..... P/N 712-912K $61.75
Westach 713-7DJ CHT Probe - TSO Polarized connections, 'J' wire CHT sender 1/8 npt thread 2 1/2" tip 3/16" OD, 4' LEAD, TSO C43A.
P/N 10-03143 ..... $74.85



EXHAUST GAS TEMPERATURE

700-1700°F/350-950°C ..... P/N 2A2 ..... $72.50
100-1900°F/100-1000C ..... P/N 2A2-1 ..... $71.90
400-900°C ..... P/N 2A2-2 ..... $71.90
4000-1600°F/200-850°C ..... P/N 2A2-7 ..... $71.90
SENDERS - Clamp type senders with 3/16" diameter probe. EGT Senders have 4 ft leads.
1" long tip ..... P/N 712-2DWK $47.85
1/2" long tip ..... P/N 712-20DWK $46.85
Long tip 1/4" threads ..... P/N 712-4D $56.85
3/8-24 for Lycomings ..... P/N 712-4D1 ..... $56.85
Long tip for VW (1/12" OD tailpipe) ..... P/N 712-24DWK $46.50
(All Rotax) ..... P/N 712-32DWK $46.50
Bayonet K type, EGT probe for Rotax ..... P/N 712-4D6K $64.75
Exposed Tip, model 712-20DWKE - Hose clamp style 1/2" probe.
P/N 10-01300 ..... $56.85
Note: Westberg 712 Series Thermocouples are for Non-TSO'd CHT & EGT Gauges only. They have two small pins which are the same size.

OIL TEMPERATURE

100° - 260°F ..... P/N 2A9-2* $69.75
Sending Unit ..... P/N 399S7 ..... $35.50
*Use Sender #399S9-7/8 for Cont & Lyc Engines.
(5/8-18 Thread) ..... P/N 399S9 ..... $49.50

OIL PRESSURE

Guaranteed accurate within 2% with a 1-year warranty. Weight an unbelievable 4oz.
K2A8MM . 0-80 PSI (w/sender)
P/N 10-01292 ..... $307.00

\FUEL PRESSURE

This specially constructed instrument offers accuracy and durability in a lightweight (3.5oz) package. Perfect for home-built and custom applications. K2A8-8MM. 0-15 PS w/Sender(SET) ..... P/N 10-01553 ..... $333.00

WESTACH 387-15KV PRESSURE SENDER

Electronic Pressure Sender, 15 psi, 0.5-4.5 vdc, 1/8" npt. P/N 10-05273 ..... $262.95

MANIFOLD PRESSURE GAUGE

2-1/4" Size 0-30 PSI & 0-50 PSI.
2A4-14 - 0-50 IN HG (square) not altitude compensated ..... P/N 10-04178 ..... $68.80
2A6-6 - 0-30 IN HG ..... P/N 10-04797 ..... $68.75

WESTACH VOLTMETERS

2" round.

Range	Pat No.	Price	Range	Pat No.	Price
18-28 VOLT	10-04184	$74.75	0-200 VDC	10-04193	$59.75
15-50 VDC	10-04185	$67.75	0-100 VDC	10-04194	$58.99
0-300 VDC	10-04186	$58.50	200-400 VDC	10-04195	$67.75
100-200 VDC	10-04187	$67.75	60-90 VDC	10-04196	$67.75
0-80 VDC	10-04188	$59.75	0-150 VOLT w/ threaded studs	10-04203	$58.50
0-150 VDC	10-04190	$59.75	0-300 VAC w/ threaded studs	10-04204	$58.75
180-280 VDC	10-04192	$67.75			

FUEL LEVEL GAUGES (SQUARE)

2-1/4 Non-TSO'd fuel quantity indicators available for single or dual tanks. Require 0-5Vcapacitance senders (not incl.)
Instrument (Single) ..... P/N 2A7V $74.85
Instrument (Dual) ..... P/N 2DA4V $124.90
2A7-2, 0-30 OHM ..... P/N 10-04125 ..... $71.85
2A8-37, 10-180 OHM ..... P/N 10-04129 ..... $69.95
2A7-4, 78-6 OHM ..... P/N 10-04127 ..... $71.85
2A7, 240-30 OHM, Uses Float Sender ..... P/N 11-01210 ..... $69.90
2A7-31, 0-90 OHM, Uses Float Sender ..... P/N 10-04128 ..... $71.85

2AHT7V, Full Sweep Meter ..... P/N 10-04121 ..... $99.85
Sender (6"-12"Depth) ..... P/N 10-00797 ..... $139.75
AP-24-D120-5V Sender (12"- 24" Depth)
P/N 10-03875 ..... $139.75
395-5-5 6" Capacitance, non-bend sender ..... P/N 10-04344 ..... $139.75
395-5SB-5 Sender (6"-12" Depth-Bend.) ..... P/N 10-00798 ..... $139.75
395-5S-1B-5 Sender (12"-24" Depth-Bend) ..... P/N 10-01262 ..... $138.75
AP24B5-D120-SV Sender (24", 5" bend. section) ..... P/N 10-04412 ..... $139.80

FUEL LEVEL GAUGES (ROUND)

2C7V, 2" Round ..... P/N 10-04119 ..... $59.85
2C7-4, 5-78 OHM, Uses Float Sender
P/N 10-04124 ..... $63.75
2C7-2, 0-30 OHM, Uses Float Sender
P/N 10-04122 ..... $63.75
2C7, 240-30 OHM, Uses Float Sender ..... P/N WS2C7 ..... $64.75
2C7-3, 0-10 OHM, Propane, Uses Float Sender ..... P/N 10-04123 ..... $63.75
2CHT7V-5, Fuel Sweep Meter ..... P/N 10-04120 ..... $75.95

WESTACH 0-70 HZ FREQUENCY METER

Westach frequency meter 0-70 Hz, 2" round, 110 vac. P/N 10-04205 ..... $116.75

WESTACH WATER TEMPERATURE GAUGE

2A9-1 Water Temperature Gauge 100-260f, 2 1/4" square, 8-30 vdc.
2-1/4" Westach Water Temp. Gauge Only
P/N 2A9-1 ..... $69.85
Westach Sender #399S1 Only
P/N 10-01288 ..... $33.50
Westach 2-1/4" Water Temp. Gauge with Sender
P/N 10-04948 ..... $102.95

WESTACH DUAL OIL PRESS / WATER TEMP GAUGE

Dual OP 80 psi / WT 100-260f, 2" round, 8 to 30 vdc, Use with 387-80V2-C, white dial
P/N 10-04219 ..... $119.75

OUTSIDE AIR TEMPERATURE

Square Gauge ..... P/N 2A3-3 ..... $69.75
Round Gauge ..... P/N 10-04131 ..... $62.75
Sending Unit ..... P/N 399-OT $45.80

CARBURETOR AIR TEMP

Provides instant icing check of carburetor.
2A3-1 - 2-1/4" square, -50°C to 50°C
P/N10-01243 ..... $74.75
2C3-1 - 2" round, -50°C to 50°C
P/N 10-03949 ..... $64.75
Sending Unit - Fits 1/4-28 Thread
P/N 399W $46.85

COOLANT TEMPERATURE

100° to 260°F, for aircraft and helicopters using coolants other than oil. ..... P/N 10-01301* $69.75
Sending Unit ..... P/N 10-01249 ..... $35.50
Order one Type 381 Fuse Adapter for each tachometer installation as a safety measure against magneto failure.
P/N 10-17000 ..... $9.95

* These instruments may be powered by connection to 12V battery, magneto, distributor or alternator. If installation is to be made using other than 12V electric power, order one Magneto Adapter, P/N 103-18 ($6.30) and one Fuse Adapter, P/N 10-17000 ($6.30) for each instrument. For 24V operation, order one Adapter, P/N 329-24 ($2.30) for each instrument.

AMMETERS (SQUARE)

Westach Ammeter, amp -30-0-+30A adc, 2 1/4" square, 50 mv f/s. Model with or without shunt.
With Shunt P/N10-01267 ..... $112.85
Without Shunt P/N 10-04116 ..... $69.75
-60 to +60A, & #237-3A Shunt
P/N K2A6-15 ..... Set $111.99

WESTACH AMMETER 2A6-15 (SQUARE)

Westach Ammeter, amp -60-0-+60 adc, 2 1/4"square, 50 mv f/s.
With Shunt ..... P/N 10-01277 ..... $111.99
Without Shunt..... P/N 10-04114 ..... $68.85

WESTACH AMMETER 2C6-22 (ROUND)

Westach Ammeter, amp -30-0-30 adc, 2" round, 50 mv f/s. Note: Gauge does not include shunt. Range: -60-0-30 adc. Size: 2" round. Shunt: Model 237-30
Ammeter 2C6-22..... P/N 10-04108 ..... $59.75
Shunt #237-30..... P/N 10-01306 ..... $45.85

WESTACH AMMETER 2C6-15 (ROUND)

Westach Ammeter, amp -60-0-60 adc, 2"round, 50 mv f/s. Note: Gauge does not include shunt. Range: -60-0-60 adc. Size: 2" Round. Shunt (Not Included): Model 237-60
Ammeter 2C6-15..... P/N 10-04104 ..... $58.95
Shunt #237-60 ..... P/N 10-01298 ..... $44.70

WESTACH AMMETER 2C6-11

Westach Ammeter, amp 0-60 adc, 2"round, 50 mv f/s. Note: Gauge does not include shunt. Range: 0-60 adc. Size: 2" Round. Shunt (Not Included): Model 237-60
Ammeter 2C6-11..... P/N 10-04102 ..... $59.75
Shunt #237-60..... P/N 10-01298 ..... $44.70

HOURMETER

Power Range, 5V-40V, Record running time of engine.
P/N 2A10-2 ..... $109.95
No sender required.

VOLTMETERS

Check generator & alternator charging
6-16 VDC.....P/N 2A5 ..... $74.75
0-35 VDC.....P/N 2A5-2 ..... $68.85
No sender required.

WESTACH 2C4-7 GAUGE

Boost 0-30 psi, 2-Inch round, with 220-9, 203-17, 203-21
P/N 10-04155 ..... $58.75

SELECTOR SWITCHES

These switches are used with the Westach CHT, EGT, or CHT/EGT gauges to allow multiple cylinder engine analyzing. Switches included with Engine Analyzer kits & Add-On kits on following pages, or can order separately below. Non-TSO'd. These switches have two small connectors of same size.
2-Position ..... P/N 254-2F..... $35.60
4-Position ..... P/N 254-4F..... $42.95
4-Position (Dual) ..... P/N 254-4DF* $69.80
6-Position ..... P/N 254-6F..... $54.75
6-Position (Dual) ..... P/N 254-6DF* $83.75
*To convert dual EGT/CHT to Engine Analyzer.

FAA APPROVED SWITCHES
4-Position ..... P/N 254-20EP $49.95
6-Position ..... P/N 254-21EP $59.85
6-Position (Dual) ..... P/N 254-21EDPP..... $93.75

These switches are furnished with 96" leads.

WESTACH INSTRUMENT LIGHTING

An internal lighting fixture may be added to all 2" & 3" instruments. Comes with clear bulb and red & green boots.
P/N 10-01229.....$5.65ea

TSO CABLE 2-CONDUCTOR WITH SOCKET

TSO Cable 2-Conductor 3' W /Socket.....P/N 10-02096.....$9.50
TSO Cable 2-Conductor 15' W/ Socket.....P/N 10-02095.....$15.80
TSO Cable 2-Conductor 10' W/ Socket.....P/N 10-02094.....$13.50

WESTACH BULLET CONNECTORS

Bullets are used to connect sockets and sleeves together on the back of Westach instruments. P/N 10-02795 ..... $0.30

WESTACH INSTRUMENTS FOR ULTRALIGHTS

Single CHT..... 10-00419.....$66.75 Single EGT..... 10-01268 ..... $63.75
Thermocouple for CHT (14MM) ..... P/N 10-01227 ..... $31.50
Probe for EGT.. P/N 10-01225 ..... $47.85

SINGLE TACH (Tachometer requires no sender.).....$114.50

P/N	RPM	Powered By	P/N	RPM	Powered By
2CT5-2	0-5000	Mag	2CT5A-2/6	0-5000	CDI
2CT8-2	0-8000	Mag	2CT8A-2/6	0-8000	CDI

DUAL TACH/CHT (All CHT's are 0-600° F) $157.99

P/N	RPM	Powered By	P/N	RPM	Powered By
2DC9-5-2	0-5000	Mag	2DC9-5A-2/6	0-5000	CDI
2DC9-8-2	0-8000	Mag	2DC9-8A-2/6	0-8000	CDI

WESTACH 2DC8 DUAL CHT

Cylinder Head Temp. Range: 100-700°F. Use 48" Type J thermocouples. Input: 9.81 mv @ 400F, Weight: 2.7 oz.
P/N 10-01791 ..... $119.75

BULLET SHELL MOUNTING CASE FOR 2" ROUND WESTACH GAUGES

Molded plastic housing clamps to ultralite tubing or motorcycle handle bar.Swivels 360° at any angle. Furnished with chrome plated installation hardware. P/N 10-01290 ..... $18.85

WESTACH TACHOMETERS FOR DUAL IGNITION

2" Round ..... P/N 10-01302 ..... $114.50
3" Round ..... P/N 3CT8A-2/6..... $136.75
2" Square ..... P/N 2AT8A-2/6..... $122.75
3" Square ..... P/N 3AT8A-2/6..... $145.75

WESTACH ROTOR TACH

For the rotorcraft pilot, the rotor tachometer is a valuable aid to safe flight. Utilize a stateof- the-art Hall-effect sensor to accurately gauge rotor RPM based on the rotational positions of a series of magnets which are easily mounted on the rotor shaft or hub. Sensor and magnets are supplied with the gauge along with complete assembly instructions. 12 volt DC power required. Square style, 2 1/4 inch.
0-500 Tooth 10-03808 $278.95 0-500 Mag. Pulse ..... 10-03809 ..... $278.95
0-800 Mag. Pulse ..... 10-03811 ..... $275.95

WESTACH LOW POWER ADAPTER

For those instruments requiring 12V DC, this low output regulator/rectifier provides sufficient power to operate up to 2 WESTACH instruments. Converts lighting coil AC to 12V DC. Includes instructions, wiring harness. P/N 329-LPA..... $33.95

WESTACH SENDER 720-14RB

Proximity sensor, Hall effect sender for Bendix mag. 9/16 - 24 thd. 5-12 VDC. Weight: 7 ounces
P/N 10-00863..... $71.90

WESTACH EXTENSION LEADS

Complete extension leads, with connector terminals, for extending CHT or EGT leads up to Complete extension leads, with connector terminals, for extending CHT or EGT leads up to 10 ft. without affecting accuracy. Longer lengths give low reading, requiring recalibration of instrument.
18" Lead.....P/N 10-17900.....$10.50 4 Ft. Lead .....P/N 10-18000.....$11.85
6ft Lead .....P/N 10-18100.....$13.60 8 Ft. Lead .....P/N 10-18200.....$14.45
10ft Lead....P/N 10-18300.....$15.50 12 Ft. Lead.....P/N 10-18350.....$16.50

WESTACH TSO'D EXTENSION LEADS

TSO'D 2-Conductor EGT/CHT Extension Leads with sockets and sleeves at both ends.
Westach TSO'D EGT/CHT 6ft Extension .....P/N 10-02161.....$12.70
Westach TSO'D EGT/CHT 8ft Extension .....P/N 10-02162.....$13.85

WESTACH GAUGE WIRE EXTENSION LEADS

10' and 5', 4 wire and 2 wire "Extension Leads" ideal for quick and easy extending CHT, EGT or Tach leads with simple slide together female ends. Female connectors on both ends mate with male posts on gauge backs and sender ends. Extensions will not effect gauge readings.
10 Foot 4 Wire..... P/N 15-05341 ..... $17.80
5 Foot 4 Wire..... P/N 15-06258 ..... $12.75
5 Foot 2 Wire..... P/N 15-06259 ..... $12.85

IN

WESTACH INSTRUMENTS

2-1/4-INCH DUAL INSTRUMENTS SAVE PANEL SPACE (SUPREME SPACE SAVERS)

TWO INSTRUMENTS IN ONE 2-1/4" SIZE CASE - PERFECT FOR THE HOME BUILDER

All pressure instruments come complete w/pressure senders only (matched to instrument). On all other instruments, order senders at bottom of page.

DUAL EGT-CHT
700-1700°F EGT
100-700°F CHT
P/N 2DA1 $127.90

DUAL EGT 700-1700°F
P/N 2DA2 $129.75

DUAL OIL PRESSURE OIL TEMPERATURE
0-80 PSI/100-260°F
P/N 2DA3MM $413.00
Complete w/ oil pressure sender.

DUAL TACHOMETER VOLTMETER
0-5000 RPM/6-16V
P/N 2DA6 $187.75

DUAL TACHOMETER 0-5000 RPM
P/N 2DA5-2 $256.95

DUAL FUEL LEVEL
Uses capacitance type senders. 5V output.
P/N 2DA4V $124.90
2DA4(Old Style) E-F 240-30OHM Float.....$128.75

DUAL CHT
100-700°F
P/N 2DA8 $127.85
Celsius version
P/N 2DA8-2 $128.75

DUAL TACHOMETER CHT
0-5000 rpm/100-700°F
P/N 2DA9-5-2 $188.75

DUAL VOLT-AMMETER
6-16V/0-30 A
P/N K2DA10-21 .. $171.75
6-16KV/0-60 amp
P/N K2DA10-18... $172.75
Complete with Shunt

DUAL CARB TEMP-OUTSIDE AIR TEMP
-50° to +50° C.
P/N 2DA3-8 $127.90
Order 399W & 399-0T Senders Separately

3-1/8" WESTACH GAUGES

TWIN CHT
3-1/8" Size; Wt. 10 Oz., 100-800°F
P/N 3DA8...$146.75
Order 2 thermocouples

TWIN EGT
3-1/8" Size, Wt. 10 Oz. 700-1700°F
P/N 3DA2...$147.75

COMBINATION EGT & CHT
3-1/8" size, Wt.10oz., 700-1700°F/ 100-800°F.
P/N 3DA1..$147.75
Order 1 EGT probe & 1 thermocuople.

RECORDING TACHOMETER
3-1/8" size Runs directly off magneto. 12V power required to run Hour Meter
0-3500 RPM.....P/N Y3AT32.....$233.95

EGT – CHT GAUGES
3-1/8" Square EGT..... P/N 3A2-1 .....$90.75
3-1/8" Round EGT..... P/N 3C2-1.....$75.75
Square CHT..... P/N 3A1 .....$88.75
3-1/8" Round CHT ..... P/N 3C1.....$74.75

All Pressure Instruments come complete with Pressure Senders only (matched to Instrument). On all other instruments order senders at bottom of page.

IN

SPACE SAVING GAUGES - THE WESTACHIADS

Four electric instruments in one standard size 3-1/8" aircraft case. Weight - only 6 oz. Guaranteed for accuracy within 2%. 1 year warranty. Get four "like" readings or four different ones. Order Senders below except for pressure instruments.

QUAD CHT
P/N 3AQ1..$333.00

QUAD EGT.
P/N 3AQ2..$368.00

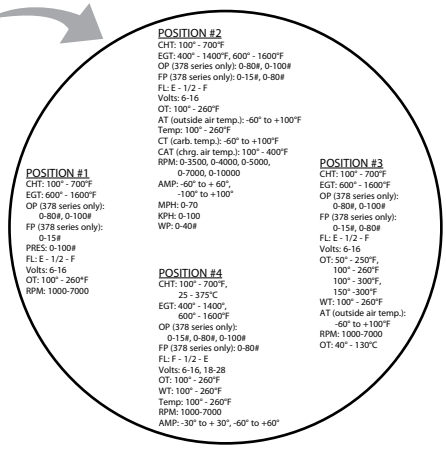
QUADCOMBOVOLTS/CHT OIL PRESS/OIL TEMP & OIL
Press. Sender Only
P/N 3AQ5MM.....$664.00

QUADCOMBOCHT/EGT OIL PRESS/OIL TEMP
P/N 3AQ4MM..$712.00

OTHER QUAD COMBOS AVAILABLE:

3AQ1-14.....CHT/Volts/EGT/Amps $349.00
3AQ4-8KV.....OP/Amps/OT/Volts.....$494.95
Quad Fuel Gauge .....WS3AQ9..... $329.00
Over 75 Quad Combos available.
Request availability of unlisted models.
*With Senders

For custom quad gauges, request quotation & exact location of each function as shown in the diagram.



WESTACH SENDERS

EGT
712-2DWK (Long Life) 1" Tip..... $47.85
712-20DWK 1/2" Tip..... $46.85
712-4D (1/4" Plpe Bayonet)..... $56.85
712-4D1 (3/8"-24 for Lycomings) $56.85
712-4D6K (.8-1MM Bayonet for Rotax)..... $64.75
712-4D2 (1/8" NPT)..... $56.95
CHT
712-5W (18 MM Thermocouple)..... $31.85
712-4W (14 MM Thermocouple)..... $31.50
712-7D (3/8-24 Bayonet) $56.75
712-9W (10MM Thermocouple)..... $31.50

Oil Temp-399S7 1/8" NPT.....P/N 10-01249.....$35.50
Oil Temp-399S9 (cont., lyc.).....P/N 10-01236.....$49.50
Fuel Level- 6"-12" Depth.....P/N 10-00797.....$139.75
Fuel Level- 6"-12" Depth-Bendable P/N 10-00798.....$139.75
Fuel Level- 12"-" Depth-Bendable P/N 10-01262.....$138.75
Temp Send- 10X1.5mm thread, 1" tip, 4' lead, with crush washer 1,750 ohms @ 100F.....P/N 10-02641.....$47.50
Temp Send 10X1.5mm thread, 5/8" tip, 4' lead, with crush washer 1,750 ohms @ 100F.....P/N 10-02642.....$48.50
Westberg SS Trans-0-100 psi, 1/8" npt P/N 10-02640..... $248.00

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FAA-APPROVED WESTACH INSTRUMENTS FOR CERTIFICATED AIRCRAFT

K33X

K29PCX

K30X

K31X

Westach Instruments now has FAA approval on all the instruments listed below. These gauges are fully approved for installation in factory aircraft, so the weight and cost savings of Westach gauges can now be enjoyed by owners of production aircraft as well as home builders. All systems are complete with instrument (internally lighted), senders and leads. The multi-position CHT and EGT systems also include sender selector switch with wiring. The EGT and CHT systems are furnished with #713-2DWK and #713-5W senders. If threaded senders are preferred, #7I3-4D and #713-7D senders can be furnished for an additional $35.00 each. The EGT gauges have an adjustable pointer. All of these gauges fit 2-1/4" panel hole.

Description	Model	Part No.	Price
EGT Gauge 700-1700°F (1 Position)	K28PX	10-01237	$156.50
EGT Gauge 700-1700°F (4 Positions)	K28PCX	10-01362	$319.00
Air Temperature Gauge	K34X	10-01363	$162.75
EGT Gauge 700-1700°F (6 Positions)	K28PDX	10-01291	$429.00
CHT Gauge 100-700°F (1 Position)	K29PX	10-01250	$154.80
CHT Gauge (K29PX) w/713-7D sender	K29PX	10-00187	$184.95
CHT Gauge 100-700°F (4 Positions)	K29PCX	10-01269	$246.95
CHT Gauge (K29PCX) w/713-7D sender	K29PCX	10-02793	$368.95
CHT Gauge 100-700°F (6 Positions)	K29PDX	10-01283	$317.00
CHT Gauge (K29PDX) w/713-7D sender	K29PDX	10-00375	$498.00
Carb Temp Gauge -50 to +50°C	K30X	10-01248	$164.95
EGT/CHT Gauge 700-1700°F/100-700°F	K31X	10-01232	$234.95
EGT/CHT Gauge (K31X) w/713-7D Probe	K31X	10-00161	$264.95
K31X Kit w/713-4D/713-7D Probes	K31X	10-00180	$273.95
Dual EGT Gauge 700-1700°F	K32X	10-01272	$255.95
Dual CHT Gauge 100-700°F	K33X	10-01297	$214.95
Oil Temp Gauge 100-260°F Complete with instrument (internally lighted), senders and leads.	K35X	10-01265	$163.75
Water Temp Gauge 100-260°F	K36X	10-01388	$148.75
Fuel Pressure Gauge 0-16 PSI	K37K	10-01663	$579.00
Oil Pressure Gauge 0-100 PSI	K38X	10-01299	$578.00
Pressure Gauge 0-80PSI	K39X	10-01664	$578.00
Spare CHT Senders (18mm)	713-5W	10-01231	$41.80
Spare CHT Senders (14mm)	713-4W	10-01271	$42.95
Spare EGT Senders	713-2DWK	10-01228	$65.75
CHT Senders (3/8-24 Bayonet)	713-7D	10-01238	$72.50
EGT Senders (1/4" pipe bayonet)	713-4D	713-4D	$74.75
399OT-TDO Air Temp. Sender	399OT-TSO	10-04532	$122.75
399W-TSO Carb. Temp. Sender	399W-TSO	10-04541	$53.75
399S9-TSO Oil Temp. Sender	399S9-TSO	10-04540	$53.75
TSO'D 2-Conductor EGT/CHT Extension Leads with sockets and sleeves at both ends.			
Westach TSO'D EGT/CHT 6ft Extension	--	10-02161	$12.70
Westach TSO'D EGT/CHT 8ft Extension	--	10-02162	$13.85

Note: Westberg 713 Series Thermocouples are for TSO'd CHT & EGT Gauges only. They have one small pin and one large gold color pin.

WESTACH EGT/CHT COMBINATION KITS

HOMEBUILDERS ENGINE ANALYZER KITS

Complete kits include CHT or EGT gauge, selector switch and probes for each cylinder of 4 or 6 cylinder engine. EGT kits furnished with long-life #712-2DWK probes.

Kit	4 Cyl.		6Cyl.	
	Part No.	Price	Part No.	Price
14MM CHT Kit	10-17114	$242.95	10-17214	$317.95
18MM CHT Kit	10-17118	$244.95	10-17218	$304.00
EGT Kit	10-17300	$305.95	10-17400	$413.95

HOMEBUILDERS ADD-ON KITS

Add-on kits for single-position system already installed. Consists of selector switch & 3 or 5 probes for CHT or EGT to provide analyzer for 4 or 6 cylinder engines. EGT kits furnished with long-life #712-2DWK probes.

Kit	4-Cyl.		6-Cyl.		Type "k" probe	
	Part No.	Price	Part No.	Price	Part No.	Price
CHT Kit	10-01064	$127.95	10-01066	$191.95	10-03892	$36.55
EGT Kit	10-01065	$168.95	10-01067	$267.95		

FAA APPROVED CHT/EGT ADD-ON KITS

These kits include FAA approved Westberg selector switches and probes which can be used to convert the FAA approved kits on this page to engine analyzers.

Kit	4 Cyl.		6Cyl.	
	Part No.	Price	Part No.	Price
14MM CHT Kit	10-01068	$165.95	10-01073	$256.95
18MM CHT Kit	10-01069	$165.95	10-01072	$255.95
EGT Kit	10-01070	$228.95	10-01074	$357.95

TSO'D WESTACH GAUGES

CHT-

Model: 2A1P-TSO
TSO C43A CHT 100-700f gauge, 2-1/4" square, w/ adjustable red pointer, Gauge only no senders, Use with 713 series type J thermocouple.
P/N 10-04531..... $115.75

EGT-

Model: 2A2P-TSO
TSO C43A EGT 700-1700f gauge, 2-1/4" square, w/ adjustable red pointer, Gauge only no senders, Use with 713 series type K thermocouple.
P/N 10-04532..... $122.75

CHT/EGT-

Model: 2DA1-TSO
TSO C43A Dual EGT/CHT 2-1/4" square, EGT: 700-1700 f / CHT: 100-700f, Gauge only no senders, Use with 713 series type J&K thermocouples.
P/N 10-04535..... $169.95

EGT/EGT-

Model: 2DA2-TSO
TSO C43A Dual EGT 2-1/4" square, EGT: 700-1700 f, Gauge only no senders, Use with 713 series type K thermocouples.
P/N 10-04536..... $166.75

OIL TEMPERATURE-

Model: 2A9-2-TSO
TSO C43A Oil temp 100-260F, 2 1/4" square, 12/24 vdc.
2A9-2 Gauge.....P/N 10-04534..... $139.80
399S9 TSO'd Sender .....P/N 10-04540 .....$53.75

CARB TEMPERATURE-

Model: 2A3-1-TSO
TSO C43A Carb temp gauge, 2-1/4" square, 12/24 vdc, 90 degree meter, -50 to+ 50, color range markings: yellow arc -10c to 10c, with 18" cable.
2A3-1 Gauge.....P/N 10-04533..... $139.80
399W-TSO Sender.....P/N 10-04541 .....$53.75

IN

ISS 2-1/4" ENGINE GAUGES

This quality line of engine gauges will provide an affordable engine monitoring package for experimental aircraft. Hundreds of these gauges are flying today in various homebuilts worldwide. Used extensively in Vans RV line of aircraft. NOTE: Our gauges do not include our company name or logo on the face.

FEATURES
- 270° Sweep Electric Gauges.
- High Quality Movements in Injection Molded Cases.
- Standard Aircraft 2-1/4" hole & mounting pattern.
- Internally Lit (12V only)
- Clear & sharp lettering with appropriate operating arcs & redlines screened directly on the face.
- Electric design uses tranducers & senders. No pressurized fuel & oil in the cabin
- Wires attach with nuts (Included) to 6-32 studs on instrument. No spade fittings.
- Cases have Brass Inserts for the #6 Mounting Screws. No Need for Instrument "Grasshopper" nuts.
- Works with Standard Stewart Warner match transducers.

CHT (0-600°F)

Gauge P/N 10-01093 ..... $49.85
Screw-in Sender 10-00808 ..... $89.95
Gasket Sender ... 10-01368 ..... $89.95
Probe P100 ..... 10-00808 ..... $89.95
Wire Ext.(XS-6) ... 10-01688 ..... $36.50

EGT (0-1600°F)

Gauge ..... P/N 10-01094 ..... $49.85
Sender ..... P/N 10-01591 ..... $89.95
Probe P110 .... P/N 10-00376 ..... $95.50
Wire Ext.(XS-6 P/N 10-01688 ..... $36.50

OIL PRESSURE 0-100 PSI GAUGE

P/N 10-01088 ..... $36.85
Sender P/N 10-01089 ..... $44.50
0-60 PSI Gauge P/N 10-02478 ..... $36.85
Sender P/N 10-01085 ..... $45.50

OIL TEMPERATURE (0-240°F)

Gauge P/N 10-01090 ..... $36.85
Sender P/N 10-01091 ..... $13.50
Adapter P/N 07-01999 ..... $11.95
12V Lamp P/N 10-01095 ..... $1.65

AMMETER (40-0-40)

Gauge ..... P/N 10-01080 ..... $36.85
Shunt ..... P/N 10-01081 ..... $16.50

MANIFOLD PRESSURE (10"-35")

Gauge ..... P/N 10-01086 ..... $36.95
Sender ..... P/N 10-01087 ..... $55.75

FUEL PRESSURE CARB (0-16 ACI)

Gauge ..... P/N 10-01082 ..... $38.50
Sender ..... P/N 10-01083 ..... $35.90

FUEL PRESSURE INJECT (0-50 PSI)

Gauge ..... P/N 10-01084 ..... $36.85
Shunt ..... P/N 10-01085 ..... $45.50

TACHOMETER (0-3500 RPM)

Tach ..... P/N 10-01076 ..... $45.75
Tach/Gen. Sender P/N 10-01077 ..... $83.75
Tach./Sender Tang. P/N 10-03148 ..... $12.75

VOLTMETER (8-16V)

Gauge ..... P/N 10-01092 ..... $36.85

FUEL LEVEL

Gauge ..... P/N 10-01108 ..... $36.85

270° Sweep Electrical Gauges

REPLACEMENT LAMPS

Replacement 12V Lamp for Gauges
P/N 10-01095 ..... $1.65

FUEL LEVEL SENDERS

ISS Fuel Sender LH 6-12 Tank ..... P/N 10-01099 ..... $32.50
ISS Fuel Sender RH 6-12 Tank ..... P/N 10-01101 ..... $33.50
ISS Fuel Sender LH 10-15 Tank ..... P/N 10-01102 ..... $34.50
ISS Fuel Sender RH 10-15 Tank ..... P/N 10-01103 ..... $39.75
ISS Fuel Sender RH 10-15 Tank ..... P/N 10-01103 ..... $39.75
ISS Fuel Sender LH 15-.5-24 ..... P/N 10-01104 ..... $41.95
ISS Fuel Sender RH 15-.5-24 ..... P/N 10-01104 ..... $41.95
ISS Fuel Sender RH 27-36" Tank ..... P/N 10-01107 ..... $57.25
ISS Fuel Sender Gasket ..... P/N 10-01097 ..... $1.45
SS Wire Float Arm ..... P/N 10-01098 ..... $6.50

IN

AIRCRAFT SPRUCE WEST
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PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

MITCHELL AIRCRAFT INSTRUMENTS

2-1/4" ELECTRIC GAUGES

Mitchell Aircraft Instruments is a high quality, economical line of gauges which is ideal for the homebuilt aircraft market. These electric instruments are lighted, allow easy installation, and feature a 2 year factory warranty. Order gauges and senders separately as shown. 12V operation unless other wise noted. Gauges fit 2-1/4 panel hole. For 24 volt operation, order P/N PE-111-4074 Resistors ($3.50 each) for each instrument.

OIL TEMPERATURE

100-250° F Gauge ..... P/N 10-25000 ..... $53.50
100-250° F Sender (Rotax) ..... P/N 10-25005 ..... $19.95
100-250° F Sender (LYC) ..... P/N 10-25175 ..... $33.50
120-300° F Gauge ..... P/N 10-25010 ..... $52.75
120-300° F Sender (Rotax) ..... P/N 10-25015 ..... $19.95
120-300° F Sender (LYC) ..... P/N 10-25180 ..... $39.95

Rotax Senders are 1/8-18 NPT, Lycoming Senders are 5/8-18 VNF.

OIL PRESSURE

0-80 PSI Gauge ..... P/N 10-25030 ..... $49.50
0-80 PSI Sender ..... P/N 10-25035 ..... $37.50
0-100 PSI Gauge ..... P/N 10-25040 ..... $49.50
0-100 PSI Sender ..... P/N 10-25045 ..... $37.85
0-145 PSI Gauge use with Rotax sender.
P/N 10-03928 ..... $76.50
0-150 PSI Gauge ..... P/N 10-25050 ..... $49.50
0-150 PSI Sender ..... P/N 10-25055 ..... $37.85

FUEL PRESSURE

0-30 PSI Gauge ..... P/N 10-25060 ..... $59.95
0-30 PSI Sender ..... P/N 10-25065 ..... $37.50
0-15 PSI Gauge ..... P/N 10-25058 ..... $59.95
0-15 PSI Sender ..... P/N 10-25065 ..... $37.50

EXHAUST GAS TEMPERATURE

0-1600°F EGT Gauge ..... P/N 10-02746 ..... $106.95

KIT - Includes Sender, Weld-on adapter and 6 Ft. Lead with/ connector. 0-1600 EGT kit
P/N 10-25090 ..... $146.75

CYLINDER HEAD TEMPERATURE

100-600° F Gauge ..... P/N 10-25070 ..... $69.95
120-300F Gauge ..... P/N 10-02717 ..... $59.75
18MM Sender (Cont, Lyc) ..... P/N 10-25075 ..... $25.50
14MM Sender (VW, Rotax) ..... P/N 10-25080 ..... $13.95
10 Ft. CHT Lead w/connector
P/N 10-25185 ..... $9.50

MITCHELL 2-1/4" MECHANICAL GAUGES

OIL TEMPERATURE

110 - 270 F. 6 foot capillary supplied
P/N 10-02714 ..... $53.50

OIL PRESSURE

0-100 PSI ..... P/N 10-02706 ..... $53.50
0-150 PSI ..... P/N 10-02712 ..... $53.50

FUEL PRESSURE

0-15 PSI ..... P/N 10-02702 ..... $53.50

MITCHELL D1-112-5240 ROTAX 912 TACHOMETER

Mitchell 2-1/4 Inch Mechanical Recording. FAA-TSO Approved. D1-112-5240 Special-Rotax 912
P/N 10-02744 ..... $226.00

AMMETER

60-0-60 Ammeter
P/N 10-25115 ..... $47.95
P/N 10-01212 (30-0-30) $47.95

VOLTMETER

P/N 10-25105 (8-16V) $46.70
P/N 10-02747 (12-31V) $53.50
No Sender required.

OUTSIDE AIR TEMPERATURE

2-1/4" -10°F to +120°F
P/N 10-02715 ..... $122.95

OUTSIDE AIR TEMPERATURE

2-1/4" Electric -10°F to +120°F
P/N 10-03137 ..... $149.75
Sender ..... P/N 10-02170 ..... $18.75

ROTAX OIL PRESSURE PRESSURE

2-1/4" Electric 24V 0-150 PSI
P/N 10-03928 ..... $76.50
For use with Rotax Senders.

FUEL LEVEL

P/N 10-25130(10-180 OHM) $66.90
P/N 10-02719(0-90 OHM) $66.90
P/N 10-02721(0-30 OHM) $73.50
P/N 10-02722(240-33 OHM) $53.50
10-180 ohm Sender
P/N 10-25135 ..... $49.75
0-90 ohm Sender
P/N 10-02172 ..... $53.50
240-33 ohm Sender
P/N 10-02173 ..... $53.50

TURBO

Mechanical Turbocharger Gauge. Gauge is mechanical. No sender required. P/N 10-25140 ..... $53.50

CYLINDER HEAD TEMP GAUGE

For Rotax 120-300°
P/N 10-02717 ..... $59.75
Sender: Probe Supplied w/ Rotax Engine.

LIGHTED QUARTZ ELECTRIC CLOCK

Features black dial with matte white numbers and hands. Length: Mounts in standard 2-1/4" instrument hole. Power: 12v Note: Requires adapter #PE-211-2000 to function in 24 volts. FAA approved.
P/N 10-01214 ..... $89.50
28V Adapter Kit
P/N 10-02827 ..... $12.75

GAUGE WIRING KIT

Fits all 2-1/4" Mitchell Gauges
P/N 10-02724 ..... $6.00

IN

MITCHELL MINIATURE MODULAR GAUGES

This line of miniature engine gauges from Mitchell is ideal for a wide variety of general aviation applications. They measure nearly 1.5" square and are stackable. The modular design allows them to be plugged from the front of the panel. The units are internally lighted. Complete standard panels are also available as shown in the steps below.

Step 1 - Select your gauge(s) from the list below

Choose 14 volt or 24 volt

Note range marking for gauge(s) (free if information given at time of instrument cluster order)

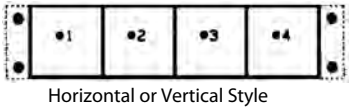
Step 2 - Select your sendor(s) for gauge(s) from the list below

Any sendor with a * can also use a Rotax Engine Sender

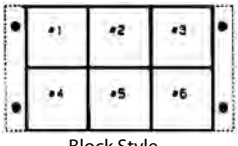
Gauge Part Number		Gauge Description	Price	Sender Part Number		Sender Description	Price
Spruce #	Mitchell #			Spruce #	Mitchell #		
Pressure Gauges				Pressure Senders			
10-03621	D1-211-6060	Fuel Pressure 80 PSI	$99.50	10-25035	PS-211-9002	Pressure Sender 80 PSI	
10-10150	D1-211-6061	Fuel Pressure 15 PSI (FAA/PMA)	$98.95	10-25065	PS-211-9000	Pressure Sender 15/30 PSI (FAA/PMA)	$37.50
10-10152	D1-211-6064	Fuel Pressure 30 PSI	$100.00	10-25065	PS-211-9000	Pressure Sender 15/30 PSI	$37.50
10-04094	D1-211-6065	0 – 2 bar Fuel	$125.95	10-25065	PS-211-9000	Pressure Sender 15/30 PSI	$37.50
10-04139	D1-211-6097	Oil Pressure 150 PSI 10Bar	$105.95	Rotax engine Sender			
10-02725	D1-211-6092	Oil Pressure 150 PSI (FAA/PMA)	$99.85	10-25055	PS-211-9040	Pressure Sender 150 PSI (FAA/PMA)	$37.85
10-10166	D1-211-6090	Oil Pressure 100 PSI (FAA/PMA)	$99.85	10-25045	PS-211-9039	Pressure Sender 100 PSI (FAA/PMA)	$37.85
10-02726	D1-211-6093	Oil Pressure 80 PSI	$100.00	10-25035	PS-211-9002	Pressure Sender 80 PSI	$37.50
10-10168	D1-211-60…91	0 – 9 bar Oil	$100.00	10-25055	PS-211-9040	Pressure Sender 150 PSI	$37.85
10-04095	D1-211-6094	0 – 7 bar Oil	$125.95	10-25045	PS-211-9039	Pressure Sender 100 PSI	$37.85
10-04096	D1-211-6095	0 – 5 bar Oil	$125.95	10-25035	PS-211-9002	Pressure Sender 80 PSI	$37.50
10-02723	D1-211-6089	Liquid Pressure 80 PSI	$98.75	10-25035	PS-211-9002	Pressure Sender 80 PSI	$37.50
Temperature Gauges				Temperature Sendors			
10-02279	D1-211-6068	Oil Temp 100F-250F (FAA/PMA)	$93.50	10-25005	PS-211-8044	Temp Sender 1/8 250F (FAA/PMA)	$19.95
				10-25175	PS-211-8045	Temp Sender 5/8 250F (FAA/PMA)	$33.50
10-10154	D1-211-6066	Oil Temp 120F-300F (FAA/PMA)	$93.50	10-25015*	PS-211-8090	Temp Sender 1/8 300F (FAA/PMA)*	$19.95
				10-25180*	PS-211-8112	Temp Sender 5/8 300F (FAA/PMA)*	$39.95
10-10155	D1-211-6067	Oil Temp 40C-120C	$93.50	10-25005	PS-211-8044	Temp Sender 1/8 250F	$19.95
				10-25175	PS-211-8045	Temp Sender 5/8 250F	$33.50
10-02728	D1-211-6069	Oil Temp 50C-150C	$93.50	10-25015*	PS-211-8090	Temp Sender 1/8 300F*	$19.95
				10-25180*	PS-211-8112	Temp Sender 5/8 300F*	$39.95
10-10156	D1-211-6088	Liquid Temp 100F-250F	$93.50	10-25005	PS-211-8044	Temp Sender 1/8 250F	$19.95
				10-25175	PS-211-8045	Temp Sender 5/8 250F	$33.50
10-02746	D1-211-6101	EGT 0F-1600F	$106.95	10-02177	PS-211-8163	EGT Sender clamp - type K	$39.95
				10-04140	PS-211-8165	EGT Sender Probe - type K	$46.95
10-10170	D1-211-6102	CHT 100F-600F	$106.95	10-25080	PS-211-8152	CHT Sender 14mm - type J	$13.95
				10-02171	PS-211-8154	CHT Sender 12mm - type J	$14.00
				10-25075	PS-211-8168	CHT Sender 18mm - type J	$25.50
				10-25076	PS-211-8156	CHT Sender probe	$69.50
				10-25080	PS-211-8152	CHT Sender 14mm - type J	$13.95
				10-02171	PS-211-8154	CHT Sender 12mm - type J	$14.00
				10-25075	PS-211-8168	CHT Sender 18mm - type J	$25.50
				10-25076	PS-211-8156	CHT Sender probe	$69.50
10-02745	D1-211-6109	CHT Rotax 120F-300F	$86.75	Rotax engine Sender			
Voltmeter Gauges							
10-10164	D1-211-6086	Voltmeter 8-16 volts (FAA/PMA	$86.75				
10-10165	D1-211-6087	Voltmeter 12-31 volts	$86.75				
Ammeters Gauges				External Shunts			
10-10174	D1-211-6104	ammeter 45-0-45 amp	$106.95	10-10184	PS-211-9100	45 amp shunt	$42.75
10-10176	D1-211-6106	ammeter 75-0-75 amp (FAA/PMA)	$106.95	10-10185	PS-211-9101	75 amp shunt (FAA/PMA)	$42.75
Fuel Quantity Gauges				Sender Resistance (E- F)			
10-02730	D1-211-6071	right Fuel 240-30 omh	$86.75	240 - 33 Ohms			
10-03610	D1-211-6072	left Fuel 240-33 ohm	$86.75	240 - 33 Ohms			
10-03613	D1-211-6073	Fuel gauge 240-33 ohm	$86.75	240 - 33 Ohms			
10-10158	D1-211-6074	right Fuel 10-180 omh (FAA/PMA)	$86.75	10-25135	PS-211-8038	Fuel Sender 10-180 ohm (FAA/PMA)	$49.75
10-10160	D1-211-6075	left Fuel 10-180 ohm (FAA/PMA)	$86.75	10-25135	PS-211-8038	Fuel Sender 10-180 ohm (FAA/PMA)	$49.75
10-10162	D1-211-6076	Fuel gauge 10-180 ohm (FAA/PMA)	$86.75	10-25135	PS-211-8038	Fuel Sender 10-180 ohm (FAA/PMA)	$49.75
10-03614	D1-211-6077	right Fuel 0-30 ohm	$106.95	0 - 30 Ohms			
10-03615	D1-211-6078	left Fuel 0-30 ohm	$106.95	0 - 30 Ohms			
10-03616	D1-211-6079	Fuel gauge 0-30 ohm	$106.95	0 - 30 Ohms			
10-03617	D1-211-6080	right Fuel 0-92 ohm	$86.75	0 - 92 Ohms			
10-03618	D1-211-6081	left Fuel 0-92 ohm	$86.75	0 - 92 Ohms			
10-03620	D1-211-6082	Fuel gauge 0-92 ohm	$86.75	0 - 92 Ohms			
Blank							
10-02740	D1-211-6010	blank face gauge (FAA/PMA)	$46.75				

Step 3 - Select your frame for your gauge(s) from the list below

Select what postion your gauge(s) will go into. Postions are counted left to right (block style), top to bottom (vertical) starting at #1



Horizontal or Vertical Style



Block Style

Spruce #	Mitchell #	Gauge Capacity	Configuration	Price
10-02964	PM-211-9811	1 Gauge	1 Gauge	$53.50
10-04084	PM-211-6826	2 Gauges	1 Wide 2 High	$79.95
10-02739	PM-211-6808	2 Gauges	2 Wide 1 High	$53.50
10-04083	PM-211-6824	3 Gauges	1 Wide 3 High	$84.95
10-04079	PM-211-6809	3 Gauges	3 Wide 1 High	$79.95
10-04020	PM-211-6825	4 Gauges	2 Wide 2 High	$89.95
10-04082	PM-211-6823	4 Gauges	1 Wide 4 High	$94.75
10-01710	PM-211-6805	4 Gauges	4 Wide 1 High	$66.75
10-04080	PM-211-6810	5 Gauges	1 Wide 5 High	$105.95
10-01711	PM-211-6806	5 Gauges	5 Wide 1 High	$73.50
10-02738	PM-211-6807	6 Gauges	1 Wide 6 High	$80.00
10-01712	PM-211-6804	6 Gauges	6 Wide 1 High	$80.00
10-01708	PM-211-6803	6 Gauges	3 Wide 2 High	$80.00

Spruce #	Mitchell #	Gauge Capacity	Configuration	Price
10-04097	PM-211-6802	6 Gauges	2 Wide 3 High	$119.95
10-04081	PM-211-6822	7 Gauges	1 Wide 7 high	$118.95
10-04091	PM-211-6833	7 Gauges	7 Wide 1 High	$139.95
10-04090	PM-211-6832	8 Gauges	8 Wide 1 High	$139.95
10-01709	PM-211-6801	8 Gauges	1 Wide 8 High	$93.50
10-03915	PM-211-6800	8 Gauges	2 Wide 4 High	$99.95
10-04089	PM-211-6831	9 Gauges	9 Wide 1 High	$148.95
10-04085	PM-211-6827	9 Gauges	3 Wide 3 High	$149.95
10-04087	PM-211-6829	10 Gauges	2 Wide 5 High	$159.95
10-04086	PM-211-6828	10 Gauges	5 Wide 2 High	$159.95
10-04088	PM-211-6830	12 Gauges	2 Wide 6 High	$185.95
10-04092	PM-211-6835	15 Gauges	5 Wide 3 High	$199.95

FALCON ENGINE GAUGES

FALCON GAUGE TACHOMETERS

Falcon Gauge Tachometers feature both clockwise and standard pointer type configurations. Falcon Gauge Universal Tachometers can be used for both point and Ducati ignitions.

Size"	Description	Model	Range	Part No.	Price
3-1/8	Clockwise Tach.	TH-007CC	"0-3500 RPM, 500-2750 RPM Color Markings"	10-02273	$126.85
2	Standard Pointer Type Tach.	TR-001D	0-8000 RPM CDI	10-00831	$67.75
2	Standard Pointer Type Tach."	TR-003	"0-8000 RPM Universal Point and CDI"	10-01615	$73.75
2-1/4	Standard Pointer Type Tach.	T2-001U	0-8000 RPM Universal Point and CDI	10-00816*	$79.75
2-1/4	Standard Pointer Type Tach.	T2-004	"0-8000 RPM For MZ 202 Engine"	10-04039	$72.85
3-1/8	Standard Pointer Type Tach.	T3-001U	"0-8000 RPM Universal Point and CDI"	10-00817*	$79.95

*Works with Rotax-point & CDI Ignition, but not 912/914 engines.

FALCON GAUGE CHT GAUGES

Falcon Gauge Cylinder Temperature Gauges work with most 2 cycle 2 cylinder engines.

Size"	Description	Model	Range	Part No.	Price
3 1/8	FALCON GAUGE CHT / CHT DUAL	C3-002	100-700ºF / 100-700ºF	10-02280	$99.85
3 1/8		C3-002C	0-340ºC / 0-340ºC	10-02281	$99.85
2 1/4		C2-002	100-700ºF / 100-700ºF	11-03960	$82.75
2 1/4		C2-002C	0-340ºC / 0-340ºC	10-01421	$79.95
2 Round		CR-002	100-700ºF / 100-700ºF	10-00486	$74.75
2 Round		CR-002C	0-340ºC / 0-340ºC	10-01416	$74.75
3 1/8	FALCON GAUGE CHT SINGLE	C3-001	100-700ºF	10-02283	$67.75
3 1/8		C3-001C	0-340ºC	10-02284	$67.75
2 1/4		C2-001	100-700ºF	11-03958	$48.85
2 1/4		C2-001C	0-340ºC	11-03959	$49.75
2 Round		CR-001	100-700ºF	10-01412	$43.75
2 Round		CR-001C	0-340ºC	10-01413	$43.75
10 x 1.5 mm	FALCON CHT SENDER	CP-001	Screw-in type, 4 feet metal shield wire	10-04051	$36.75
10mm		CP-010	10mm dia. ring, 4 ft metal shield wire	10-01438	$16.90
12mm		CP-012	12mm dia. ring, 4 ft metal shield wire	10-02286	$17.50
14mm		CP-014	14mm dia. ring, 4 ft metal shield wire	10-02287	$17.50
18mm		CP-018	18mm dia. ring, 4 ft metal shield wire	10-02288	$18.95

FALCON GAUGE EGT GAUGES

Size"	Description	Range	Part No.	Price
3 1/8	EGT / EGT DUAL"	700-1700ºF / 700-1700ºF	10-02290	$98.75
3 1/8		200-900ºC / 200-900ºC	10-02291	$98.75
2 1/4		700-1700ºF / 700-1700ºF	10-00487	$82.75
2 1/4		200-900ºC / 200-900ºC	10-02292	$82.75
2		700-1700ºF / 700-1700ºF	10-01453	$74.85
2		200-900ºC / 200-900ºC	10-01454	$74.75
3 1/8	EGT Single"	700-1700ºF	10-02289	$67.75
3 1/8		200-900ºC	10-02293	$67.75
2 1/4		700-1700ºF	10-01457	$48.75
2 1/4		200-900ºC	10-01450	$42.95
2		700-1700ºF	10-01449	$43.50
2		200-900ºC	10-01458	$49.50
8X1.0mm	FALCON EGT SENDER"	"8X1.0mm Screw-in Style 4 Feet Metal Shield Wire"	10-00489	$34.90
Clamp		"1"" - 1-3/4"" Clamp Style 4 Feet Metal Shield Wire"	10-02294	$32.50
Clamp		"1-1/4"" - 2"" Clamp Style 4 Feet Metal Shield Wire"	10-00488	$31.65

FALCON GAUGE COMBINATION GAUGES

Falcon Gauge Temperature Gauges work with most 2 cycle 2 cylinder engines.

Size"	Description	Range	Part No.	Price
3 1/8	CHT / EGT DUAL"	100-700ºF / 700-1700ºF Square	10-02794	$97.50
3 1/8		0-340ºC/ 400-900ºC	10-02296	$99.85
3 1/8	EGT / TACH DUAL"	700-1700ºF / 0-8000 RPM	10-02297	$128.85
3 1/8	CHT / TACH DUAL	0-340ºC / 0-8000 RPM	10-02314	$127.75
2 1/4	CHT / EGT DUAL	100-700ºF / 700-1700ºF Square	10-01404	$79.90
2 1/4		0-340ºC/ 400-900ºC Square	10-01405	$79.75
2 1/4	CHT / TACH DUAL	100-700ºF / 0-8000 RPM	10-02317	$110.95
2 1/4		0-340ºC / 0-8000 RPM	10-02318	$110.75
2	CHT / EGT DUAL	100-700ºF / 700-1700ºF	10-01400	$78.85
2		0-340ºC/ 400-900ºC	10-01401	$74.75

FALCON WATER TEMPERATURE / PRESSURE & OIL TEMPERATURE/ PRESSURE GAUGES

Size"	Description	Model	Range	Part No.	Price
2-1/4	Water Temp.	WT-001	100-260ºF / 40-120ºC	10-02320	$47.75
2 Rnd.		WT-001R	100-260ºF / 40-120ºC	10-02321	$66.75
1/8 NPT	Water Temp.	WP-001	Water Temp. Sender	10-02322	$18.50
2 Rnd.	Oil Temp.	OT-001R	120-300ºF / 50-150ºC	10-03404	$64.75
2-1/4		OT-001	120-300ºF / 50-150ºC	10-03403	$69.75
2 Rnd.	Oil Pressure	OP-060-001R	60 PSI	10-04063	$67.75
2-1/4		OP-080-001	80 PSI	10-04060	$67.75
2-1/4		OP-100-001	100 PSI	10-04058	$67.75
2 Rnd.	Oil Press / Oil Temp. Dual	OPT080-001R	120-300ºF / 80 PSI	10-04052	$118.95
2-1/4		OPT080-002	120-300ºF / 80 PSI	10-04054	$115.75
2 Rnd.		OPT100-001R	120-300ºF / 100 PSI	10-04053	$118.99
2-1/4		OPT100-002	120-300ºF / 100 PSI	10-04055	$122.95
"1/8"" NPT"	"1/8"" NPT Oil Temp.	OTS-001	"1/8"" NPT Oil Temp. Sender"	10-03406	$17.85
10X 1.5mm	Oil Temp. Sender	OTS-002	"Oil Temp. Sender For Rotax 914, 912"	10-03407	$19.50

FALCON GAUGE FUEL QUANTITY INDICATOR

The Falcon Gauge Fuel quantity indicator's resistance Empty R=240 Ohms Full R=40 Ohms. The Falcon Gauge Fuel quantity sender is electronic capacity type. 12" can be cut down to 9.5" 24" can be cut down to 12.5"

Size"	Description	Model	Part No.	Price
2-1/4	Single Gauge, 5V Input	F2-001-5	10-02264	$52.75
2-1/4	Dual Gauge, 5V Input	F2-002-5	10-02265	$79.75
2 Round	Single Gauge, 5V Input	FR-001-5	10-03873	$52.75
2 Round	Dual Gauge, 5V Input	FR-002-5	10-03874	$72.75
12"	FP-012-5 Bendable Sender, 5V Output	FP-012-5	10-03419	$79.75
24"	FP-024-5 Bendable Sender, 5V Output	FP-024-5	10-03421	$76.75

FALCON ENGINE GAUGE EXTENSION CABLES

Falcon Gauge extension wire is used to lengthen the existing wire that comes with engine gauges. It is temperature compensated wire. Available in lengths of 4-10 ft, 2 or 4 conductors. Pins must be crimped onto wire.

Size	Model No.	Description	Part No.	Buy
4'	Wire-042	2 Conductor, 4 Feet	10-02339	$5.75
4'	Wire-044	4 Conductor, 4 Feet	10-02340	$9.75
6'	Wire-062	2 Conductor, 6 Feet	10-02341	$8.90
6'	Wire-064	4 Conductor, 6 Feet	10-02342	$11.65
8'	Wire-082	2 Conductor, 8 Feet	10-02344	$11.85
8'	Wire-084	4 Conductor, 8 Feet	10-02345	$13.85
10'	Wire-102	2 Conductor, 10 Feet	10-02346	$14.85
10'	Wire-104	4 Conductor, 10 Feet	10-02347	$17.85

IN

BELITE AIR SPEED INDICATORS

2.25" Bezel

Air Speed Indicator is calibrated for slow flight and designed to provide much more precise measurement of "low and slow" airspeeds. Uses a solid state pitot pressure sensor device, which converts into a visual representation of speed.

28-82 MPH With 1.75" Square Bezel P/N 10-04376 ..... $129.95
28-82 MPH With 2.25" Round Bezel ..... P/N 10-04378 ..... $130.75
35-135 KIAS With 2.25" Round Bezel ..... P/N 10-04622 ..... $128.95
Straight Pitot Tube, black powdercoat ..... P/N 10-04382 ..... $9.95
Bent Pitot Tube, black powdercoat ..... P/N 10-04383 ..... $14.95

BELITE DIGITAL ALTIMETER WITH LCD DISPLAY

Ditigal Altimeter brings new capabilities into a very small footprint. The unit is designed to show altitude on a large, easy to read digital LCD display, and has many other functions such as density altitude VFR cruising capabilities, which add to its versatility.

Portable Mount ..... P/N 10-05299 ..... $234.95

BELITE ABOVE GROUND LEVEL ALTIMETERS

1.75" Bezel

Above Ground Altimeter measures from field elevation of the airport (rather than mean sea level). Its calibrated in 100-foot increments from 0 to 1200 feet.

With 1.75" Square Bezel ..... P/N 10-04360 ..... $199.99
With 2.25" Round Bezel ..... P/N 10-04361 ..... $199.99
3"x2"x1" with 9V battery and power switch - Portable P/N 10-04363 ..... $119.95

BELITE VERTICAL SPEED INDICATORS

3"x2"x1" portable

Rates up to 600 FPM, depending on model. Provides vertical speed information using a dimmable LED display that can be adjusted for viewing in bright daylight or reduced lighting conditions.

With 1.75" Square Bezel ..... P/N 10-04350 ..... $129.95
With 2.25" Round Bezel ..... P/N 10-04351 ..... $131.75
3"x2"x1" with 9V battery and power switch - Portable P/N 10-04352 ..... $148.50

BELITE DUAL AIR SPEED INDICATOR / VERTICAL SPEED INDICATOR

2.25" Bezel

Air Speed Indicator is calibrated for slow flight and designed to provide much more precise measurement of "low and slow" airspeeds Vertical Speed Indicator displays rates of up to 600 FPM. Provides vertical speed information using a dimmable LED display that can be adjusted for viewing in bright daylight or reduced lighting conditions.

28-82 mph ASI/VSI With 1.75" Square Bezel ..... P/N 10-04681 ..... $199.95
28-82 mph ASI/VSI With 2.25" Round Bezel ..... P/N 10-04682 ..... $194.50
35-135 KIAS ASI/VSI With 2.25" Round Bezel ..... P/N 10-04683 ..... $194.50

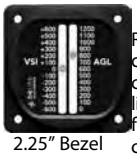
BELITE DUAL ASI / AGL

1.75" Bezel

Air Speed Indicator is calibrated for slow flight and designed to provide much more precise measurement of "low and slow" airspeeds. 28-82MPH in 1.75" square and 2.25" round. Above Ground Altimeter measures from field elevation of the airport (rather than mean sea level). Calibrated in 100-foot increments from 0 to 1200 feet.

With 1.75" Square Bezel ..... P/N 10-04749 ..... $188.50
With 2.25" Round Bezel ..... P/N 10-04750 ..... $194.50

BELITE DUAL VSI / AGL



2.25" Bezel

Rates up to 600 FPM, depending on model. Provides vertical speed information using a dimmable LED display that can be adjusted for viewing in bright daylight or reduced lighting conditions. Above Ground Altimeter measures from field elevation of the airport (rather than mean sea level). Its calibrated in 100-foot increments from 0 to 1200 feet.

With 1.75" Square Bezel ..... P/N 10-04751 ..... $188.50
With 2.25" Round Bezel ..... P/N 10-04752 ..... $187.95

BELITE AOA 2-1/4 INCH DISPLAY

Immediate cockpit display of the aircraft's angle of attack. The unit includes a switch harness which allows the user to select the level cruise point (base of green arc) and a high angle of attack point (top of yellow arc). The LED display module for this system is only available in the standard 2.25" round case. P/N 10-05462 ..... $559.95

BELITE INCLINOMETERS

2.25" Bezel

Provides immediate slip and skid information, simulating and improving upon the classic ball inclinometer. In enclosure with 9V battery and power switch.

With 1.75" Square Bezel ..... P/N 10-04366 ..... $48.70
With 2.25" Round Bezel ..... P/N 10-04368 ..... $64.95
3"x2"x1" with 9V battery and power switch - portable P/N 10-04369 ..... $63.75

BELITE TURN RATE INDICATORS

3"x2"x1" portable

State-of-the-art, low cost, true solid state gyro based turn indicator. Calibrated to exactly match existing turn rate coordinators, (at 3 degrees per second for a 2-minute turn), it is cleverly configured so that the LEDs show when this rate is not being met by the pilot. More precise than traditional mechanical gyro instrument.

With 1.75" Square Bezel ..... P/N 10-04385 ..... $119.95
With 2.25" Round Bezel ..... P/N 10-04386 ..... $119.95
3"x2"x1" with 9V battery and power switch - portable P/N 10-04388 ..... $104.99

BELITE TURN COORDINATOR

The Belite Turn Coordinator shows a digital gyro based Turn Rate Indication and solid state Bubble Inclinometer simultaneously, producing a standard turn coordinator display. The turn rate indicator includes new technology which automatically calibrates itself every time it is turned on, so it does not have to be re-centered. In addition, power consumption has been reduced. 2.25" Bezel.

Standard ..... P/N 10-04795 ..... $185.75
With Self Enclosure (portable) ..... P/N 10-05169 ..... $214.00

BELITE POSITIVE / NEGATIVE G METER

1.75" Bezel

This G Meter shows how strong the bumps are! It depicts G forces up to +/-6Gs. The precision, solid state accelerometer inside exceeds the capabilities of older mechanical units.

With 1.75" Square Bezel ..... P/N 10-04735 ..... $84.95
With 2.25" Round Bezel ..... P/N 10-04736 ..... $99.95
3"x2"x1" with 9V battery and power switch - portable. P/N 10-04737 ..... $119.95

BELITE FUEL GAUGES

1.75" Bezel

Pilots dream of having a fuel gauge that actually works. Here's one that does! Uses LEDs to provide a range of 0% to 100% in calibrated steps.

Single With 1.75" Square Bezel P/N 10-04390 ..... $74.50
Single With 2.25" Round Bezel ..... P/N 10-04392 ..... $74.95
Dual With 1.75" Square Bezel ..... P/N 10-04738 ..... $94.50
Dual With 2.25" Round Bezel ..... P/N 10-04739 ..... $99.95
2.25" Single, Digital Universal LED Fuel Gauge ..... P/N 10-05312 ..... $99.95
2.25" Dual, Digital Universal LED Fuel Gauge ..... P/N 10-05313 ..... $125.80

BELITE EGT / CHT GAUGE

2.25" Bezel

A quick visual indication of engine temperatures with an LED column for each parameter. LEDs use color to alert pilot when things start getting hot; the display LEDs switch from bright yellow to ultra bright amber at high temperatures.

EGT / CHT With 1.75" Square Bezel ..... P/N 10-04740 ..... $168.95
EGT / CHT With 2.25" Round Bezel ..... P/N 10-04743 ..... $179.95
Dual CHT With 1.75" Square Bezel ..... P/N 10-04742 ..... $168.95
Dual CHT With 2.25" Round Bezel ..... P/N 10-04741 ..... $168.95
Dual EGT With 1.75" Square Bezel ..... P/N 10-04744 ..... $168.95
Dual EGT With 2.25" Round Bezel ..... P/N 10-04745 ..... $179.95

SMALL VOLT MINIMETER GAUGE

System voltage monitor, 8 to 19.99 volts. No backlight. Power source: from the sys micro amps nominal. Recommended for continuous power monitoring.

P/N 10-04395 ..... $69.95

BELITE INSTRUMENT PANELS (9 INSTRUMENTS)

Full Panel: Includes: Battery Condition Voltmeter, CHT/EGT Gauge, Fuel Gauge, Above Ground Altimeter, Turn Rate Indicator, Inclinometer, G Meter and Air Speed Indicator.

Half Panel: Includes four instruments plus the Volt MiniMeter. This is a metal panel with hardware and wiring, but the builder must make the harness and assemble.

Empty Panel: Choose and install your own instruments. Holds nine instruments. Full metal panel.

Empty Full Panel for 1.75" square gauges ..... P/N 10-04666 ..... $99.95
Empty Full Panel for 2.25" round gauges ..... P/N 10-04747 ..... $94.50
Empty Half Panel for 1.75" square gauges ..... P/N 10-04748 ..... $94.50

IN

MICROFLIGHT GAUGES

MICRO-1000 ENGINE GAUGES

Senders and probes are not included umless specifically noted. See lower half of the page for senders, probes, and other accessories. 2" gauges are round. 2 1/4" gauges are square.

OIL PRESSURE ELECTRIC

MICRO-1000 oil pressure electric includes 1/8 NPT SDR.

2 1/4" OP031 ..... P/N 10-01574 ..... $94.50
2" OP030 ..... P/N 10-01572 ..... $83.75

OIL TEMPERATURE ELECTRIC

Includes 1/8 NPT Sender

2 1/4" OT031 ..... P/N 10-01588 ..... $92.75
2" OT030 ..... P/N 10-01586 ..... $79.50

HOUR METER

AC or DC Powered

2 1/4" HO031 ..... P/N 10-01507 ..... $49.90
2" HO030 ..... P/N 10-01506 ..... $37.50

DC VOLTMETER

2 1/4" VM031 ..... P/N 10-01641 ..... $58.50
2" VM030 ..... P/N 10-01639 ..... $45.50

WATER TEMPERATURE

Includes 1/8 NPT Sender. All electrical gauges have air core movements.

2 1/4" WT031 ..... P/N 10-01652 ..... $64.50
2" WT030 ..... P/N 10-01650 ..... $54.85

AMMETER ±30 AMPS

2 1/4" AG031 ..... P/N 10-01319 ..... $63.75
2" AG030 ..... P/N 10-01317 ..... $39.85

MICROFLIGHT DUAL TACH/EGT

2" Round Gauge Tachometer - Universal for single or dual ignition. EGT range: 700-1700°F EGT probe (clamp type) Sender not included

P/N 10-01628 ..... $103.75

MICROFLIGHT SENDERS & ACCESSORIES

100# PRESSURE SENDER

HAS A 1/8" NPTF fitting.

OP030.2 ..... P/N 10-01573 ..... $24.95

TUBING KIT

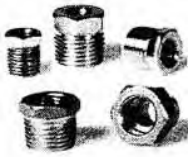
Nylon tubing with brass fittings.

OP032.1 ..... P/N 10-01575 ..... $9.95
OP032.2 ..... P/N 10-01576 ..... $14.95

TEMPERATURE SENDERS

Single-station senders for water and oil temperature gauges.

WT030.2 ..... P/N 10-01384 ..... $15.75
OT030.2 ..... P/N 10-01587 ..... $9.75



SENDER ADAPTERS

Electric sender adapter. 3/8" NPT

ADP04 ..... P/N 10-01311 ..... $8.80

METRIC ADAPTER

ADP07 ..... P/N 10-01314 ..... $5.50
ADP08 ..... P/N 10-01315 ..... $5.50

FLOAT-TYPE FUEL PROBES

6-23" Probe. Adjustable, 6-23"; 240-33 ohms standard: 5-hole ASME pattern. Requires mounting kit.

FGP031 ..... P/N 10-01489 ..... $42.50

UNIVERSAL PROBE MOUNT

Works well with plastic and other tank. Includes threaded attachment ring, gasket, and hardware. Standard 5-hole SAE pattern.

FMK01 ..... P/N 10-01501 ..... $9.50

COLOR TINT LAMPS

Color tint lamp boots. Set of Boots. Changes your instrument backlighting to red for night flying.

LB001 ..... P/N 10-01556 ..... $1.80

APPLICATION NOTE: Most current production Rotax® engines require 1/8NPT temperature and pressure senders.

THERMOCOUPLES

BAYONET TYPE

Threaded Fitting with 1/8" ..... P/N AN4076 ..... $23.95
Pipe thread to mate with bayonet type thermocouple.

UNIVERSAL REPLACEMENT PROBES

CHT Probe, Type J, Style AN 5541-1
P/N AN5541-1 ..... $62.70
EGT Probe, Type K MM-111 ..... P/N 11-01022 ..... $59.50
CHT Probe, Type K (Hose clamps not required)
P/N 11-01023 ..... $61.50
Cessna CHT Probe S2334-3 - Must be used with the new Rochester Gauges. Cannot be used with the old Stewart Warner Gauges
P/N 06-00703 ..... $297.95
Note: These probes will only work with a grounded system.

ROCHESTER 3080-38 TEMPERATURE PROBE

3/8-24 NF3. 250°-550° Aircraft Temperature Probe.

P/N 3080-38 ..... $79.85

ROCHESTER 3080-37 OIL TEMPERATURE PROBE

3080-37 for cluster-type instrument. 5/8"-18, 10/32 Thread.

P/N 3080-37 ..... $69.90

THERMOCOUPLE LEADS

HEAVY-WEIGHT AN SPEC. WIRE LEADS

8 Ohm Resistance, Iron-Constantan, 90 In.
P/N 42535 ..... $39.50
8 Ohm Resistance, Iron-Constantan, 144 In.
P/N 42536 ..... $48.95
8 Ohm Resistance, Iron-Constantan, 20 Ft.
P/N 42537 ..... $61.75
EGT E.W. Rings ..... P/N 11-05672 ..... $59.85

LIGHT-WEIGHT 20 GA. WIRE LEADS

2 Ohm Resistance,Copper-Constantan,10 Ft. ..... P/N 10-10900 ..... $34.85
2 Ohm Iron-Constantan, 5 Ft. 7 In. ..... P/N 10-11000 ..... $34.85
8 Ohm Resistance, Iron-Constantan, 10 Ft. ..... P/N 10-11110 ..... $34.85
Terminals on instrument end of lead are plain eye type (one for No. 8 screw and one for No. 10 screw).

IN

MICROFLIGHT GAUGES / VDO GAUGES

MICRO-1000 PYROMETERS

Superior to any other type of pyrometer, MICRO-1000 pyrometers still read the same. And we guarantee that, when properly installed, these pyrometers will be accurate within 2%. Like other MICRO-1000 gauges, these units come with our standard 2-year warranty. Order gauges, probes, and extension leads separately. NOTE: MICRO-1000 pyrometers are not compatible with other thermocouple probes. Order Micro-1000 Probes.

• 2% Accuracy • Easy-to-Read Dial • Backlighting • Standard • Temperature Compensated • Shock & Vibration Resistant • Designed & Built for Aircraft

Range	Description	Part No.	Price
0-600F/0-300C	CH131 2-1/4" Square CHT	10-01426	$75.75
0-600F/32-315C	CH130 2" Round CHT	10-01425	$61.75
0-600F/0-300C	CH141 2-1/4" Square Dual CHT	10-01429	$104.95
0-600F	CH140 2" Round Dual CHT	10-01428	$104.75
0-600F/0-1600F	CH141 2-1/4" Square CHT EGT Combo	10-01409	$104.95
0-600F/600-1600F	CH140 2" Round CHT EGT Combo	10-01408	$103.75
800-1800F/450-950C	CH131 2-1/4" Square EGT	10-01464	$72.75
800-1800F/430-980C	CH130 2" Round egt	10-01463	$61.75
800-1800F	CH141 2-1/4" Square Dual EGT	10-01467	$104.95
800-1800F	CH140 2" Round Dual EGT	10-02093	$107.85

MICROFLIGHT PROBES

CP131 EP131 EP130

A more expensive material than that of the more commonly found "J" type, the "E" type probe produces much greater accuracy at lower temperatures (less than 600°F). Extension wire is of the same material as the thermocouple to preserve the accuracy and temperature compensation qualities. NOTE: The 15' extension leads may be shortened up to seven feet. The EGT probes are high-quality Chrome/Alumel "K" types. Choose the weld-on boss type (below) for new engine installations. Choose the clamp-on type (below) to replace the existing probe. Order gauges, Micro-1000 probes and extensions separately.
Note: These are "K" type grounded probes, not for use on digital gauges. For use with Micro-1000 gauges.

Type	Part No.	Description	Price
EGT	10-01471	EP130 Type K Clamp Type Probe	$57.75
EGT	10-01475	EP130R Adjustable Rotax M8-1 Probe	$47.00
EGT	10-01477	EP131 Type K Weld on Boss Probe	$29.85
EGT	10-01478	EP132 Type K 1/8" NPT Adjustable Adapter Probe	$43.75
EGT	10-01479	EP133 Type K 1/4" NPT Adjustable Adapter Probe	$45.00
CHT	10-01441	CP132 Type K 10mm Probe	$23.50
CHT	10-05122	CP129 Type K 12mm Probe	$23.85
CHT	10-00823	CP130 Type K 14mm Probe	$23.95
CHT	10-01440	CP131 Type K 18mm Probe	$24.50

MICFOFLIGHT LEADS

Part No.	Description	Price
10-01442	CHT 18G Thermocouple Lead 7 Ft	$24.50
10-01443	CHT 18G Thermocouple Lead 15 Ft	$47.85
10-01480	EGT 18G Thermocouple Lead 7 Ft	$17.75
10-01481	EGT 18G Thermocouple Lead 15 Ft	$32.50

Note: For a complete CHT ot EGT set, order gauge, probe, and lead.

VDO GAUGES & PROBES

CYLINDER HEAD TEMP.

2-1/4" .....P/N 10-01424 .....$119.85
2" .....P/N 10-01423 .....$108.85
0-600°F
Includes 14mm ring probe

EXHAUST GAS TEMP.

2-1/4" .....P/N 10-01462 .....$151.95
2" .....P/N 10-01461 .....$138.95
250 -1650°F
With weld-on Boss type probe

OIL PRESSURE

2-1/4" .....P/N 10-01570 .....$96.00
2" .....P/N 10-01567 .....$83.00
Includes 1/8NPT sender
2" round(Gauge Only)
P/N 10-01569 .....$39.70

OIL TEMP.

2-1/4" .....P/N 10-01583 .....$64.00
2" .....P/N 10-01579 .....$51.85
Includes 1/8NPT probe
2" round(Gauge Only)
P/N 10-01581 .....$35.50

AMMETER - 12 VDC

2-1/4" ..... P/N 10-02335 .....$57.50
2" ..... P/N 10-02334 .....$44.85
No shunt required

VOLTMETER-12 VDC

2-1/4" ..... P/N 10-01638 .....$51.50
2" ..... P/N 10-01637 .....$38.75
With color arc

FUEL LEVEL-10-180 OHM

2-1/4" .....P/N 10-01485 ..... $39.25
2" .....P/N 10-00825 ..... $26.50
Order only P/N 10-04788
probes for this instrument.

WATER TEMP.

2-1/4" ..... P/N 10-01649 ..... $61.75
2" ..... P/N 10-01646 .....$48.50
Includes 1/8NPT probe

HOUR METER-12VDC

2-1/4" ..... P/N 10-01505 .....$43.85
2" ..... P/N 10-01504 .....$31.50
With minute hand

FLUID TEMPERATURE GAUGE

2" ..... P/N VDO180902D $65.75
Includes 96" capillary tubing
and adapter kit.

VDO PROBES

VDO Float Probe 10-180ohms.....P/N 10-04788.....$53.75
VDO Float Probes - 240 ohms .....P/N 10-00826.....$48.85
Fuel Probe Mounting Ring .....P/N 10-01502.....$27.50
VDO Temperature Probes - 1/8NPT
Water Probe 1/8" NPT.....P/N 10-01648.....$10.95
Oil Probe 1/8" NPT.....P/N 10-01580.....$15.80
Oil Temp. Probe 3/8" NPT .....P/N 10-01582.....$16.95
VDO CHT Probe - Type "J"
14mm ring type.....P/N 10-01439.....$29.50
VDO EGT Probe - Type "K"
Weld-on Boss.....P/N 10-01461 ..... $138.95
Oil Pressure Sender 1/8"-27 NPT (30PSI) .....P/N 10-05471.....$49.70
Oil Pressure Sender 1/8" NPT (80 PSI).....P/N 10-01568.....$43.65
Oil Pressure Sender 1/8-27 NPT (150 PSI) .....P/N 10-04967.....$51.75

IN

ROTAX 912 2-1/4" CHT GAUGE FARENHEIT

Rotax 912 CHT Temp – F. For use with VDO sensor only. Red: 270-300. Yellow: 100-150, 220-270. Green: 130-220 Diameter: 57mm (2.25 in.). Motor: 912S. P/N 15-06646 ..... $100.75

ROTAX 912UL 2-1/4" CHT GAUGE

IM-549 - Water Temperature Indicator (CHT) Rotax 912 engine (80HP) and 914. 57 mm - Scale in °F. Designed specifically for Rotax 912 (80HP) and 914 with silkscreen red areas green and yellow. Diameter 57mm, 100-300 ° F range, distance between 2 ° F indications in central area. Supply voltage 8-35V DC. It works with sensors that come from the factory with Rotax engines.
P/N 15-08392 ..... $89.75

ROTAX 912 2-1/4" EGT GAUGE FARENHEIT

A540 Rotax 912 EGT Temp – F. For use with Aviasport Sender only . Red: 1500-2000. Yellow: 600-1100. Green: 1100-1450. Diameter: 57mm(2.25 in) P/N 15-05922 ..... $219.50

ROTAX 912 2-1/4" OIL PRESSURE GAUGE PSI

A572 Rotax 912 Oil Pressure – PSI. For VDO Sender only. Red: 0-12, 90-150 psi. Yellow: 75-90 psi. Green: 30-75 psi. Diameter: 57mm(2.25 in)
P/N 15-05924 ..... $104.95

ROTAX 912 2-1/4" OIL TEMPERATURE GAUGE FARENHEIT

A558 Rotax 912 Oil Temp. For use with VDO Sender only. Red: 90-120, 280-320. Yellow: 120-190, 230-270. Green: 190-230. Note: Not for 912iS and 914 engines. See "Alternate Items" part number 15-08399. Diameter: 57mm (2.25 in.) Motor: 912S/914. P/N 15-05926 ..... $100.75

ROTAX 912 2-1/4" TACHOMETER

A105 Rotax 912 Tachometer. 0-7000 rpm. Electronic Connection only. Red: 0-1200, 5800-7000. Yellow: 1200-1800, 5500-5800. Green: 1800-5500. P/N 15-05932 ..... $145.85

ROTAX 912 3-1/8" TACHOMETER

A149 Rotax 912 Tachometer - 3-1/8". 0-7000 range. Electronic connection only. Red: 0-1200, 5800-7000. Yellow: 1200-1800, 5500-5800. Green: 1800-5500. P/N 15-05930 ..... $146.75

ROTAX 912 3-1/8" TACHOMETER / HOURMETER

A533 Rotax 912 Tachometer Hourmeter - 3-1/8". Hours: 10,000. Red: 0-1200, 5800-7000. Yellow: 1200-1800, 5500-5800. Green: 1800-5500.
P/N 15-05931 ..... $221.95

ROTAX 912 2-1/4" VOLTMETER

A562 Rotax 912 Voltmeter. Red: 8-10, 14-16 volts. Yellow: 10-11, 13-14 volts. Green: 11-13 volts.
P/N 15-06650 ..... $140.75

ROTAX 912 2-1/4" FUEL PRESSURE GAUGE BAR

A564 ROTAX 912 Fuel Pressure Bar. Requires Sender below. Red: 0-1.5 , 4-6 bar. Green: 1.5 – 4.0 bar. Diameter: 57mm (2.25 in.). Sensor: 7 PSI.
P/N 15-06647 ..... $89.75

FUEL PRESSURE SENDER - 1/8 NPT

A603 Aviasport Fuel Pressure Sender. 1/8" NPT threads. P/N 15-06648 ..... $224.95

AVIASPORT EGT SENDER - SCREW IN

A416 Aviasport EGT Sender. Screw-in type.
P/N 15-05921 ..... $47.50

ROTAX 912 EGT 4 READING KIT

The IM-553 instruments have been designed especially to measure the EGT in Rotax® engines 912. Includes the IM-580 EGT Connection Box. 300-1000 °C P/N 15-08617 ..... $175.00

ROTAX 912UL 912 ULS 2-1/4" EGT KIT

The IM-540 instruments have been designed especially to measure the EGT in Rotax® engines 912. Includes the IM-580 EGT Connection Box. 800-1800 °F P/N 15-08620 ..... $175.00

ROTAX 912UL 2-1/4" OIL TEMP KIT

he IM-557 instruments have been designed especially to measure the Oil Temperature in Rotax® engines 912UL (80 HP). Includes the IM-580 EGT Connection Box. 100-300 °F
P/N 15-08621 ..... $175.00

ROTAX 912 2" INCH FUEL PRESSURE KIT

The IM-584 have been designed especially to measure the FUEL Pressure in Rotax® engines 912 (Series). Includes the IM-604 Sensor. The display areas are divided into red, green and yellow zones in line with Rotax limits. 0-6 Bar.
P/N 15-08624 ..... $341.75

ROTAX 912 2-1/4" INCH FUEL PRESSURE KIT

Unlike mechanical instruments fuel pressure, electronic instruments use a high precision sensor to be installed close to the engine, avoiding cabin carry fuel lines. Includes the IM-604 Sensor. 0-8 PSI.
P/N 15-08629 ..... $348.75

ROTAX 914 3 EGT 4 READING KIT

The IM-576 instruments have been designed especially to measure the EGT in Rotax® engines 914. Includes the IM-580 EGT Connection Box. The instruments use a pointer thats turns 240º, witch gives them great resolution. Their display areas are divided into red, green and yellow zones in line with the ROTAX limits. 600-1800 °F.
P/N 15-08623 ..... $175.00

IN

VISIT WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LIST OF INSTRUMENTS AND SENDERS.

COMBINED ENGINE INSTRUMENT

• High performance, small dimensions & weight - an ideal instrument suitable for all types of engines • Set value limits at 2 levels (Warning & Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible engine damage • Configure display to show temperature, pressure, rotations, battery voltage, engine hours, OAT, fuel consumption as you wish using the configuration program delivered with the instrument. Size: 3-1/8"

Digital eng. instr. for combinate engine values measuring ..... P/N 10-00893 ..... $599.00
Thermocouple probe for EGT (type K) M8x1 screw type - for all engines ..... P/N 10-00894 ..... $29.75
Thermocouple probe for CHT (type J) 12mm hole - for all engines ..... P/N 10-00895 ..... $15.75
Thermocouple probe for CHT (type J) 14mm hole - for all engines ..... P/N 10-00896 ..... $15.75
Thermocouple probe for CHT (type J) 18mm hole - for all engines ..... P/N 10-00897 ..... $15.75
Oil or water temp. sender (0 to 110°C/230°F) for Rotax 2-stroke ..... P/N 10-00898 ..... $30.00
Oil or water temp. sender (0 to 150°C/300°F) for Rotax 4-stroke ..... P/N 10-00899 ..... $39.00
Passive oil pressure sender (0 to 145 PSI, 1/8"-NPT) for all engines ..... P/N 10-00904 ..... $39.50
Active oil pressure sender (0 to 145 PSI, 1/8"-NPT) for all engines ..... P/N 10-00905 ..... $125.75
Metal hi-quality flow sensor (0-30 gph)-all engines ..... P/N 10-00906 ..... $178.95
Passive speed sensor-all eng. (inductive sensor) ..... P/N 10-00907 ..... $25.00
Active speed sensor-all engines (hall effect 3-wire sensor) 5-30V power supply req. ..... P/N 10-00909 ..... $95.00
Active speed sensor-all engines (hall effect 3-wire sensor) 5V. ..... P/N 10-00910 ..... $95.00

FUEL COMPUTER

• Measure immediate fuel flow of your engine in liters/hour or liters/100 km and average fuel consumption • Set limit values at 2 levels (Warning & Alarm), for all measured values. In case these values are exceeded, the instrument will warn you prior possible failure or damage of the engine • Display at any time the fuel levels in the left, right or both fuel tanks. Size: 2-1/4"

Fuel computer without fuel-flow sensor ..... P/N 10-00870 ..... $349.00
Metal high-quality flow sensor for all engines ..... P/N 10-00871 ..... $178.95
Fuel Qty Sender Float (240-30 OHM) ..... P/N 10-00056 ..... $39.95
Active cap. fuel level sender (all aircraft) ..... P/N 10-00798 ..... $139.75
Active fuel pressure sender (all aircraft) ..... P/N 10-00873 ..... $109.95

INTERCOM

• Intelligently managed voice activators (VOX) •Listen to your favorite music e.g. from CD/cassette directly to your headphones or attach your intercom to your mobile telephone • Control your intercom digitally using keys & displays • Record and play pre-takeoff or landing checklist directly to your headphones (checklist can easily be created on your PC and recorded into the intercom) • In case of accident simply switch on emergency broadcast, which will be re-played at short intervals and transmitted using a RDST w/pre-recorded message. Size: 2-1/4"

Intercom w/voice alarm, checklist & digital voice rec.
P/N 10-00867 ..... $459.00
Connection cable to VHF airband-transceiver ..... P/N 10-00869 ..... $52.00

ALTIMETER WITH ENCODER

• 2 instruments for the price of one – altimeter & mode C encoder for all types of transponder • Set value limits at 2 levels (Warning & Alarm) for multiples • Display QNH or QFE levels with the option of setting zero • The instrument will provide a warning if an insufficient oxygen altitude is reached • The instrument will signal low altitude, e.g. after opening of undercarriage, MDA, approach. Size: 2-1/4"

P/N 10-00891 ..... $398.00

VOLT-AMPERE METER

• First volt-ampere meter with 3-phase measurement of voltage, current & frequency • Connect up to 3 circuits for measuring current and voltage, for example instrument panel circuit, light circuit and flash and other circuit • Check the activity of the three-phase voltage converter for an artificial horizon using your voltmeter with the option of checking 400 Hz frequency • Set value limits at two levels (Warning and Alarm) for minimum & maximum voltage and current. Set the form of display either by gradual switching of voltage and current on the display at intervals chosen by you (SCAN function) or by displaying lowest or highest current-voltage. Size: 2-1/4"

Digital volt-ampere meter & frequency meter P/N 10-00883 ..... $379.00
Current shunt sensor for measuring to 50amps (for all aircraft)
P/N 10-00884 ..... $39.00

RPM & ENGINE HOURS

• Measure rotations & engine hours with the option to trigger the counting from a certain engine rotation rate (by your choice) so that you can divide taxing from flight time • Set value limits at 2 levels (Warning & Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible engine damage • Several separate users with pilot/student option – suitable for several owners or in flight schools, where the instructor selects the student and the time will be measured only against his/her name. Size: 2-1/4"

Digital RPM w/ engine-clock & stop-watch ..... P/N 10-00886 ..... $309.00
Digital RPM w/ engine-clock, stop-watch & internal speed sensor
P/N 10-00887 ..... $389.00

THERMOMETER

• Use the thermometer to measure up to 4 temperatures and oil pressure • Use the automatic choke function using the modeler's servo regulated by thermometer according to any of the measured temperatures e.g. CHT • Set value limits at 2 levels (Warning and Alarm) for all measured values. In case these values are exceeded the instrument will warn you at time of any possible engine damage • Set the form of display either by gradual switching of measured temperatures on the display at intervals selected by you (SCAN function) or displaying the closest temperatures to the limit values that you have set. Size: 2-1/4"

Therm. for 4 temp. & press. w/choke control P/N 10-00874 ..... $315.00
Thermocouple probe for CHT (type J) 12mm hole - for all engines
P/N 10-00876 ..... $15.75
Thermocouple probe for CHT (type J) 14mm hole - for all engines
P/N 10-00877 ..... $15.75
Oil or water temp. sender (0 to 150°C/300°F) for Rotax 4-stroke.
P/N 10-00879 ..... $39.00

G ACCELEROMETER

• Using the accelerometer measure the operational values of your aircraft on the vertical axis • Set value limits at 2 levels (Warning and Alarm) for all measured values. In case these values are exceeded the instrument will warn you in time of any possible damage to the aircraft • Always be informed of values approaching the limits, which could result in damage to the aircraft • Always be aware of exceeded values from the previous flight after switching on the instrument • Start of logging is carried out by a switch on the undercarriage or by an internal / external pressure sensor on attaining your selected speed. Size: 2-1/4".

Digital accelerometer ..... P/N 10-00889 ..... $485.00
Digital accelerometer w/ internal airspeed sens.
P/N 10-00890 ..... $445.00

TL-3424-RAS ACCELEROMETER

The TL-3424 is complete weight acceleration management. The instrument incorporates a high-precision sensor for measuring acceleration in the vertical axis. The SAS version also incorporates a sensor for measuring the indicated airspeed, which enables the activation of memory recording. Both versions enable to utilize an undercarriage scanner that can also activate memory recording.

P/N 10-02312 ..... $445.00

TL INSTRUMENTS ARE FOR EXPERIMENTAL AIRCRAFT ONLY.

IN

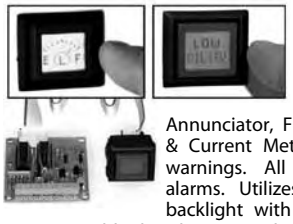
AE FUEL GUARDIAN

AE FUEL GUARDIAN LOW FUEL ANNUNCIATION SYSTEM

This system gets your attention before you have to switch tanks. When the annunciator light flashes, you will know your precise fuel quantity and also the time to engine shut-down for that tank. HOW DOES IT WORK? - The optical fuel sensor is a non-contact sensor mounted in a single hole in the fuel tank. It operates by bouncing a beam of light into the sensors lens. If it is reflected back into the sensor, there is no liquid present. If it is not reflected back, it is dissipated into the liquid media. The sensor output is pulled down, or activated.The electronics constantly monitors the sensor outputs of both tanks. When a low fuel level is detected, the appropriate light starts to blink, getting the pilot's attention immediately. After the pilot sees the alarm, he can press the acknowledge button. This action turns the light on solid (continuous) denoting a low fuel quantity. This function of the annunciator eliminates the distracting flashing action of the lights for the pilot, yet he can still see that he has a low fuel indication. The AE Fuel Guardian also has an audio output that can be wired into the aircraft intercom or audio system if desired. The audio beep is only present when the annunciator lights are flashing. The AE Fuel Guardian annunciator lights can also be wired into the aircraft dimmer bus if desired for night flight. This system is 100% solid state and is compatible with 12VDC or 24VDC electrical systems. The installer sets the sensors to provide low fuel warning at whatever level is desired. System includes (2) annunciator panel lights, (2) optical sensors, (1) push button, Sensor drive and annunciator electronics enclosure, wiring, and lettering decals. For Experimental aircraft only.

Kit With One Sensor ..... P/N 10-01811 ..... $149.00
Kit With Two Sensor ..... P/N 10-00399 ..... $210.00

AE AG6 ANNUNCIATOR GAUGE METER



One Button, Multi-function,Aircraft Annunciator - Fuel Gauge, Several styles available (with low fuel warning and caution zones) Volt Meter & Current Meter (with low & high warnings and caution zones) A full service Aircraft Annunciator, Fuel Gauge, Oil Level Gauge, Volt Meter & Current Meter. Will display many different aircraft warnings. All devices feature user programmable alarms. Utilizes a push-button LCD display that is backlight with a 3 color LED. All functions are fully programmable by the user. The push-button/display can be used for programming, acknowledging the alarms, and paging thru up to 16 different screens or "annunciator points". Can automatically scan thru each screen or it can be done manually using the push-button. The pilot has the ability to mask or unmask annoyance alarms. NOTE: Input devices not included. It is up to the user to provide input devices such as fuel senders, shunts, oil level sensors and input switches to drive the AG6

DISPLAY & PUSH BUTTON ..... P/N 10-04180 ..... $169.95

AE LOW OIL LEVEL SENSOR

Originally designed for small Lycoming engines, but can be utilized on several other engine types as well. Utilizes a 1/2" NPT fitting so that it can be inserted directly into the oil pan of most small Lycoming Engines. The 5/8" x 5/8" square bolt head of this sensor has been drilled (0.08" dia.) to accept a safety wire. Material: Stainless Steel construction Switch: Normally open when normal oil level, 30V @ 0.35Adc max. Temperature: -20°F to +280°F

You can utilize the "flashing panel light", a relay, or utilize your own panel indicator. The maximum current draw for any light or relay is 0.2Adc. The light can be mounted in the instrument panel using a 0.249" to 0.254" diameter mounting hole. The light supplied will operate from a +12Vdc system. To make this system +24V compatible, you will need to add a 12V zener diode in series with our flashing panel light. AE Low Oil Level Sensor (sensor ONLY) ..... P/N 10-01812 ..... $99.00
AE Low Oil Level Sensor with blinking red LED (LED blinks when oil level is low) ..... P/N 10-03891 ..... $114.95

AUXILIARY FUEL PUMP RELAY

The AFPR is a "Smart" Auxiliary Fuel Pump Relay. This device allows the pilot to flip oneswitch and quickly drain the contents of the auxiliary fuel tank without over stressing the auxiliary fuel pump. The AFPR will pump down the auxiliary fuel tank, and then automatically shut the fuel pump off when no fuel is detected. The AFPR includes a very reliable optical fuel sensor that can be easily installed in the auxiliary fuel tank or in the fuel line. The AFPR can be operated in and one of four modes of operation. The AFPR also has an output that can be used for a light to indicate when the fuel pump-down has been completed. Input Power: 12Vdc or 24Vdc, 0.1A max. Enclosure: 3.5" x 2.25 x 1.25" (89mm x 57 x 32mm) Fuel Sensor Mounting Hole: 0.475" (12mm) P/N 10-04343 ..... $129.95

IN

AE AIRSPEED SWITCH & RELAY BOARD

RELAY BOARD USE: Control your Flap & Elevator Trim motors. This board allows you to use any inexpensive switch [Single Pole, Double Throw, (ON)-OFF-(ON), Spring Loaded, 3 Position] to control your flap and elevator trim motors. You can series as many switches as you desire control your flap & elevator trim motors. Free connection diagrams for relay boards and airspeed switch for several typical systems. AIRSPEED RELAY USE: Flap Deployment Protection at High Airspeeds When our relay board is used with our airspeed switch, you can protect you flaps from being actuated in the downward direction when your airspeed is too high (above the white arc). We provide the end user with easy connection diagrams for several different systems. Automatic Speed Adjust for Elevator Trim Motors Many have complained about the fast adjustment speed of elevator trim motors at high airspeeds. When our relay board is used with our airspeed switch, it eliminates this problem. You will have two speeds, fast for slower airspeeds, and slower for high airspeeds. The slower speed is adjusted by supplying this relay board a lower motor drive voltage. RELAY BOARD SPECIFICATIONS Each board includes two independent, Single Pole, Double Throw Relays. Relay contacts are protected against inductive sparking generated from switching inductive loads such as motors. For use on 12Vdc systems. Switch currents up to 10 Amps. Boards are stackable to 3 levels high for saving panel space. Mounting hardware included

AE Relay Board One ..... P/N 10-01814 ..... $45.25
AE Relay Board Two Staked ..... P/N 10-01815 ..... $63.75
AE Relay Board Three Staked ..... P/N 10-01816 ..... $79.00
AE Airspeed Switch & Board ..... P/N 10-01817 ..... $93.00

SAFETY-FLY 700

Safety-fly 700 is a useful universal control device for ultralight aircrafts that monitors in real-time, by means of warning lights and an acoustic buzzer, all the engine pre-alarm parameters listed below using the standard sensor signals installed on the Rotax engine, thus avoiding engine problems.
Safety-fly 700 displays and checks:

- pre-alarm cylinder heads
- pre-alarm engine oil temperature
- pre-alarm minimum and maximum engine oil pressure
- green light for regular oil temperature
- fuel light for open taps
- the position of flaps on 3 levels
- timer set to 2 minutes

The calibration is done directly by the pilot, by means of the existing instruments installed on the dashboard.
Safety-fly 700 is supplied with wiring harness, connectors and operating manual. 3 year warranty. Made in Italy.

P/N 10-04934 ..... $195.00

AEROSPACE LOGIC FOUR CYLINDER EGT/CHT

The ECT204 is a full color EGT and CHT combination instrument that provides simultaneous, real-time display of all four cylinders. This kit includes four Type-K ungrounded, EGT thermocouple probes of your choice, four Type-J ungrounded, CHT thermocouple probes of your choice, and all connectors and installation hardware. Both Cylinder head and Exhaust gas temperature functionality is TSO'd and meets the temperature accuracy requirements of SAE AS8005 for a Class IIa (+/- 1%) instrument. Functional displays include: Real-time four cylinder temperature display: Menu select option for fast selection of display type, Automated rich-of-peak (ROP) leaning function for EGT, Automated lean-of-peak (LOP) leaning function for EGT, Automated shock cooling monitoring for CHT, The ECT204 kits are TSO'd and STC'd as a primary replacement instruments under all flight conditions (day/night VFR and IFR).

P/N 10-05171.....$1,583.00

AEROSPACE LOGIC FUEL FLOW SINGLE ENGINE

This kit includes both instrument and fuel flow transducer. Fuel flow functionality is TSO'd and meets the repeatable accuracy requirements of SAE AS407B, +/- 0.1US Gallon per hour. Functional displays include: Graphical indication of fuel flow, Digital display of instantaneous fuel flow, Digital display of fuel used since flight commencement, and Fully programmable color indication to meet all aircraft marking requirements. The FF200K30 instrument kit is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR). The FF200K instrument kit includes the full installation wiring harness, fuel flow transducer for a maximum fuel flow of 30gph and all necessary install hardware for the instrument. Installer supplied couplings are needed to be supplied by the installer to mate to the fuel flow transducer, as required. P/N 10-05172.....$895.00

AEROSPACE LOGIC FUEL FLOW TWIN ENGINE

This kit includes both instrument and two fuel flow transducers Fuel flow functionality is TSO'd and meets the repeatable accuracy requirements of SAE AS407B, +/- 0.1US Gallon per hour. Functional displays include: Graphical indication of fuel flow, Digital display of instantaneous fuel flow, Digital display of fuel used since flight commencement, and Fully programmable color indication to meet all aircraft marking requirements. The FF202K30 instrument kit is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR). The FF202K instrument kit includes the full installation wiring harness, fuel flow transducers for a maximum fuel flow of 30gph and all necessary install hardware for the instrument. Installer supplied couplings are needed to be supplied by the installer to mate to the fuel flow transducer, as required. P/N 10-05173.....$1,527.00

AEROSPACE LOGIC SINGLE TANK FUEL LEVEL

The FL201 instrument is an advanced, next generation airborne fuel level reporting instrument that supports two fuel tanks. Fuel level functionality is TSO'd and meets the repeatable accuracy requirements of SAE AS405C, +/- 1US Gallon. Functional displays include: Graphical indication of fuel level in the tank, Digital fuel quantity for the tank, Fully programmable color indication to meet all aircraft marking requirements, and Graphical fuel level indication, starting at power on. The FL201 instrument is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR). It is a requirement of the STC that this be the only fuel level indicator, when installed. The FL201 instrument utilizes the existing fuel senders.

P/N 10-05174.....$603.00

AEROSPACE LOGIC DUAL TANK FUEL LEVEL - CIRRUS

The FL202G instrument is an advanced, next generation airborne fuel level reporting instrument that supports two fuel tanks. It is specifically designed for Cirrus Aircraft and to be used with CIES Inc. fuel senders. Fuel level functionality is TSO'd and meets the repeatable accuracy requirements of SAE AS405C, +/- 1US Gallon. Functional displays include: Graphical indication of fuel level in the tank, Digital fuel quantity for the tank, Fully programmable color indication to meet all aircraft marking requirements, and Graphical fuel level indication, starting at power on. The FL202G instrument is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR). It is a requirement of the STC that this instrument be used with CIES Inc. fuel senders.

P/N 10-05175.....$666.00

AEROSPACE LOGIC MANIFOLD PRESSURE & FUEL FLOW

The MF200 is an advanced, next generation manifold pressure and fuel flow combination instrument for flow rates up to 30gph. Manifold pressure functionality is TSO'd and meets the pressure accuracy requirements of SAE AS8042. Fuel flow functionality is TSO'd and meets the accuracy requirements of TSO C44c. Functional displays include: Primary - Real-Time analog data depiction and digital value display for both manifold pressure and fuel flow, Secondary - Real-Time analog data depiction and digital value display for both manifold pressure and fuel flow as well as fuel used, and Graphical trend display of manifold pressure and fuel flow data The MF200K30 is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR). This kit includes both an A200-PMP manifold pressure sensor and a A200-201A-6 fuel flow sensor for full functionality.

P/N 10-05176.....$1,140.00

AEROSPACE LOGIC SINGLE MANIFOLD PRESSURE

The MP200 is an advanced, next generation single manifold pressure instrument. Manifold pressure functionality is TSO'd and meets the pressure accuracy requirements of SAE AS8042. Functional displays include: Real-Time analog data depiction and digital value display of manifold pressure, Graphical trend display of manifold pressure data, and The MP200K is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR). This kit includes a A200-PMP manifold pressure sensor and all installation hardware.

P/N 10-05177.....$685.00

AEROSPACE LOGIC MANIFOLD PRESSURE & TACHOMETER - BENDIX

The MT200 is an advanced, next generation manifold pressure and tachometer combination instrument. Manifold pressure functionality is TSO'd and meets the pressure accuracy requirements of SAE AS8042. Tachometer functionality is TSO'd to C49b and accuracy requirements of AS404C. Functional displays include: Simultaneous, real-time analog data depiction and digital value display for both manifold pressure and tachometer, Graphical trend display of both manifold pressure and tachometer data. Display and tracking of engine time. The MT200 is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR) This kit includes a A200-PMP manifold pressure sensor, and a Hall Effect sensor for Bendix type single magnetos. The sensor is mounted in the vent hole (closest to the engine) of the magneto. The instrument will work on all 4, 6 and 8 cylinder aircraft engines. Includes all installation hardware.

P/N 10-05178.....$1,099.00

AEROSPACE LOGIC TM202 DUAL TACHOMETER KIT - BENDIX SINGLE MAGNETO

The TM202 is a precision dual tachometer that provides RPM data accurate to +/- 1RPM. It meets all the requirements of TSOC49b and provides the following functionality: RPM indication in both analog and digital format for both engines, including support for engines that require a limited RPM range, Independent engine time recording, Trend graph function representing RPM vs. Time for both engines simultaneously This instrument kit includes two Hall Effect sensors for Bendix type single magnetos. The sensors are mounted in the vent hole (closest to the engine) of the magneto. The instrument will work on all 4, 6 and 8 cylinder aircraft engines.

P/N 10-05179.....$1,352.00

AEROSPACE LOGIC MANIFOLD PRESSURE & TACHOMETER - SLICK

The MT200 is an advanced, next generation manifold pressure and tachometer combination instrument. Manifold pressure functionality is TSO'd and meets the pressure accuracy requirements of SAE AS8042. Tachometer functionality is TSO'd to C49b and accuracy requirements of AS404C. Functional displays include: Simultaneous, real-time analog data depiction and digital value display for both manifold pressure and tachometer, Graphical trend display of both manifold pressure and tachometer data., and Display and tracking of engine time The MT200 is TSO'd and STC'd as a primary replacement instrument under all flight conditions (day/night VFR and IFR) This kit includes a A200-PMP manifold pressure sensor, and a Hall Effect sensor for Slick/Unison type magnetos. The sensor is mounted in the vent hole (closest to the engine) of the magneto. The instrument will work on all 4, 6 and 8 cylinder aircraft engines. Includes all installation hardware.

P/N 10-05223.....$1,099.00

AEROSPACE LOGIC CHT INDICATORS

Full color CHT instrument that provides simultaneous, real-time display of all cylinders. This kit includes thermocouple probes, all connectors and installation hardware. Functionality TSO'd and meets the temperature accuracy requirements of SAE AS8005 for a Class IIa (+/- 1%) instrument.
Functional displays include: Real-time cylinder temperature display Single cylinder temperature monitoring while retaining graphic indications Graphic trend analysis and viewing of all cylinders simultaneously Programmable shock cooling monitor and indication TSO C43c

Part No.	Model No.	Description	Cyl.	Price
10-04485	CT204R2	CHT Instrument With 12mm Ring Probes	4	$890.00
10-04486	CT204R4	CHT Instrument With 14mm Ring Probes	4	$890.00
10-04487	CT204R8	CHT Instrument With 18mm Ring Probes	4	$890.00
10-04484	CT204B	CHT Instrument With Bayonet Probes	4	$891.00
10-04362	CT206R2	CHT Instrument With 12mm Ring Probes	6	$1,028.00
10-04365	CT206R4	CHT Instrument With 14mm Ring Probes	6	$1,028.00
10-04367	CT206R8	CHT Instrument With 18mm Ring Probes	6	$1,028.00
10-04358	CT206B	CHT Instrument With Bayonet Probes	6	$1,032.00
10-05171	ECT204	CHT AndEGT Combo Kit	---	$1,583.00
10-05171 Does Not Include Probes****				

AEROSPACE LOGIC EGT INDICATORS

Full color EGT instrument that provides simultaneous, real-time display of all six cylinders. This kit includes six Type-K ungrounded, 1 1/2" EGT clamp type thermocouple probes, all connectors and installation hardware Exhaust gas temperature functionality is TSO'd and meets the temperature accuracy requirements of SAE AS8005 for a Class IIa (+/- 1%) instrument
Functional displays include: Real-time cylinder temperature display, Menu select option for fast selection of display type, Automated rich-of-peak (ROP) leaning function, Automated lean-of-peak (LOP) leaning function, Single cylinder temperature monitoring while retaining graphic indications for all cylinders, and Graphic trend analysis and viewing of all cylinders simultaneously TSO C43.

Part No.	Model No.	Description	Cyl.	Price
10-04402	ET204P1	EGT Instrument With 1-1/2" Clamp Probes	4	$895.00
10-04403	ET204P2	EGT Instrument With 2" Clamp Probes	4	$960.00
10-04404	ET204P3	EGT Instrument With 2-1/2" Clamp Probes	4	$961.00
10-04405	ET204PB	EGT Instrument With Bayonet Probes	4	$921.00
10-04413	ET206P1	EGT Instrument With 1-1/2" Clamp Probes	6	$1,038.00
10-04414	ET206P2	EGT Instrument With 2" Clamp Probes	6	$1,038.00
10-04415	ET206P3	EGT Instrument With 2-1/2" Clamp Probes	6	$1,038.00
10-04416	ET206PB	EGT Instrument With Bayonet Probes	6	$1,125.00
See Web For Additional Part Numbers				

AEROSPACE LOGIC FUEL PRESSURE/AMMETER/ VOLTMETER

The FA200 is an advanced, next generation fuel pressure and ammeter combinational instrument This kit includes an A200-PSF fuel pressure sensor, an A200-HAS Hall Effect current shunt and all installation hardware. meets requirements of SAE AS408C. Functional displays include Real-Time analog data depiction and digital value display Graphical trend display of fuel pressure and ammeter data TSO C47a

Part no.	Model No.	Description	Price
10-04449	FA200K	Fuel Pressure And Ammeter Kit	$793.00
10-04451	FA200VK	Fuel Pressure And Ammeter Kit With Voltmeter	$862.00

AEROSPACE LOGIC TACHOMETER KIT

The TM200 is a precision tachometer that provides RPM data accurate to +/- 1RPM. RPM indication in both analog and digital format, including support for engines that require a limited RPM range,Engine time Trend graph function representing RPM vs. Time This instrument kit includes the Hall Effect sensor for single magnetos. The sensor is mounted in the vent hole (closest to the engine) of the magneto. The instrument will work on all 4, 6 and 8 cylinder aircraft engines. TSOC49b

Part no.	Model No.	Description	Price
10-04478	TM200B	Tachometer Kit For Bendix Mag	$781.00
10-04477	TM200S	Tachometer Kit For Slick Mag	$781.00
10-05179	TM202B	Tachometer Kit For Dual Bendix Mag	$1,352.00
10-05513	TM202S	Tachometer Kit For Dual Slick Mag	$1,352.00

AEROSPACE LOGIC FL-100 DUAL FUEL LEVEL INDICATORS

Fuel level functionality is TSO'd and meets the repeatable accuracy requirements of SAE AS405C, +/- 1US Gallon. Functional displays include: Graphical indication of fuel level in each tankSelectable digital fuel quantity for each tank Fully programmable color indication to meet all aircraft marking requirements- Graphical fuel level indication, starting at power onThe FL202 instrument is TSO'd and STC'd as a primary replacement instrument under all flight conditions. It is a requirement of the STC that this be the only fuel level indicator, when installed.The FL202 instrument utilizes the existing fuel senders.

Part No.	Model No.	Description	Price
10-05174	F1201	Single Tank Resistive 300 Ohm Fuel Level	$603.00
10-04432	FL202	Dual Tank Resistive 300 Ohm Fuel Level	$690.00
10-05175	FL202G	Dual Tank Resistive 300 Ohm Fuel Level For Cirrus	$666.00
10-05515	FL251	Single Tank 0-5v Fuel Level	$561.00
10-04443	FL252	Dual Tank 0-5v Fuel Level	$667.00

AEROSPACE LOGIC OIL PRESSURE & TEMPERATURE

The OPT200 is an advanced, next generation oil pressure and temperature combinational instrument. Oil temperature is TSO'd and meets the temperature accuracy requirements of SAE AS8005, while oil pressure meets the requirements of AS408C. Functional displays include:Real-Time analog data depiction and digital value display for both pressure and temperature Graphical trend display of both oil pressure and temperature dataThe OPT200 is TSO'd and STC'd as a primary replacement instrument under all flight conditions.This kit includes an A200-TSO oil temperature sensor and an A200-PSO oil pressure sensor plus all installation hardware

Part No.	Model No.	Description	Price
10-04465	OPT200K	Oil Pressure And Temperature Kit	$882.00
10-04467	PT200VK	Oil Pressure And Temperature Kit With Voltmeter	$952.00
10-04469	OP202K	Dual Oil Pressure Kit	$1,006.00
10-04471	OP202VK	Dual Oil Pressure Kit With Voltmeter	$1,068.00
10-04473	OT202K	Dual Oil Temperature Kit	$857.00
10-04475	OT202VK	Dual Oil Temperature Kit With Voltmeter	$921.00

AEROSPACE LOGIC VOLMETER / AMMETER

The VA200 is an advanced, next generation voltmeter and ammeter combinational instrumentThe ammeter portion of this instrument may be used as either a normal ammeter, indicating both charge and discharge current or a loadmeter, displaying the total load on the alternator/generator. STC'd as a primary replacement

Part No.	Model No.	Description	Price
10-04480	VA200K	Voltmeter And Ammeter Kit Includes 100amp Shunt	$616.00

AEROSPACE LOGIC CLOCK & OUTSIDE AIR TEMPERATURE

The CA200 is an advanced, next generation airborne timepiece plus a seven input annuciator. It can scan seven 200 Series instruments and report any out-of-limit conditions the moment they occur; all on one instrument. The CO200 is identical to the CA200 with the exception of the annunciator function. Outside air temperature functionality is TSO'd and meets the temperature accuracy requirements of SAE AS8005 for a Class IIa (+/- 1%) instrument. Functional displays include: • UTC Time • Local Time • Chronograph • Flight Time and Interval Timer • Seven annunciator sense inputs (CA200 only) P/N 10-04348.....$511.00

AEROSPACE LOGIC SENSORS AND PROBES

Description	Part No.	Price
A200-TEC5 EGT Probe Kit	10-04813	$201.95
A200-TEC20 EGT Probe Kit	10-04812	$187.75
A200-TEC25 EGT Probe Kit	10-04800	$183.75
A200-HAS Hall Effect Current Shunt	10-04808	$161.85
A200-PSF Fuel Pressure Sensor	10-04804	$262.95
A200-HMB Bendix Rotational Speed Sensor	10-04806	$213.95
A200-HMS Slick Rotational Speed Sensor	10-04807	$213.95
A200-PSO Oil Pressure Sensor	10-04805	$266.95
A200-TSO Oi; Temperature Sensor	10-04801	$178.75
A200-TCB Bayonet CHT Probe Kit	10-04799	$170.75
A200-PMP Manifold Pressure Sensor	10-04803	$266.95
A200-TSA Air Temperature Sensor	10-04802	$179.75

PLEASE SEE OUR WEBSITE FOR ADDITIONAL MODELS, INCLUDING STC'D MODELS.

IN

JPI ENGINE SCANNERS

J.P. INSTRUMENTS EDM-700 DIGITAL AND ANALOG EGT/CHT SCANNERS

All pilots know that to run their engines at peak performance means maximum efficiency! Maximum efficiency translates to substantial savings in fuel burned and engine maintenance. JPI's EDM-700 assures pilots of Peak Precision Engine Performance Simply and Economically. The EDM-700 includes: Computer assisted diagnostics for troubleshooting the entire system, 2-1/4" panel mount, Normalize mode, Graphics resolution, Automatically finds the first EGT to peak, display of OIL, OAT, IAT, CDT, voltage, shock cooling of two TIT's, one degree temperature resolution, selectable °C or °F, all functions have Hi/Lo pilot programmable limits, supplied with JPI's well known, grounded, fast response probes, TSO quality, FAA TSO/STC approved, 3 year warranty. All probes, harness, and hardware included. Data Recording - All EDM-700 and EDM-760 systems come with data recording and provide long term trend monitoring for maintaining ultimate engine health. Data Recording capability records and stores all displayed parameters and, at a later time, transfer the info to a palmtop or laptop PC. Retrieve all the data stored in the EDM-700 and 760 or only the new data recorded since your last retrieval. In either case, no data is erased in the EDM unit. PC program supplied with the unit will graph the data for display and use by other programs, such as MS Excel or Lotus 123. EDM-700 or 760 Data Recording contains a date and time clock. You may also program an aircraft ID, such as your aircraft registration no. or your name that will appear in the output data file.

Systems include EGT & CHT probes, harness, memory module, leads, and hardware

EDM SINGLE ENGINE SYSTEMS

Description	Part No.	Price
EDM-700-4C 2-1/4" (No Fuel Flow)	10-00262	$1,488.00
EDM-700-4C 3-1/8" (No Fuel Flow)	10-02008	$1,679.00
EDM 700-4C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-00263	$1,914.00
EDM-700-4C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-02009	$2,106.00
EDM 700-4C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02845	$1,998.00
EDM 700-4C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02849	$2,133.00
EDM-700-6C 2-1/4" (No Fuel Flow)	10-00264	$1,928.00
EDM-700-6C 3-1/8" (No Fuel Flow)	10-02012	$2,098.00
EDM 700-6C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-00265	$2,354.00
EDM 700-6C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-02013	$2,518.00
EDM 700-6C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02844	$2,458.00
EDM 700-6C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02846	$2,516.00
EDM-700-8C 2-1/4" (No Fuel Flow)	10-28095	$2,697.00
EDM-700-8C 3-1/8" (No Fuel Flow)	10-02016	$2,568.00
EDM 700-8C with Fuel Flow 201 2-1/4" (Fuel Pump)	10-02852	$2,962.00
EDM 700-8C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-02017	$2,981.00
EDM 700-8C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02853	$2,962.00
EDM 700-8C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02841	$2,979.00
EDM-700-9C 2-1/4" (No Fuel Flow)	10-28100	$2,967.00
EDM-700-9C 3-1/8" (No Fuel Flow)	10-02018	$2,803.00
EDM 700-9C with Fuel Flow 231 2-1/4" (Gravity Fed)	10-02862	$3,213.00
EDM 700-9C with Fuel Flow 231 3-1/8" (Gravity Fed)	10-02842	$3,210.00
Trade-in Price for EDM 700. Basic Gem, (Use old System wire harness and EGT/CHT/TIT Probes)	10-03611	$1,133.00

Accessories

Description	Part No.	Price
EDM 700 Transducer (Fuel Pump)	10-27089	$335.75
EDM 700 Transducer (Gravity)	10-27094	$335.75
JPI EDM RPM Option	10-01720	$263.95
Fuel Flow Without Transducer	10-05199	$276.95
Fuel Flow With Transducer	10-05201	$492.00
JPI Replacement Rpm Sensor For Pressurized Slick Mag	10-05458	$360.00
JPI Replacement Rpm Sensor For Pressurized Bendix 1200 S	10-05459	$359.00
JPI Replacement Rpm Sensor For Pressurized Bendix 20 Series	10-05460	$360.00
JPI Replacement Rpm Sensor For Pressurized Dual Bendix Mag	10-05461	$360.00
JPI Standard RPM Vent Plug Sensorfor Bendix Mag.	10-05651	$255.95
JPI Standard RPM Vent Plug Sensor For Slick	10-05652	$255.95
TIT,Turbine Inlet Temperature Probe and Sensor	10-27090	$169.75
EDM Carb Temp Probe 1/4-24 Thread 400128	10-27103	$166.95
USB Integrated Option	11-06769	$210.95
USB Download Box	10-03149	$171.75
EDM-700/800/900 OAT Probe	10-27095	$169.75
700/760/800 Oil Temperature Probe & Sender	10-27100	$166.95
EDM 700 Induction Air Temperature Probe	10-02277	$167.95
EDM 700 Compressor Discharge Temperature Probe	10-02278	$165.95
EDM 700 IAT/CDT Induction Air & Compressor Temp.	10-27105	$164.75
5050-T CHT Bayonet Probe	10-18500	$103.95
M-113 CHT Gasket Probe	10-27093	$103.85
JPI Probe M113-3/8	10-03689	$104.95
M-111 Replacement EGT Probe	10-00830	$104.95
5/8" Oil Temp Probe Adapter for Lyc./Cont.	10-05115	$39.75
1/4" Oil Temp Probe Adapter for Lyc./Cont.	10-05114	$193.75
Oil Temp Probe 400509 (5/8-18)	11-09614	$178.95
EDM Option CHT Gasket 14mm Probe	10-04157	$106.75
VDO Pressere Sender (V) 0-160 PSI	10-04183	$254.95
EDM PC Interface Cable	10-27112	$36.75
EDM HP Interface Cable	10-27111	$36.75

All Systems which include Fuel Flow come with Transducers. 201 Transducer is for Aircraft with Fuel Pumps. 231 Transducer is for Gravity Fed Aircraft.

BASIC EDM-760 TWIN ENGINE SYSTEMS

The value of Digital engine temperatures for precision engine monitoring is well documented. JPI has merged the Analog and digital information into one gauge. The EDM-760 monitors 29 channels of information with 14 columns of analog information. All EDM's have a built in voltmeter monitoring high and low system voltage. All the enhancements found on the single engine EDM-700 are available in the Twin engine EDM-760, including: Digital display of OAT, TIT, OIL, CARB, IAT, CDT, and EGT/CHT, Shock Cooling displayed in degrees per minute with alarms, Normalize Mode levels the bar graph display for instant identification of engine trends during cruise, Automatically finds first cylinder to peak on each engine. EDM-760 is shipped complete including everything necessary for installation. The package contains Quick response EGT probes, Bayonet CHT probes w/wiring harness, memory module, insulating sleeves, terminals w/mounting screws. Options like Oat, Oil & CDT/IAT are available and can be added later. 3 year warranty on electronics. Size: 3-1/8" display with 14 columns, installed weight = 6 lbs. RS-232 Output port and 1 TIT function are included in the system.

Description	Part No.	Price
EDM-760-6C 3-1/8" (No Fuel Flow)	10-28080	$4,226.00
EDM-760-6C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-00640	$5,082.00
EDM-760-4C 3-1/8" (No Fuel Flow)	10-28085	$3,326.00
EDM-760-4C with Fuel Flow 201 3-1/8" (Fuel Pump)	10-00639	$4,220.00

ACCESSORIES

Description	Part No.	Price
EDM PC Interface Cable +	10-27112	$36.75
EZ Trends (Free with new instrument)	10-27113	$69.00
Fuel Flow Without Transducer	10-05199	$276.95
Fuel Flow With Transducer	10-05201	$492.00

JPI EDM-740 INSTRUMENTATION SYSTEM

Functions included on EDM-740: All in One Engine Instrumentation that works. Start saving fuel today with JPI's exclusive Over lean (LOP) feature. All functions also show up in large digital display. Same as the EDM-830 plus now with Fuel Level and Fuel Pressure. User selectable landscape or portrait mode. For experimental aircraft only.

RPM Propeller, MAP Manifold Pressure, % HP Percent of Horse Power, EGT Exhaust Gas Temp., CHT Cylinder Head Temp, O-T Oil Temperature, O-P Oil Pressure, OAT Outside Air Temp., VDC Voltage, GPH Gallons per Hour, REQ Required to destination, USD Fuel used, H:M Endurance, MPG Miles per Gal, CLD Shock Cooling on all cylinders, DIFF Gami spread, USB Memory stick Data Recording, EZTrends Graphing program

Optional functions:TIT Turbine Inlets Temp., F-P Fuel Pressure, CDT Compressor Discharge., AMP Current amps, CRB Carburetor Temp , L-Tank Fuel Quantity, level, R-Tank Fuel Quantity, level

EDM 740 4C Experimental.....P/N 10-05188.....$2,880.00
EDM 740 6C Experimental.....P/N 10-05189.....$3,105.00
EDM 740 9C Experimental.....P/N 10-05222.....$4,974.00

IN

JPI EDM-730/830

The EDM-730/830 revolutionizes engine monitoring by the integration of brilliant full color graphical LCD display with the extremely popular EDM 700/800 series functionally and yet reduces the package size to the smallest on the market! The EDM-730 packs more features, functionality, and information onto its large full color screen than any other monitor available and features larger characters for easier reading. Oil pressure has also been added to the entire EDM series line. Mounting is a breeze due to its standard 3-1/8" format.

Model	Part No.	Price
EDM-730-4Cyl	10-03701	$1,995.00
EDM-730-4C W/ FF 201	10-03717	$2,395.00
EDM-730-4C W/ FF 231	10-03718	$2,409.00
EDM-730-6C	10-03703	$2,585.00
EDM-730-6C W/ FF 201	10-03719	$3,099.00
EDM-730-6C W/ FF 231	10-03720	$3,099.00
EDM-730-7C	10-05180	$2,836.00
EDM-730-7C W/ FF 201	10-05181	$3,260.00
EDM-730-7C W/ FF 231	10-05182	$3,260.00
EDM-730-8C	10-05183	$3,221.00
EDM-730-8C W/ FF 201	10-05184	$3,640.00
EDM-730-8C W/ FF 231	10-05198	$4,780.00
EDM-730-9C	10-05187	$3,627.00
EDM-730-9C W/ FF 201	10-05185	$4,776.00
EDM-730-9C W/ FF 231	10-05186	$4,013.00
EDM-830-4C W/ FF 201	10-03721	$3,495.00
EDM-830-4C W/ FF 231	10-03723	$3,646.00
EDM-830-6C W/FF 201	10-03724	$3,709.00
EDM-830-6C W/FF 231	10-03725	$3,698.00
EDM-830-7C W/ FF 201	10-05190	$4,553.00
EDM-830-7C W/ FF 231	10-05191	$4,553.00
EDM-830-8C W/ FF 201	10-05192	$4,857.00
EDM-830-8C W/ FF 231	10-05193	$4,857.00
EDM-830-9C W/ FF 201	10-05194	$5,193.00
EDM-830-9C W/ FF 231	10-05195	$5,193.00
Fuel Flow Without Transducer	10-05199	$276.95
Fuel Flow With Transducer	10-05201	$492.00

UPGRADE YOUR EDM 700 TO THE EDM 730, OR YOUR EDM 800 TO THE EDM 830

This upgrade program will allow you to swap out your 700 to the new 730 or 800 to the new 830 as the new 730 and 830 use a standard 3-1/8" mounting hole. The 730/830 will use the same JPI probes and will better display engine parameters with this plug and play upgrade. Core must be sent back to JPI.

Description	Part No.	Price
EDM 700 to EDM 730	10-03863	$1,199.00
EDM 800 to EDM 830	10-03864	$1,199.00

EDM 930 & 930T PRIMARY

True TFT Transflective Custom Display - Display brightness increases with ambient brightness, always sunlight readable. All gages have a Variable Scale and alarm limit to fit your engine. New form factor, panel size: 6"w X 4"h X 2.9"d. Records all engine parameters at 2 to 255 second intervals. Plot the data with EZplot. All probes and transducers supplied. High Flow transducer (120 GPH) included in EDM930T Compatible with and transmits RS-232 data to most MFD's, also sold less the display.

PISTON FUNCTIONS: • Tachometer/Hobbs • Manifold Air Press • 6 EGT/CHT • Oil Temp. • Oil Press • Fuel Quantity • Fuel Press • OAT • Carb. • Temp • TIT, TIT-2 • CDT • GMT • Votls/Amps 1-2 • Differential EGT • Shock cooling • GPH • Fuel remaining • Fuel Endurance • Fuel required to GPS waypoint • Fuel used • Percent of horse power • Receives data from any GPS and transmits data to any GPS.

FAA TSO PRIMARY

Description	Part No.	Price
JPI EDM-930 (4)Cylinder Primary STC No Tank System	10-04909	$5,715.00
JPI EDM-930 (4) Cylinder Primary STC 2 Tank System	10-02111	$6,086.00
JPI EDM-930 (4) Cylinder Primary STC 4 Tank System	10-04731	$6,781.00
JPI EDM-930 (6) Cylinder Primary STC No Tank System	10-04911	$6,215.00
JPI EDM-930 (6) Cylinder Primary STC 2 Tank System	10-02112	$6,279.00
JPI EDM-930 (6) Cylinder Primary STC 4 Tank System	10-04732	$7,259.00
JPI EDM-930 (7) Cylinder Primary STC	10-02632	$7,893.00
JPI EDM-930 (8) Cylinder Primary STC	10-02633	$8,172.00
JPI EDM-930 (9) Cylinder Primary STC	10-02634	$10,082.00

EXPERIMENTAL PRIMARY

Description	Part No.	Price
EDM-930-4CP-0 (4 Cyl) for NO Tanks Experimental	10-05236	$5,572.00
EDM-930-4CP-2 (4 Cyl) for 2 Tanks Experimental	10-05237	$5,887.00
EDM-930-4CP-4 (4 Cyl) for 4 Tanks Experimental	10-05238	$6,584.00
EDM-930-6CP-0 (6 Cyl) for NO Tanks Experimental	10-05239	$6,063.00
EDM-930-6CP-2 (6 Cyl) for 2 Tanks Experimental	10-05240	$6,388.00
EDM-930-6CP-4 (6 Cyl) for 4 Tanks Experimental	10-05241	$7,071.00
EDM-930-7CP (7 Cyl) for 4 Tanks Experimental	10-05242	$7,430.00
EDM-930-8CP (8 Cyl) for 4 Tanks Experimental	10-05243	$7,687.00
EDM-930-9CP (9 Cyl) High Flow Transducer Experimental	10-05244	$9,479.00

JPI EDM 800 DIGITAL/ANALOG SCANNERS WITH AUTOMATIC HORSEPOWER COMPUTING

The EDM-800 instrument has all the advanced functions of the EDM-700, but incorporates some new features that can only be found on JPI products. No longer do pilots have to waste time looking up and guesstimating the present percentage of horsepower (HP). There are new easily readable digits located at the top of the EDM display which continually show the percentage of horsepower being used, and can also display RPM. What is truly unique about this new feature is that it can also display HP over lean. HP can be displayed for either carbureted or injected engines, even if they are turbocharged. Now you can be sure that you are within the horsepower limits of your engine, and in IFR conditions, this can be quite a task. At the present time HP is only available on single engine 4 and 6 cylinder engines. The EDM-800 calculates percent of horsepower in an Over lean condition. Lycoming & Continental horsepower charts stop at peak EGT on the first cylinder to peak. Gami has developed a method of going over lean on all cylinders. When you are over lean, every ounce of fuel is burned and used to create horsepower and heat. Cooling is accomplished by excess air in the combustion chamber. JPI has developed an algorithm to calculate horsepower based on fuel consumption and other factors. To obtain HP in this over lean condition you must have an EDM-800 engine analyzer which includes fuel flow, RPM, MAP, OAT, Memory and Gami tuned injectors. In addition to JPI's HP function, the EDM-800 also has a Memory Module that can store up to 25 hours of engine data, which can be downloaded to a laptop or palmtop PC. When using the memory function, all functions of the EDM will be recorded, including Fuel Flow and HP.

Description	Part No.	Price
EDM-800-4C w/Fuel Flow 201 2-1/4"(Fuel Pump)	10-02854	$3,360.00
EDM-800-4C w/Fuel Flow 201 3-1/8"(Fuel Pump)	10-02021	$3,360.00
EDM 800-4C w/Fuel Flow 231 2-1/4"(Gravity Fed)	10-02855	$3,360.00
EDM 800-4C w/ Fuel Flow 231 3-1/8"(Gravity Fed)	10-02843	$3,361.00
EDM-800-6C w/ Fuel Flow 201 2-1/4"(Fuel Pump)	10-02856	$3,970.00
EDM-800-6C w/Fuel Flow 201 3-1/8"(Fuel Pump)	10-02857	$3,922.00
EDM 800-6C w/Fuel Flow 231 2-1/4"(Gravity Fed)	10-02859	$3,970.00
EDM 800-6C w/Fuel Flow 231 3-1/8"(Gravity Fed)	10-02858	$3,922.00

J.P. INSTRUMENTS EDM-960

The EDM-960 is the latest graphic engine analyzer for Piston Engine Twins from JP Instruments. The EDM-960, STC'd as Primary engine instrument, takes the best from their EDM-760 and adds total engine display monitoring including Tach, % Horsepower, Hobbs, Manifold Pressure, EGT, CHT, Oil Pressure, Oil Temp, Fuel Flow, Outside Air Temp, Volts, and Amps plus optional Fuel Pressure, Fuel Quantity, and Turbine Inlet Temp. Each individual engine display has a scale and alarm limit to fit your particular airplane. As with the popular EDM-760, the EDM-960 has internal memory that records all engine parameters that can be recalled and displayed on your computer to keep track of the health of your engine. Plus: warnings for shock cooling and excess temperatures, leaning assist for both "lean of peak, and "rich of peak".

Description	Part No.	Price
JPI EDM-960-6C Twin	10-03726	$17,608.00
JPI EDM 960-6C Twin 4 Tank System	10-04734	$18,546.00
JPI EDM 960 6C No Tanks	10-04914	$16,952.00
JPI EDM-960-4C Twin	10-03727	$14,298.00
JPI EDM 960-4C Twin 4 Tank System	10-04733	$17,307.00
JPI EDM 960 4C No Tanks	10-04913	$15,570.00
JPI EDM-960-7C Twin	10-05202	$19,169.00
JPI EDM-960-8C Twin	10-05196	$19,683.00
JPI EDM-960-9C Twin	10-05197	$20,138.00
JPI Type K Thermocouple Wire	10-18600	$1.25

JPI FUEL COMPUTERS

J.P. INSTRUMENTS SLIM LINE DIGITAL ENGINE INSTRUMENTS

These compact engine instruments from have a bright red display and feature central remote and individual alarms on all gauges. The gauges are easily stackable in a homebuilt aircraft panel, and come complete with sensors. Specify voltage. NOT FAA APPROVED.

Tachometer - Features quartz crystal and accuracy of 1 RPM. Resolution is 10RPM and includes red line alarm. Specify engine and magneto models, number of cylinders, voltage, and red line.
P/N 10-24900 ..... $420.75

Manifold Pressure - Features resolution of 0.1 inches mercury, accuracy of 0.1" Hg, solid state sensor, and over boost alarm. Range: 0-50".
P/N 10-24910 ..... $297.50

Outside Air Temperature (O.A.T.) - Features resolution of 1° and has range of -40 to 195°F. P/N 10-24940 ..... $250.75

Oil Temperature - Features resolution of 1° and over temperature alarm of 235 F. P/N 10-24960 ..... $250.75

Volt/Ammeter - Features resolution of 0.1 volts/amps and discharge alarm.

Volt/100 amp-14V ..... P/N 10-24920 ..... $250.75
Ammeter Shunt - (100 Amp) ..... P/N 10-24925 ..... $63.75
Volt/100 amp-28V ..... P/N 10-24921 ..... $250.75

Oil Pressure - gives readout in PSI and features resolution of 1 PSI and an under pressure alarm. P/N 10-24930 ..... $250.75

Turbine Inlet Temperature (T.I.T) - Features resolution of 1° or 10° and a Hi-temperature alarm at 1650° F.
P/N 10-24950 ..... $250.75

Fuel Pressure - Features Resolution of 1 PSI and under pressure alarm.

Slimline Injected 10-32 PSI ..... P/N 10-24970-30A $250.75
Slimline Carb 1-8 PSI ..... P/N 10-24970-30B $335.75

JPI DIGITAL EGT/CHT SCANNERS

The Classic Scanner is perfect for any plane, especially for those pilots with a smaller budget. This scanner has proven reliance and durability compares with no other on the market. Kit plane builders love its reliability and durability for a great price. A large red LED display makes your engine monitoring flawlessly accurate, as the instrument scans through each cylinder of your plane's engine. EGT and CHT are both available and alarms are standard on this one. Temperature can also be monitored in degrees Fahrenheit or Centigrade, and the Scanner uses super accurate fast response probes. The Scanner also can let you know about shock cooling before its too late! The Scanner is FAA TSO approved and comes with a one year limited warranty.

Description	Part No.	Price
4 Cylinder	10-02924	$1,095.00
6Cylinder	10-02927	$1,265.00

ACCESSORIES / OPTIONS

Description	Part No.	Price
Fuel Flow Harness	10-04650	$215.95
Turbine Inlet Temperature TIT w/cable	10-27090	$169.75
Oil temperature probe w/cable - Lycoming	10-27100	$166.95
Outside Air Temperature OAT w/cable	10-27095	$169.75
Carburetor probe w/cable	10-27103	$166.95
Extra CHT Probe	10-18500	$103.95
Extra EGT Probe	10-00830	$104.95
Thermocouple Extension Wire Teflon (Sold by the foot)	10-18600	$1.25

J.P. INSTRUMENTS FUEL SCAN –450

- Continuous display of fuel burned,in upper display in Gallons per Hour. Liters and Lbs per hr also available.
- An amazingly low price includes Instrument harness and a Flow Scan 201 or 231 transducer.
- Upgrade your old Hoskins, or Shadin System. Will function with any K factors; connector is pin to pin compatible.
- Automatically calculates the K factor.
- All programming done from the front panel.
- Size 2.25" diameter (small hole)
- Light Weight 5 oz with Super Thin 1.5" depth
- Three year warranty. (yes, the only three year warranty around!)
- Serial port sends and receives data from all GPS units, even handhelds.
- Calculates fuel to next waypoint.

FS 450 Scanner Fuel Pump ..... P/N 10-00135 ..... $525.00
Fuel Scan 450 Gravity Fed+ ..... P/N 10-00134 ..... $525.00
FS-450R Fuel Scan Rotax (2 Transducers for aircraft with return fuel line) ..... P/N 10-00266 ..... $934.00
FS-450M-3 3-1/8" Twin Engine ..... P/N 10-03692 ..... $1,002.00
CALL FOR SPECIAL PRICE!

JPI EDM-900 SINGLE ENGINE PRIMARY

The EDM-900 has a built in EDM-800, plus many other gauges in combination together. Fits in a standard 3" hole no panel rework. Made in California. EDM-900 System Includes: EDM-900 ALL IN ONE Bright VGA Display, Pre-Wired Harness for all functions, All EGT/CHT probes, Oil Pressure Transducer, Oil Temperature Sensor, Fuel Pressure Transducer, Oat Sensor, RPM Sensor, One required, Manifold Pressure Transducer, 100 amp Shunt (2) (for Amps), Volts pick-up V-1 and V-2, 2 GB memory Download/upload stick, FloScan Fuel Flow Transducer w/firesleeve, Demo DVD, and 3 year warranty.

FAA STC APPROVED.

Description	Part No.	Price
900-4CP-0 (4 Cyl) for NO tanks Primary	10-04857	$3,791.00
900-4CP-2 (4 Cyl) for L/R 2 tanks setup complete Primary	10-04858	$3,675.00
900-4CP-4 (4 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04859	$4,223.00
900-6CP-0 (6 Cyl) for NO tanks Primary	10-04860	$3,922.00
900-6CP-2 (6 Cyl) for L/R 2 tanks setup complete Primary	10-04861	$4,075.00
900-6CP-4 (6 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04862	$4,570.00
900-7CP-4 (7 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04863	$4,853.00
900-8CP-4 (8 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04864	$5,166.00
900-9CP-4 (9 Cyl) for L/R and Aux 4 tanks setup complete Primary	10-04865	$5,499.00
900-D May be used to display parameters in a second location	10-04866	$1,858.00

EXPERIMENTAL

Description	Part No.	Price
EDM-900-4CP-0 (4 Cyl) for NO Tanks	10-05226	$3,565.00
EDM-900-4CP-2 (4 Cyl) for 2 Tanks	10-05227	$3,623.00
EDM-900-4CP-4 (4 Cyl) for 4 Tanks	10-05228	$3,971.00
EDM-900-6CP-0 (6 Cyl) for NO Tanks	10-05229	$3,703.00
EDM-900-6CP-2 (6 Cyl) for 2 Tanks	10-05231	$3,908.00
EDM-900-6CP-4 (6 Cyl) for 4 Tanks	10-05232	$4,301.00
EDM-900-7CP-4 (7 Cyl) for 4 Tanks	10-05233	$4,559.00
EDM-900-8CP-4 (8 Cyl) for 4 Tanks	10-05234	$4,847.00
EDM-900-9CP-4 (9 Cyl) for 4 Tanks	10-05235	$5,173.00

JPI EDM 711 SYSTEMS

4 or 6 Cylinder. Configured like the EDM-700 or EDM-800, this is STC'd as the Primary Replacement for certified aircraft. Includes one primary function; CHT, Oil Temp, or T.I.T. To add a function, select P/N 10-00647, 10-00648, or 10-00649. Fuel Flow may also be added (P/N 10-00650), but the Transducer is sold separately.

Use P/N 10-27089 or 10-27094 for Transducer. When ordering, please provide Aircraft Make & Model, Engine Make & Model, Mag Type, and Redline for each function.

Description	Part No.	Price
EDM711-4C (configured as 700)	10-00641	$1,895.00
EDM711-6C (configured as 700)	10-00642	$2,367.00
EDM711-4C (configured as 800)	10-00643	$3,294.00
EDM711-6C (configured as 800)	10-03858	$3,557.00
Add Primary Functions to EDM711	10-00647	$297.95
Add Oil Temp Function to EDM711	10-00648	$299.95
Add Fuel Flow to EDM711	10-00650	$448.00
Fuel Flo Harness	10-04650	$215.95
EDM 4 Cyl. Harness	10-04661	$189.95
EDM 6 Cyl Harness	10-04663	$329.00

IN

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

INSIGHT ENGINE MONITORS

GRAPHIC ENGINE MONITOR 602/603 UPGRADES

Graphic Engine Monitor - STC'd Single Engine - Normally Aspirated 4 or 6 Cylinder. The GEM 602 is designed for use with all 4 or 6 cylinder piston engine aircraft. The instrument graphically displays up to 12 critical engine temperatures in a single instrument in an easy-to-read bar- graph format on a brilliant plasma display.

Model No.	Part No.	Description	Price
610-C262-U	10-04932	Insight 4C or 6C Upgrade GEM to G2	$1,684.00
610C-363-U	10-05261	Insight 4C or 6C Upgrade GEM to G3	$2,595.00
610-C-463-U	10-05267	Insight 4C or 6C Upgrade GEM to G4	$3,295.00
1210C-063-U	10-04699	Insight 4C or 6C Upgrade Gemini 1200 to G4 Twin	$4,767.00
1210-C-063-2-U	10-05271	Insight 4C or 6C Upgrade to G4 Twin	$1,975.00

GEM PROBES

GEM 602 Wire Harness ..... P/N 10-03576 ..... $199.00
#2870 EGT Probe ..... P/N 2870 ..... $99.95 /ea.
#2852 CHT Spring Probe ..... P/N 2852 ..... $99.95 /ea.
#2853CHT Gasket Probe ..... P/N 10-00827 ..... $96.75 /ea.
#2855 CHT Adapter Probe* ..... P/N 2855 ..... $182.75 /ea.
#2856 CHT Probe** ..... P/N 2856 ..... $177.95/ea.
*Use with factory spring probe **Use with 3/8 x 24 threaded factory probe

MGL E3 UNIVERSAL ENGINE MONITOR

The E3 universal engine monitor combines in one compact 2.25" format instrument all that is needed to monitor most smaller aircraft engines from two-stroke ultralight engines to medium sized four strokes such as from Rotax, Continental and Lycoming. Also most automotive engine conversions can benefit from the use of the E3 engine monitor. P/N 11-06442 ..... $280.00

INSIGHT G3 GRAPHIC ENGINE MONITOR

The original GEM was a solitary player. The G3 instrument has two control knobs that operate combination rotary and push button switches. The top knob in general controls screen selection while the bottom knob controls items within the given screen. Each screen assigns its own functional needs to the controls that may change depending on context. A screen may also label the controls with guidance information like "Push to exit". The G3 is also designed to expand and grow with the times. Less than half of its true potential has been released at this time. The instrument can be updated to acquire new features by loading the SD card via the internet. Another great feature is why not have the G3 instrument diagnose itself? Then you don't have to disassemble the airplane or even touch the wiring. The probe diagnosis page indications are in green for normal readings and red for readings that fail the criteria set at the bottom of the screen. System Monitors: EGT, CHT, Fuel Flow, RPM, Manifold Pressure O, il Temp/Pressure, OAT, TIT, Carb Temp, HP%, Prop Balance, Clock/Calendar

Description	Part No.	Price
Insight GEM G3 4C Single Engine	10-03195	$3,029.00
Insight GEM G3 4C Single Engine Dual Turbo	10-05262	$3,345.00
Insight GEM G3 4C Single Engine Turbo	10-04685	$3,196.00
Insight GEM G3 6C Single Engine	10-03196	$3,233.00
Insight GEM G3 6C Single Engine Dual Turbo	10-05263	$3,295.00
Insight GEM G3 6C Single Engine Turbo	10-04686	$3,395.00

INSIGHT TRUE FLOW 500

A new concept in fuel flow computers, True Flow 500 is designed to give pilots a simple and efficient way of reading fuel information directly on the GPS fuel pages. Eliminates tedious installation and set-up proce and set-up proceuredures that are required for other fuel flow computers. Install True Flow 500 on top of the engine and connect fuel lines, GPS power, ground and RS232 RX input. Works on fuel infected or carburated engines, but not on carburated engines with a fuel return line. Many other STC's for installation on certificated aircraft. Unit is TSO'd for Beechcraft Aircraft Only. P/N 11-01913 ..... $748.00

INSIGHT G1 SINGLE ENGINE COLOR MONITOR - COMPLETE SYSTEM

Single Engine - 2.25 Bezel
Protect Your Engine By: • Saving Fuel On Every Flight By Leaning Accurately And Safely • Revolutionary New Leaning Process • See Lean Peak In Order And Temperature Spread • Seeing Simultaneous EGT, CHT, TIT Bars And Temperatures • Save Time Trouble-Shooting • Continuous Probe Diagnosis That Confirms System Integrity • Extensive List Of Primary Approved Aircraft Models • SD Card Software Updates • FAA & TC Primary STC • EGT, CHT, & TIT
Also available with Carburetor Temperature and/or for G1 Field Update Kit, see Accessories.

Description	Part No.	Price
Insight G1 4C Single Engine	10-04916	$1,235.00
Insight G1 4C Single Engine Turbo	10-04918	$1,365.00
Insight G1 6C Single Engine Turbo	10-04919	$1,495.00
Insight G1 Head Only	10-04921	$1,034.00

INSIGHT G2 SERIES SINGLE ENGINE COLOR MONITOR - COMPLETE SYSTEM

G2 Series Single Engine Color Monitor - Complete System - 2.25 Bezel
Save Fuel, Save Money, Save Your Engine! Affordable Engine Monitoring you can't afford to be without.
Top reasons to install a G2: • Best lean of peak process in the industry • The only nozzle balance analysis, the key to lean of peak • The only probe diagnostic scree • Comprehensive data log - windows files SD card • Over the web software updates - constant improvement • GEM plug compatible - easy install • Best technical support

Description	Part No.	Price
Insight G2 4C Single Engine	10-04924	$2,093.00
Insight G2 4C Single Engine Turbo	10-04927	$2,223.00
Insight G 6C Single Engine	10-04926	$2,275.00
Insight G 6C Single Engine Turbo	10-04928	$2,405.00

GEMINI 1200 SYSTEM (TWIN ENGINE)

Graphic Engine Monitor -
Twin Engine - Normally Aspirated or Turbo-Charged with Data logging for 2, 4, 6, 7, 8 and 9 Cylinder.
Designed for twins, the GEMINI 1200 has all of the same advanced features as the GEM 610.
ALL NEW 1200 UNITS ARE FACTORY CALIBRATED.

Features:
- Display up to 30 temperatures.
- IAT Temperature.
- Side-by-side display of Left/Right or Front/Rear Engines.
- 4 digit readout of any EGT, CHT, TIT, OAT and IAT.
- Primary Instrument Replacement STC

Description	Part No.	Price
Insight Gemni 1200 4C Twin Engine	10-04924	$2,093.00
Insight Gemni 1200 4C Twin Engine Dual Turbo	10-04927	$2,223.00
Insight Gemni 1200 4C Twin Engine Single Turbo	10-04926	$2,275.00
Insight Gemni 1200 6C Twin Engine	10-04928	$2,405.00
Insight Gemni 1200 6C Twin Engine Dual Turbo		
Insight Gemni 1200 6C Twin Engine Single Turbo		

G4 GRAPHIC ENGINE MONITOR

The original GEM was a solitary player. The G4 will operate standalone too but will also interface with other data sources and report information to other instruments like MFD's. All of the devices the G4 connects to today didn't exist in '79. The G4 is also designed to expand and grow with the times. Less than half of its true potential has been released at this time. The instrument can be updated to acquire new features by loading the SD card via the internet. The G4 update takes only a second while the instrument remains mounted in the airplane.

Description	Part No.	Price
Insight GEM G3 4C Single Engine	10-04687	$3,675.00
Insight GEM G3 4C Single Engine Dual Turbo	10-05265	$4,125.00
Insight GEM G3 4C Single Engine Turbo	10-05264	$4,111.00
Insight GEM G3 4C Twin Engine	10-04690	$5,753.00
Insight GEM G3 4C Twin Engine Dual Turbo	10-05268	$5,895.00
Insight GEM G3 4C Twin Engine Turbo	10-04692	$5,995.00
Insight GEM G3 6C Single Engine	10-04688	$3,875.00
Insight GEM G3 6C Single Engine Dual Turbo	10-05266	$4,395.00
Insight GEM G3 6C Single Engine Turbo	10-04689	$4,378.00
Insight GEM G3 6C Twin Engine	10-04691	$6,068.00
Insight GEM G3 6C Twin Engine Dual Turbo	10-05269	$6,295.00
Insight GEM G3 6C Twin Engine Turbo	10-04693	$6,319.00

IN

UBG-16 ULTIMATE BAR GRAPH ENGINE ANALYZER

UBG-16 features include: Sixteen input channel capability. Any channel may be set to display EGTs and CHTs, TIT, and Oil Temp in either digital or bar graph display, O.A.T, Carb. Temp, Cowl Temp, Other Temp, Oil Pressure, Fuel Pressure, Manifold Pressure, Gyro Pressure, R.P.M.,Fuel flow, Bus Voltage or Amps. Engine Analysis is performed automatically with sixteen pilot programmable Over-Temp limits and sixteen Under-Temp limits, a differential limit and a shock-cooling limit.
Note: Unit is STC'd/PMA'd. Can only be used as a secondary engine monitor. For primary see the MVP-50.

Model	Description	Part No.	Price
UBG-16-4M	4-Cylinder Package. Includes 4 EGT probes, 4 CHT probes, 8 ea 6' harnesses and Data Recorder (MUX-8A)	10-00593	$1,488.00
UBG-16-6M	6-Cylinder Package. Includes 6 EGT probes, 6 CHT probes, 12 ea 6' harnesses, and Data Recorder (MUX-8A)	10-00594	$1,888.00
EGView	Software for analyzing downloaded software	10-01219	$125.00
Remote	UBG-16 Remote Head option.. Must be purchased at the same time as the UBG-16	10-02763	$113.75
UBG-16-4G-MEM	Electronics International Ubg-16 Engine Analyzer 4 Cylinder CHT Prime	10-01048	$1,488.00
UBG-16-6G-MEM	Electronics International Ubg-16 Engine Analyzer 6 Cylinder CHT Prime	10-01049	$1,888.00
UBG-16	UBG-16 Unit Only	10-02737	$959.00
UBG-16-REMOTE	EGT & CHT Remote Head Option 2-14" TSO'D. Must be purchased with unit. Cannot be purchased alone.	10-02763	$113.75

The UBG-16 input channels. Any of the following options can be added at any time. Each option uses 1 input channel unless otherwise noted.

Model	Options	Part No.	Price
FM -FLOW -180	FT-180: Fuel Flow Transducer (for very high flow rates), Stainless Steel, 3/4 - 16 (1/2" AN Male w/ 37' flare) 3.6 to 180 GPH, 1.78 PSI drop at 120 GPH, K Factor approx. 48,000, 9.6 Oz.	10-02764	$497.00
FM -FLOW -60	Flow Transducer Use w/ engine-driven fuel pumps up to 350 HP. 1/4" female NPT, .6-70+ GPH, .6 PSI drop @ 30 GPH, 2.3 PSI drop @ 60 GPH	10-25343	$329.95
FM -FLOW -90	TRANSDUCER For 350 to 550 HP engines or gravity-feed engines, 1/4" NPT, 2 to 125+ GPH, .05 PSI drop @ 20 GPH, .2 PSI drop @ 40 GPH.	10-02208	$329.95
FM -FLOW -P	FM-FLOW-P	10-03206	$348.95
10-0FM-FP	Secondary Fuel Pressure Includes PT-30GA Pressure Transducer. (Can be used with The UBG-16 and also with the FP-5L (Fuel Flow/Pressure w/ GPS Interface instrument)	10-25337	$249.00
FM-GYRO	Gyro Vacuum Includes Pressure Transducer.	10-25339	$224.95
FM-MP	Secondary Manifold Pressure Includes Pressure Transducer.	10-25338	$224.95
FM-OP	Secondary Oil Pressure Includes PT-100GA Pressure Transducer. (For use with UBG-16 or FP-5(L).	10-25336	$224.95
FM-RPM-4C	Secondary RPM Connects directly to the Mag Switch. (For use with UBG-16 or FP-5(L)	10-04818	$224.95
FM-RPM-6C	Secondary RPM Connects directly to the Mag Switch. (For use with UBG-16 or FP-5(L)	10-01786	$221.95
FM-TEMP-P-110	Egt Clamp Probe, 6 Cable	10-02188	$215.95
FM-TEMP-P-111	Tit Or Oil Temp Probe, 1/8 Npt, With Function Module	10-02765	$249.00
FM-TEMP-P-112	Tit Or Oil Temp Probe, 7/16-20 Thread 6 Cable	10-02766	$249.00
FM-TEMP-P-114	Tit Or Oil Temp Probe, 1/4" Npt 6 Cable	10-02767	$249.00
FM-TEMP-P-120	Oil Temp Probe, 5/8-18 Thread 6 Cable	10-02770	$249.00
FM-TEMP-P-128	OAT Or Carb Temp Probe 1/4-28 Thread 6 Cable	10-02769	$249.00
FM-VA	Secondary Volts/Amps w/S-50 Shunt Volts uses 1 input channel and Amps uses 1 input channel (i.e., monitoring volts and amps require the use of two of the UBG-16's input channels.	10-25342	$209.95
FM-VA-3	MVP And UBG Option 3 Input Volt Monitor	10-04841	$179.00
KEYSPAN	Keyspan Serial To USB Adapter	10-04978	$36.55

E.I. INSTRUMENTS

10-01355

10-01339

10-01348

10-01373

The entire line of Electronics International digital instruments offers precise readings at exceptional prices. All gauges are accurate to 1%. They are FAA-approved under STC No. 1626NM. Furnished complete with all probes & leads.

Single Engine	Description	Part No.	Price
E-1	Single-Channel EGT or CHT, STCd, TSOd, PMA'd 2 1/4" Mount, 2.5" Depth, 12 Oz. Kit,	10-01355	$279.00
C-1		10-01338	$279.00
T-1P	EGT, CHT or TIT, PRIMARY REPLACEMENTS STCd, TSO'd, PMA'd w/ Over-Temp Warning Light, 2 1/4" Mount, 2.5" Depth, 12 Oz.	10-01373	$307.95
E-1P		10-02762	$319.95
C-1P		10-01339	$309.00
EC-1	Switchable from EGT to CHT (1 of ea), STCd, TSOd & PMAd. 2 1/4" Mount, 2.5" Depth, 16 oz	10-01358	$362.00
EAC-1	STCd, TSOd, PMAd. - EGT/OAT/CHT Ice Zone Warning Light (from 10 to 39 degrees Celsius),	10-00806	$427.00
CA-1	STCd, TSOd, PMAd - CARB TEMP/OAT w/ Ice Zone Warning Light. (from 10 to 39 degrees Celsius)	10-01351	$339.00
A-1	OAT w/ Ice Zone Warning Light, STCd, PMAd, TSOd (light comes on between 10 and 39 degrees F).	10-01307	$249.95
E-4	EGT and CHT instruments, STCd, TSOd and PMAd. Four Channels (EGT or CHT)	10-01356	$557.00
C-4		10-01348	$557.00
E-6	EGT and CHT instruments, STCd, TSOd and PMAd Six Channels	10-01357	$649.00
C-6		10-01350	$649.00
EC-1P	3-1/8" EC-1P One Channel EGT/CHT Primary	10-00807	$514.00
TC-1P	TC-1P Single Channel TIT/CHT Primary	10-02736	$505.00
FOR TWINS - Orders for following instruments MUST specify type of probes: EGT hose clamp, TIT (hose clamp, 1/8" NPT, 1/4" NPT or 7/16 x 20). CHT, and OverTemp Limits.			
EE-1P	Dual Display EGT (1 L & 1 R), Over-Temp Lights, 3-1/8" mount	10-01447	$599.00
CC-1P	Dual Display CHT (1 L & 1 R), OverTemp Lights, 3-1/8" mount	10-02735	$598.00
TT-1P	Dual Display TIT (1 L & 1 R), OverTemp Lights, 3-1/8" mount	10-02733	$600.00
EC-1PT	Dual Display 1 EGT & 1 CHT w/ OverTemp Lights, 3-1/8" mount	10-02731	$599.00
TC-1PT	Dual Display 1 TIT & 1 CHT w/ OverTemp Lights, 3-1/8" mount	10-02732	$585.00
FOR TWINS - Not Primary Replacement Instruments, but STCd, PMAd, TSOd. Same order requirements and specifications as above:			
E-2	(one display, switchable from left to right engine, either EGT or CHT)	10-00098	$498.00
C-2		10-01661	$491.95
EC-2	(one display, switchable from EGT, L/R and CHT L/R).	10-01359	$641.00
FL-1M	SIngle Fuel Level Instrument is NON STC Experimental Aircraft Only. Designed to work with E.I.'s Magnetic Float Sensor P-300M.	10-05084	$424.95
FL-1V	Variable Voltage Single Fuel Level Instrument is NON STC Experimental Aircraft Only. Specify Voltage Range requirements	10-05086	$424.95
FL-2M	Dual Fuel Level Instrument is NON STC Experimental Aircraft Only. Designed to work with E.I.'s Magnetic Float Sensor P-300M.	10-05085	$424.95
FL-2V	Variable Voltage Dual Fuel Level Instrument. NON STC Experimental Aircraft Only. Specify Voltage Range requirements	10-05087	$424.95
P-300M	Magnetic Float Sensor	10-05097	$319.00

SR-8A (SINGLE DISPLAY)

SR-8A ENGINE ANALYZER

STCd, PMAd - EGT's, CHT's TIT, Oil Temp, OAT, Carb. Temp + others, up to 8 channels. Manual and Auto Diagnostics (Scan) Modes. Auto Detects the hottest EGT or CHT. Factory-set EGT Over-Temp Limit (1650'F). Factory-set EGT Under-Temp Limit (1100'F). Factory-set CHT Over-Temp Limit (500'F). Differential Limit set from back panel (95'F or 195'F). Selectable Scan Rate + Number of Channels to be Scanned. 2 1/4" Mount. 5.35" Depth. 16 Oz. Instrument. 1' F Resolution. Accuracy; 1/2%. Superior Sunlight Viewability. Backlit. Operates from 7.5 to 35 volts @at .3 amps.

Model	Description	Part No.	Price
SR-8A	SR-8A Instrument only (no probes or cables)	10-25220	$425.99
SR-8A-4	4 Cyl. SR-8A Package w/ 4 p-110 EGT probes, 4 P-100 CHT probes, 8 ea 6' Cables (uses all 8 inputs)	10-00599	$916.00
SR-8A-6	6 Cyl. SR-8A Package w/ 6 P-110 EGT probes, 2 P-100 CHT probes, 8 ea 6' Cables (uses all 8 inputs)	10-00603	$915.00

US-8A, STCd / PMAd, ULTIMATE ENGINE ANALYZER

US-8A ULTIMATE ENGINE ANALYZER (DUAL DISPLAY)

Simultaneously displays EGT and CHT for Singles. (For Twins, call for model designation. May require two US-8As, depending on your requirements). Automatic Diagnostic Assist helps diagnose engine problems such as fouled plugs, burned valves, intake leaks, low compression, etc. Impressive Features Include: Auto Scan up to 16 temperature channels, Reprogrammable Temp Limits From the Front Panel (unavailable on competition's gauges in this category), Auto Detection of hottest EGT and hottest CHT + pilot-programmed Over-Temp and Under-Temp limits!, Programmable Scan Rate for each channel displayed (rather than competition making that decision for you). One Degree, STEADY Resolution! Only 6lbs., Standard 2-1/4" hole (or use an EI adaptor plate for 3-1/8" holes) Choose up to 16 probes (w/ cables): EGT, CHT, OAT, Carb Temp, Oil Temp

SINGLE-ENGINE US-8A PKG PRICES			
Model	Description	Part No.	Price
US-8A-4	4-cylinder engines without a Primary CHT gauge already installed. Includes 4 EGT probes, 4 CHT probes and 8 ea 6-ft harnesses	10-00595	$1,108.00
US-8A-4G	4-cylinder pkg for a/c w/ Primary CHT gauge already installed. Includes 4 EGT probes, 3 CHT probes, 1 P-102 Piggy Back CHT probe and 8 ea 6 ft harnesses	10-03283	$1,119.00
US-8A-6	6-cylinder pkg for a/c without a Primary CHT gauge already installed. Includes 6 EGT probes, 6 CHT probes & 12 ea 6-ft harnesses	10-00596	$1,350.00
US-8A-6G	6-cylinder pkg for a/c with a Primary CHT gauge already installed. Includes 6 EGT probes, 5 CHT probes, 1 P-102 Piggy Back CHT probe and 12 ea 6-ft harnesses	10-03284	$1,350.00
NOTE: The UBG-16 can accommodate to 16 probes (w/ cables): EGT, CHT, OAT, Carb Temp, and / or Oil Temp			
TWIN-ENGINE US-8A PKG PRICES:			
US-8A-4T	4-cylinder Twin pkg for a/c without Primary CHT gauges already installed. 4 EGTs L&R and 4 CHTs L&R. Includes 8 EGT probes, 8 CHT probes and 16 ea 20-ft harnesses.	10-00597	$2,025.00
US-8A-4G-T	4-cylinder Twin pkg for a/c with Primary CHT gauges already installed. 4 EGTs L&R and 4 CHTs L&R. Includes 8 EGT probes, 6 CHT probes, 2 P-102 Piggy Back CHT probes and 16 ea 20-ft harnesses.	10-00602	$2,025.00
US-8A-6-T	6-cyl Twin pkg (scans all EGTs L&R + 2 CHTs L&R). Includes 12 EGT probes (for 6 channels of EGT on both engines), 4 gasket CHT probes (for 2 channels of CHT on each engine), plus 16 ea 20-ft harnesses. (For more than 12 EGTs and 2 CHTs L&R, + add'l temps, order 2 US-8As)	10-00598	$2,025.00

E.I. DIGITAL/GRAPHIC INSTRUMENTS

These Digital/Graphic Instruments are solid state and hold their accuracy over time and a range of environmental conditions. The colorful Graphic Analog display emits green, yellow, or red lights enabling the pilot to spot problems immediately without interpreting a needle. Gauges mount in 2-1/4" instrument holes.

TACHOMETER - R-1, TACHOMETER: STCd, PMA'd and TSO'd as PRIMARY REPLACEMENT. Features a 210 degree graphic analog display with green, yellow, and red LEDs. Accurate 10 RPM resolution digital display. Flight Timer. Tach Timer. Peak RPM Recorder. Automatic Mag Drop Calculation. Connects to both "P" leads through isolators (no magnetic pick-ups required). 2 1/4" Mount. 3.65" Depth. 10 Oz. Unit. Superior sunlight viewability. Backlit. Operates from 7.5 to 30 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings..

P/N 10-25200..... $439.95

OIL PRESSURE/TEMPERATURE - OPT-1, OIL TEMP/PRESSURE: STC'd, PMAd and TSO'd as PRIMARY REPLACEMENT. OPT-1 features dual 90 degree graphic analog displays w/ green, yellow, and red LEDs. Accurate to 1 PSI and 1°F Resolution. External Oil Press and Temp Transducers (no oil in the cockpit). 2 1/4" Mount. 3.65" Depth. 22 Oz. Kit. Superior sunlight viewability. Backlit. Operates from 7.5 - 35 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings.

P/N 10-25205..... $499.00

MANIFOLD PRESSURE - M-1, MANIFOLD PRESSURE. STC'd, PMA'd & TSO'd as PRIMARY REPLACEMENT. 210 degree graphic analog display w/ green, yellow, and red LEDs. Accurate 1" Mercury Resolution digital display. Connects to std pressure line through 1/4" male flare union. 2 1/4" Mount. 3.65" Depth. 13 Oz. Unit. Viewable in direct sunlight. Backlit.. Operates from 7.5 to 30 volts @ .3 amps. Note: This instrument may come with labels on the faceplate rather than silkscreening, depending on you're a/c's required markings. P/N 10-25210..... $479.95

VOLTS/AMPS - VA-1A, VOLTS/AMP. STCd, PMAd as PRIMARY REPLACEMENT. Internal Shunt. Discharge @ High Voltage Warning Lights. 100 amp capability. .1 volt & .1 amp 1% Resolution. Accuracy: 2 1/4" Mount. 2.5" Depth. 9 Oz. Unit. Viewable in direct sunlight. Backlit. Operates from 7.0 to 40 volts @ .1 amp.

P/N 10-00809.....VA-1A (internal shunt).....$334.95

VA-1A-XX, VOLTS/AMP - STCd, PMAd as PRIMARY REPLACEMENT. (For use with External Shunt. Discharge and High Voltage Warning Lights. 100 amp capability (or order VA-1A-300 for 300-amp capability). .1 volt and .1 amp Resolution. Accuracy: 1%. 2 1/4" Mount. 2.5" Depth. 9 Oz. Unit. Superior sunlight viewability. Backlit. Operates from 7.0 to 40 volts @ .1 amp.

P/N 10-01378.....VA-1A-50 (S-50 external shunt) $365.00
P/N 10-01394.....VA-1A-300 (S-300 external shunt) $378.95
P/N 10-03207.....RSVA-3 Remote Switch $89.75

FP-5 FUEL FLOW + HORSEPOWER

PMAd and STCd - Same amazing Fuel Flow/Horsepower Instrument as our FP-5L, but without GPS interface. Features: • HORSEPOWER to 1% hp • FLOW Displayed in Gallons, Pounds, Liters or British Gallons. • AUTOMATIC K-Factor Calibration for UNSURPASSED • ACCURACY. • FUEL USED Displays "Used for Flight" and "Used Since Fill Up" • FUEL REMAINING Displays fuel remaining to 1/10 gallon. • SCAN MODES Manual and Automatic. • RECURRING FUEL USED ALARM Pilot Programmable! • AUXILIARY Channel To monitor one of the following options: EGT, OAT, Carb Temp, Oil Temp, Manifold Pressure, Gyro Vacuum, RPM, Volts or Amps • Pilot Two LOW FUEL ALARMS Pilot Programmable! • TIME TO EMPTY automatically calculated and displayed. Specs: 2-1/4" mount, 3.65" deep, 28 oz. pkg, Backlit, Superior Viewing in Sunlight, External Warning Line. Operates from 7.5 to 30 volts @ .3 amps.

Model	Description	Part No.	Price
FP-5	Instrument Only FUEL FLOW w/ HP (instrument only, no transducers)	10-25300	$528.00
FP-5-60	FUEL FLOW w/ HP w/ FT-60 flow xdr, up to 350HP, engine-driven fuel pump	10-25304	$499.00
FP-5-90	FUEL FLOW w/ HP, w/ FT-90 Flow Transducer, for aircraft w/ 350-550 HP or without an engine-driven fuel pump	10-00260	$511.00
FP-5-180	FUEL FLOW w/ HP, includes HIGH FLOW Transducer (for aircraft w/ more than 550HP)	10-03208	$1,021.00

FP-5L FUEL FLOW, PRESSURE, HORSEPOWER AND GPS PMAd & STCd PRIMARY REPLACEMENT INSTRUMENT

Positively the best Fuel Flow/Horsepower Instrument there is! Nothing else even comes close. The FP-5L's High-Powered Features Include: • HORSEPOWER, to 1 percent hp. No other fuel gauge provides this! • FLOW, displayed in Gallons, Pounds, Liters or British Gallons. • AUTOMATIC K-Factor Calibration for UNSURPASSED ACCURACY. • FUEL DISPLAYS: "Used for Flight", "Used Since Fill Up", "MPG", "Fuel Required to. • Destination", "Fuel Remaining", "Time to Empty." • SCAN MODES: Manual and Automatic. • RECURRING FUEL USED ALARM Pilot Programmable. • 2 LOW FUEL ALARMS Pilot Programmable w/ Red Warning LED. • FUEL REMAINING displayed to 1/10 Gal. • AUTOMATICALLY CALCULATES AND DISPLAYS "Time to Empty", "Fuel Req to Dest," and "Fuel Reserve.". Displays Nautical and Statute Miles per Gallon. Multiple Data Outputs & Inputs, Handhelds & Panel Mounts. One-of-a-kind AUXILIARY Channel can be used to monitor an additional function (choose one):EGT, TIT, CHT, OAT, Carb Temp, Oil Temp, Cowl Temp, Fuel Pressure, Gyro Vacuum, Manifold Pressure, Volts or Amps. Specs: 2-1/4" mount, 3.65" deep, 28 oz. pkg, Backlit for Night Operation, Superior Sunlight Viewability, External Warning Line. Operates from 7.5 to 30 volts @ .3 amps.

Models	Description	Part No.	Price
FP-5L	Fuel Flow w/ Horsepower & GPS input/output (instrument only; no transducers)	10-01217	$575.00
FP-5L/FT-60	Fuel Flow w/ Horsepower & GPS input/output with FT-60	10-05017	$689.95
FP-5L/FT-60/P	Fuel Flow w/ Horsepower & Pressure GPS input/output with FT-60	10-25310	$947.00
FP-5L/FT-90	Fuel Flow w/ Horsepower & GPS input/output with FT-90	10-05019	$775.00
FP-5L/FT-90/P	Fuel Flow w/ Horsepower & Pressure GPS input/output with FT-90	10-05018	$889.95
FP-5L-60	Fuel Flow w/ Horsepower & GPS input/output, includes FT-60 Flow Transducer	10-01045	$558.00
FP-5L-90	Fuel Flow w/ Horsepower & GPS input/output, includes FT-90 Flow Transducer	10-01050	$558.00

FP-5 & FP-5L AUXILLARY OPTIONS

The FP-5 & FP-5L feature an Auxiliary Channel. Any one of the following choices can be added to at any time.			
FFDM-1 w/ FT-60	FUEL FLOW Differential Module, for aircraft with a Pressure Carburetor. Includes FT-60 or FT-90 Flow Transducer to measure the returned fuel. Please specify FT-60 or FT-90. DOES NOT use up the FP-5's Auxiliary channel.	10-25325	$339.95
FFDM-1 w/ FT-90		10-03190	$329.95
FM-Temp-P-110	EGT hose clamp probe and 6' cable. Compensates HP reading when leaning.	10-02188	$215.95
FM-Temp-P-128	OAT or CARB Temp probe (1/4"-28 thread) and 6' cable	10-02769	$249.00
FM-Temp-P-120	Secondary OIL Temp probe (5/8"-18 thread) and 6' cable	10-02770	$249.00
FM-Temp-P-111	Secondary TIT or OIL Temp probe (1/8: NPT adjustable depth) and 6' cable	10-02765	$249.00
FM-Temp-P-112	Secondary TIT or OIL Temp probe (7/16-20 thread adjust. depth) and 6' cable	10-02766	$249.00
FM-Temp-P-114	Secondary TIT or OIL Temp probe (1/4" NPT adjust. depth) and 6' cable	10-02767	$249.00
FM-OP	Secondary OIL PRESSURE. Includes PT-100GA Pressure Transducer	10-25336	$224.95
FM-FP	Secondary Fuel Pressure. Includes PT-30GA Pressure Transducer	10-25337	$249.00
FM-MP	Secondary Manifold Pressure. Includes Pressure Transducer	10-25338	$224.95
FM-RPM 6C	Secondary RPM. Connects directly to the Mag Switch	10-01786	$221.95
FM-Gyro	Gyro Vacuum. Includes Pressure Transducer	10-25339	$224.95
FM-VA	Secondary Volts or Amps (one or the other) w/ S-50 amp shunt.	10-25342	$209.95
AV-17	Voice Annunciator. Connects through the Audio Panel or Intercom. The 1"x1" control panel mounts on your instrument panel. The 4.1"x 2.6"x 1.7" control box mounts under the instrument panel. See all Annunciator Panels on our "Accessories" page.	10-00181	$249.95

MVP-50P GLASS PANEL ENGINE & SYSTEM MONITOR

MVP-50P is Certified Primary Replacement. 5.55" x 5.15" x 2.4" Deep Engine and System Monitoring: The MVP-50P replaces over 15 Engine Instruments and 50 Functions in a single, full color, enhanced TFT glass display instrument. It features excellent viewability, even in direct sunlight. The MVP-50 is an unrivaled Engine and Aircraft System Monitor with an easy-to-read and easy-to-use format. There are Pilot-Programmable colors, ranges and limits and a voice alarm for each instrument displayed. Its "System Page" displays trims, flaps, wheel status lights, many system parameters and annunciators. This is the most powerful engine and system analyzer on the market, featuring the following displays: Bar Graph (with Scan and Hottest Cylinder modes), Rich-of-Peak, Lean-of-Peak, Full Digital, Normalized and Differential. The MVP-50P's instant red and yellow visual warnings, as well as voice annunciators for all Programmed Limits, eliminate the need to constantly scan an entire panel for possible problems. In-Flight Data: The MVP-50P provides many "Flight Data Screens" to reduce cockpit clutter and pilot workload. Some of these screens are: Fuel Management, Timers, Clocks and Date, Weight and Balance, Data Recording, Custom Checklists (Start, Taxi, Run-up w/ Mag Drop, Take Off, Landing, Emergency and more!), Custom Flight Plans, General Information (Aircraft Performance, Engine Diagnostics, VSI Lights, Airspeed, VFR Minimums, Altitude Table, Light Gun Signals, Transponder Codes, Frequencies, Real-Time Out (providing telemetry for UAV racers, etc.), plus additional Screens, including: Flight Log, Max Data Log, Min Data Log and others. And it's easy to create your own Custom Screens and download them to the MVP-50P through its USB port. Compatible with OP Technologies and Chelton. EGView Charting Software is also available for use with the MVP-50P. Other Functions Included: Help Screen; EGT & CHT Differentials; Shockcooling; Horsepower; Weight & Balance Data and Graph; GPS Interface and Data; Fuel Efficiency; Fuel Used for Trip; Fuel Used Since Fill Up; Time to Empty; Distance to Empty; Fuel; Time and Distance to Way Point; Fuel Reserve; Time Reserve; Distance Reserve; Up and Down Timers; Flight and Tach Timers; Engine Hours; Date; Local and Zulu Time; Voice Warnings; Data Recording: selectable .33 – 6 min., 665 hours @ 6 seconds!

Experimental	Description	Part No.	Price
MVP-50P-4	4-Cylinder Pkg	10-01192	$4,648.00
MVP-50P-6	6-Cylinder Pkg	10-01191	$5,098.00
MVP-50P-7	7-Cylinder Pkg	10-03174	$4,675.00
MVP-50P-8	8-Cylinder Pkg	10-03175	$5,443.00
MVP-50P-8W	8-Cylinder Water-Cooled Pkg	10-03178	$4,605.00

Experimental	Description	Part No.	Price
MVP-50P-9	9-Cyl. Radial Pkg	10-03176	$5,442.00
MVP-50P-12W	12-Cylinder Water-Cooled Pkg	10-03177	$4,715.00
MVP-50P-4-FADEC	4-Cyl. Aerosance Pkg	10-03173	$4,163.00
MVP-50P-6-FADEC	6-Cyl. Aerosance Pkg	10-03172	$4,163.00

Certified	Description	Part No.	Price
MVP-50P-4-C	4 Cylinder Certified	10-03867	$5,548.00
MVP-50P-6-C	6 Cylinder Certified	10-03868	$5,998.00
MVP-50P-8-C	8 Cylinder Certified	10-03869	$6,268.00
MVP-50P-4T-C	Twin 4 Cylinder Cert.	10-05083	$11,072.00
MVP-50P-6T-C	Twin 6 Cylinder Cert.	10-05082	$11,907.00

OPTIONAL OUTPUT INTERFACES AVAILABLE FOR MVP PKGS LISTED ABOVE

Models	Description	Part No.	Price
-OPT	Allows the MVP to provide engine data to an OP Technologies unit.	10-03169	$667.00
-RTDO	Real-Time Data Out. Can be used to provide telemetry for UAV's, racers and other applications.	10-03168	$590.00

ACCESSORIES FOR MVP PKGS

EGView	EGView Charting Software. Use for analyzing and downloading data to the MVP-50P.	10-01219	$125.00
USB-64	USB Memory Stick, 64 MB or larger. Used to upload and download data to the MVP-50P.	10-03186	$32.95
CP-1-MVP	LED Intensity Control Pot. External pot used to control the display intensity.	10-03211	$35.00
EDC-33P-4/6	4/6 Cylinder Engine Data Converter. Adding a second EDC to the MVP allows. Additional pressures, annunciators and other functions to be monitored on the MVP (uses the Input Port 3 on the MVP).	10-03184	$879.00
MVP-50P Head Only	Display unit only! May be used to display parameters in a second location Display Only	10-01193	$2,959.00

TEMPERATURE PROBES FOR MVP-50P & MVP-50T

Models	Description	Part No.	Price
P-100-MVP	CHT probe, screw-in, 3/8"-24	10-00808	$89.95
P-101MVP	CHT probe, Military Bayonet.	10-00438	$89.95
A-101MVP	CHT Adaptor for P-101 Probe, 3/8"-24	10-00374	$11.95
P-102-18-MVP	CHT probe, 18mm gasket.	10-01368	$89.95
P-102-14-MVP	CHT probe, 14mm gasket	10-02037	$89.75
P-102-12-MVP	CHT probe, 12mm gasket	10-02038	$89.95
P-102-3/8-MVP	CHT probe, 3/8" gasket, piggy-backs on a primary CHT probe	10-02039	$89.95
P-110-F-MVP	Fast-Response EGT/TIT probe, Hose Clamp Type, .125"D	10-00376	$95.50

Models	Description	Part No.	Price
P-111-MVP	Std TIT probe, 1/8" NPT, .187" D	10-02040	$89.95
P-111-F-MVP	Fast Response TIT probe, 1/8" NPT, .187" D	10-02041	$84.95
P-112-MVP	Std TIT probe, 7/16"-20, .187" D	10-00378	$89.95
P-114-MVP	Std TIT probe, ¼" NPT, .187" D	10-00379	$89.95
P-114-F-MVP	Fast Response TIT probe, ¼" NPT, .125" D	10-02042	$102.95
P-120-MVP	OIL Temp probe, 5/8"-18	10-00302	$89.95
P-128-MVP	OAT/Carb Temp probe , ¼"-28	10-00301	$89.95
P-104-MVP	Universal Temp probe, #6 hole	10-00380	$89.95
XDS-6'	One 6 ft TC harness w/ crimped D-Sub pins. Use to interface any temperature Probe to the MVP system. Specify length at time of order.	10-03192	$34.50

PRESSURE TRANSDUCERS AND MODULES

(Each includes a Cbl-4D-6' harness when ordered w/ the MVP-50 & MVP-50T)

PT-30GA-MVP	Pressure Transducer, 0 to 40 PSI (see Accessories page for details)	10-03232	$169.95
PT-300GA-MVP	Pressure Transducer, 0 to 300 PSI (see Accessories page for details)	10-01203	$184.95
PT-3000S-MVP	Pressure Transducer, 0 to 3000 PSI (see Accessories page for details)	10-03236	$227.95
PT-30ABS-MVP	Absolute Pressure Transducer, 0 to 36 In Hg (Manifold Press or Cabin Altitude)	10-03238	$136.75
PT-30ALT-MVP	Altitude Transducer	10-03239	$360.95
PT-60ABS-MVP	Absolute Pressure Transducer, 0 to 70 In Hg (Manifold Pressure)	10-03240	$229.95
PT-05Diff-MVP	Differential Pressure Transducer, 0 to 60 In Hg (Vac Pressure or Cabin Diff Pressure)	10-03241	$136.95
PT-04H20-MVP	Differential Pressure Transducer, 0 to 5 In H20	10-03242	$227.95
DPIM-1-30-MVP	Differential Pressure Interface Module for aircraft that require fuel pressure to be Measured in reference to the upper deck. Includes a PT-30GA pressure transducer to measure the upper deck pressure.	10-03205	$348.95
Cbl-4D-6'	One 6' 4-wire cable with crimped D-Sub pins. Used to interface any pressure transducer, fuel flow transducer or fuel level probe to the MVP system. Add $.95 per foot to the price for anything over the standard 6' length.	10-03183	$52.75

FUEL FLOW TRANSDUCERS AND MODULES

FT-60	Fuel Flow Transducer (Red Cube), .6 to 70+ GPH	10-01196	$129.50
FT-90	Fuel Flow Transducer (Gold Cube), 3 to 125+ GPH	10-01224	$259.00
FT-180	Fuel Flow Transducer (Black Cube), 5 to 250+ GPH	10-01197	$417.00
FFDM-1-MVP-FT60	Fuel Flow Differential Module for aircraft w/ a pressure carburetor. Includes FT-60 or FT-90 transducer to measure the returned fuel. Please specify FT-60 or FT-90 at time of your order.	10-03244	$348.95
FFDM-1-MVP-FT90		10-03245	$346.95
FM-Flow-P	Measures Fuel Flow from a pulsed injector signal.	10-03206	$348.95

FUEL LEVEL PROBES AND MODULES

RFLM-4-12	Resistive Fuel Level Module. Must be used w/ EI's "EDC" to measure up to 4 Resistive Fuel Level Sensors.	10-02772	$89.95
RFLM-4--24		10-03231	$89.75
P-300C	3/4" Capacitive Fuel Level Probe w/ Accessories. (see our Accessories Page for details.) Specify Probe length at time of order.	10-00382	$222.95
P-300C-Mini-1/8"	3/16" Capacitive Fuel Level Probe (see our Accessories Page for details)	10-03193	$173.95
P-300C-Mini- 1/4"		10-03194	$172.95

VOLTS AND AMPS MODULES AND SHUNTS

FM-VA-MVP-50	Volts/Amps Module. Allows any temperature or pressure channel on EI's EDC to measure Voltage and Current on a separate bus. Comes w/ an S-50 or S-300 shunt.	10-03247	$172.95
FM-VA-MVP-300		10-03248	$172.95

MVP SCREEN ANNUNCIATOR INTERFACE UNITS

VI-221	Voltage Interface Unit. Allows any temperature or fuel level channel on our EDC to measure the output voltage of any device. This voltage measurement can then be used to drive an annunciator (Canopy Latch, Gear Lights, Baggage Door, etc.) that will be displayed on the MVP screen.	10-03187	$7.50

IN

ELECTRONICS INTERNATIONAL PANEL PACKAGES

DELUXE PACKAGE - Includes: 1. US-8: All EGT's, all CHT's, OAT, carb. Temp, 16 programmable upper limits, 16 programmable lower limits, 2 programmable differential limits and a programmable shock-cooling limit. 2. FP-5: Fuel flow, Rem, used time to empty, fuel pressure, 2 programmable low fuel limits, 1 programmable time to empty limit, programmable high and low pressure limits, programmable K factor, programmable fuel weight and programmable display for gallons or pounds. 3. R-1: RPM w/high warning, tach time and flight time. 4. M-1: Manifold pressure to .1" Hg. w/high warning. 5. OPT-1: Oil pressure and oil temperature w/high and low warnings. 6. VA-1A: Volts and amps with discharge and high voltage warnings. • Total pkg will fit in a 5" x 7.5" space with no external boxes. • Includes all probes, 6' cables, transducers, accessories and a free LED front panel intensity control pot. CALL FOR SPECIAL PRICES

STANDARD PACKAGE - Includes: 1. EAC-1: One channel of EGT, CHT and OAT. The EGT and CHT may be upgraded to an analyzer with the addition of a remote switch. 2. FP-5: Fuel flow, Rem, used, time to empty, fuel pressure, 2 programmable low fuel limits, 1 programmable time to empty limit, programmable high and low pressure limits, programmable K factor, programmable fuel weight and programmable display for gallons or pounds. 3. R-1: RPM w/high warning, tach time and flight time. 4. M-1: Manifold pressure to .1" Hg. w/high warning. 5. OPT-1: Oil pressure and oil temperature w/high and low warnings. 6. VA-1A: Volts and amps with discharge and high voltage warnings. • Total pkg will fit in a 5" x 7.5" space with no external boxes. • Includes all probes, 6' cables, transducers, accessories & a free LED front panel intensity control pot. CALL FOR SPECIAL PRICES

SUPER CLOCK INSTRUMENTS

ASC-5A - Displays Local & Zulu Time in 12 or 24 hr format, Up & Down Timers w/ alarms, Altitude (as seen by ATC), and OAT. Several programmable alarms, including Assigned Altitude, Level Off, Deviation Alarm and an Approach Alarm + a recurring alarm to alert you at a programmable interval, for checking fuel. P/N 10-02914..... $479.95

SC-5 - Displays Local (12 or 24-hour format) & Zulu Time. 10-year Lithium battery keeps the clock running even if the a/c battery is removed. Displays an Up Timer, which starts running when the engine is started, acting as an automatic Flight Timer. The Up Timer may be started, stopped or reset. Recurring Alarm may be set to alert you at appropriate time intervals, e.g., if set for 30 minutes, there will be an alarm at 30 minutes, 60 minutes, 90 minutes, etc. Alarm can be used as a reminder to check fuel level or switch tanks at set time intervals.

P/N 10-01612..... $284.95

FUEL LEVEL INSTRUMENTS

For TC holders, STC holders or Experimental Aircraft No STCs. FL-1CA Fuel Level Instrument . The FL-1CA is to be used w/ EI's P-300C Capacitive Fuel Probe (custom order probe length from 6" to 20'). The FL-1CA features a 210 degree Arc of LEDs for an excellent "field of vision" reference and a Digital Display. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit for night operations.

Model	Description	Part No.	Price
FL-1CA	The FL-1CA is to be used w/ EI's P-300C capacitive fuel probe (order from 6" to 20' long). 210 degree LED arc + a digital display. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit for night operations.	10-00386	$399.95
FL-1RA-12/24	The FL-2RA-12 designed to be used on a 12-volt system w/ resistive fuel probes. Features a 210 degree LED arc + a digital display. Max resistance between 90-270 ohms. Can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight and Backlit.	12V 10-03209 24V 10-00388	 $399.95 $394.00
FL-2CA	The FL-2 is a fuel level instrument featuring dual 90 degree LED arcs + a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps.	11-03788	$394.00
FL-2RA-12/24	The FL-2 is a fuel level instrument featuring dual 90 degree LED analog displays and a digital display. The FL-2 can display in gallons (one or one-half gallon increments), pounds or liters. FL-2 Specifications: 2 1/4" Mount, 3.65" Depth, 10 Oz. Unit, Viewable in direct sunlight, Backlit, Operates from 7.5 to 35 volts at .3 amps. Please specify 12/24 volt at the time of order.	11-03789	$398.00
FL-2RA-24		11-07104	$389.95

MVP-50T GLASS PANEL MULTI-FUNCTION DISPLAY

Replaces 15 engine gauges and 50 functions. Remarkable full-color, enhanced TFT Glass Display (excellent viewability, even in direct sunlight) Pilot-Programmable Colors, Range Markings, Limits and Voice Alarms (for each parameter monitored) "System Page" to display Trims, Flaps, Wheel Status Lights, and many other system parameters and annunciators. 27 Pilot-Customized Annunciators at the top of the "Main Page". Fuel Management, Timers, Clocks, Date, Weight & Balance. Data Recording (.33 – 6 min, 665 hours @ 6 seconds). Pilot-Customized Checklists and Flight Plans. General Info, Flight Log, Start Log, Max & Min Data. Pilot easily can generate Custom Screens and download them to the MVP-50P through the USB port. Help Screen, GPS Interface and Data, Fuel Efficiency, Fuel Used for the Trip, Fuel Used Since Fill Up, Time to Empty, Distance to Empty, Fuel to Way Point, Time to Way Point, Distance to Way Point, Fuel Reserve, Time Reserve, Distance Reserve, Up Timer, Down Timer, Flight Timer, Engine Hours, Cycles, Date, Local and Zulu Time. Other functions, such as Fuel Level, Gyro Vac, Hydraulic Pressure, etc., may be added by purchasing an appropriate probe & harness, or transducer, etc. See our Accessories, "Probes and Transducers" section on previous page. Using your current Resistive Fuel probes require our FFLM-4-XX to interface with the MVP-50T System. Torque, Oil Pressure & Temperature, Fuel Flow & Pressure, OAT, Amps, Volts, Multiple Fuel Screens, Pre-wired Harness, N1 and N2 hookups. Includes EDC (Engine Data Converter), cables and harnesses, transducers, shunt (for amps), USB Download/Upload Memory Stick, and our AV-17CP (Voice Warning Control Panel). Only 5.55"x 5.15"x 2.4" deep

Eperimental	Description	Part No.	Price
MVP-50T-PT6	Pratt & Whitney PT-6 Turboprop Pkg	10-03160	$6,175.00
MVP-50T-W	Walters Engine Turboprop Pkg	10-03161	$6,175.00
MVP-50T-G	Garrett Turboprop Pkg	10-03162	$6,175.00
MVP-50T-L	Lycoming Turboprop Pkg	10-03163	$6,175.00
MVP-50T-A	Allison Turboprop Pkg	10-03164	$6,175.00
MVP-50T-J85	General Electric J85 Jet Engine Pkg	10-03165	$6,175.00
MVP-50T-L39	L39 Aircraft Pkg	10-03166	$7,725.00
Certified	Description	Part No.	Price
MVP-50T-PT6-C	Pratt & Whitney PT-6 Turboprop Pkg	10-05090	$8,575.00
MVP-50T-W-C	Walters Engine Turboprop Pkg	10-05089	$8,575.00
MVP-50T-G-C	Garrett Turboprop Pkg	10-05091	$8,575.00
MVP-50T-L-C	Lycoming Turboprop Pkg	10-05092	$8,575.00
MVP-50T-A-C	Allison Turboprop Pkg	10-05093	$8,575.00
MVP-50T-J85-C	General Electric J85 Jet Engine Pkg	10-05094	$8,575.00
MVP-50T-L39-C	L39 Aircraft Pkg	10-05101	$8,575.00
OPTIONAL INTERFACES AVAILABLE FOR PKGS LISTED ABOVE			
-OPT	Allows the MVP to provide Engine Data to an OP Technologies unit.	10-03169	$667.00
-RTDO	Real-Time Data Out. Can be used to provide Telemetry Data for UAV's, racers and other applications.	10-03168	$590.00
ACCESSORIES			
USB-64	USB Memory Stick, 64 MB or larger. Used to upload & download data to the MVP.	10-03186	$32.95
CP-1-MVP	LED Intensity Control Pot. External pot used to control the display intensity.	10-03211	$35.00
EDC-33T	Turboprop/Jet Engine Data Converter. Adding this second EDC to the MVP allows monitoring of additional temperatures, pressures, annunciators and other functions.	10-03185	$1,639.00
MVP-50T Display Head	May be used to display parameters in a second location. (display only)	10-03202	$3,550.00

INSTRUMENTS FOR TURBOPROP AIRCRAFT

10-03249 10-03264 10-03265 10-03267 10-03268

Model	Description	Part No.	Price
R-1-N1	RPM INSTRUMENT, TSOd, PMAd (no STCs). Digital 1% Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Viewable in direct sunlight, Backlit, Operates from 7.5 to 30 volts @ .3 amps.	10-03249	$790.00
R-1-N2	RPM Instrument displayed in RPM. TSOd, PMAd (no STCs). Digital 10 RPM Resolution Display + 210 degree LED arc display with green, yellow and red LEDs. 2-1/4" Mount, 3.65" Depth.	10-03264	$790.00
M-1T	PRESSURE OR TORQUE INSTRUMENT, TSOd, PMAd (no STCs). 1 PSI or 1% Resolution + 210 degree LED arc display with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument. Backlit.	10-03265	$790.00
M-1-ITT	INERT-Turbine Temperature Instrument IN Celsius. TSOd/PMAd (no STCs). Digital display (1 degree C resolution) + 210 degree LED arc with green, yellow and red LEDs. 2 1/4" Mount, 3.65" Depth, 10 Oz.	10-03266	$790.00
M-1-TOT	Turbine Outlet Temperature INC. TSOd/PMAd (no STCs).	10-03267	$790.00
OPT-1-FV-60	AC BUS VOLTAGE & FREQUENCY, TSOd/PMAd (no STCs). The "-60" instrument is for a 60 Hz. bus and the "-400" instrument is for a 400 Hz. bus. Accurate Digital Display can be switched between Voltage and Frequency, displays in Volts and Hz. 2 1/4" Mount, 3.65" Depth, 10 Oz. Instrument.	10-03268	$790.00

IN

AP-7H OR AP-7V LED ANNUNCIATOR PANEL

(H = Horizontal Mount; V = Vertical Mount) When mounted in front of the pilot, the AV-7 Annunciator Panel's bright red LEDs give a quick warning of any out-of-limit condition. Can be connected to these E.I. instruments: US-8A or SR-8A, FP-5(L) and/or FL-2, R-1, M-1, and OPT-1. A control switch will dim or turn off the warning LEDs. Simple to install (requires only 8 ea. 1/2" holes to mount). Connect to a small 3" x 2" x 1" Control Box tie wrapped to a wire bundle under the instrument panel. Size: 5.3" x .9", 10 Oz. Kit, Operates on a 12 or 24-volt system. Includes: Annunciator Panel, Control Box and all wires and connectors.

Vertical ..... P/N 10-03288 ..... $165.00
Horizontal (Pictured) ..... P/N 10-03289 ..... $165.75

AL-1 RED CHROME ANNUNCIATOR LIGHT

The AL-1 makes an excellent indicator light for displaying boost pump on, gear status, power on, flags, etc. Also, it can be used as a remote warning light for any E.I. instrument featuring an external warning line. The AL-1 is more attractive, operates on less power and is smaller than the old fashioned indicator lights.

The AL-1 has a service life of over 1000 times that of incandescent bulbs. Mounts in a 5/16" hole. Size: .4" diameter x 1" depth. Operates on a 12 or 24-volt system. Comes with 32" leads.

Red ..... P/N 10-04164 ..... $17.95
Yellow ..... P/N 10-04165 ..... $17.95
Blue ..... P/N 10-04166 ..... $18.95
Orange ..... P/N 10-04167 ..... $18.95
Green ..... P/N 10-04168 ..... $18.80

AV-17 VOICE ANNUNCIATOR

The AV-17 can provide up to 17 verbal warnings through your headset, ending the need to constantly scan the instrument panel. Eliminate concern about missing an alarm at a critical moment. The instant a monitored alarm occurs, the Voice Annunciator will chime in the headset and a pleasant female voice will announce a phrase, such as: "Check Oil Pressure," or "Check Altitude," etc. The AV-I7's voice alarm in the headset provides an instant and clear understanding of what's going on in the cockpit without the hassle of having to scan instruments, decipher functions, interpret readings or translate numerous bells, buzzes or beeps. The AV-17 connects to the headset through the Audio Panel or Intercom or may be connected directly to the headset. The AV-17 receives most of its warning signals from any one or more of Electronics International's instruments which feature a warning light. However, other alarm inputs can be received from any warning device that drives a horn or light. It is not necessary to activate all 17 of the AV-17's warnings. A "Check Bus Voltage" warning is built into each AV-17. Further voice alarms can be activated as EI instruments are added to the panel. The AV-17 is compact. A 4.1" x 2.6 x 1.7" Control Box tie wraps under the instrument panel. A 1" x 1" Control Panel mounts on the aircraft instrument panel. The Control Panel allows you to turn the VoiceAnnunciator on or off, and allows you to acknowledge, and thereby deactivate, any active alarm for either 1 minute or 10 minutes. The AV-17 voice alarms are activated by pulling the appropriate control line to ground (0 volts).

AVI-1 MODULE - This Module allows a positive voltage to activate one AV-17 control line. Use with the AV-17 when utilizing inputs from gauges other than Electronics International's.

AV-17 ..... P/N 10-00181 ..... $249.95
AVI-1 ..... P/N 10-03292 ..... $18.80

RC-1 TACH DRIVE CAP

The RC-1 is a Tach Drive cap. The thread pattern is 7/8 x 18 and fits most Tach Drive Lines.

P/N 10-01223 ..... $4.75

FIELD TEST DEVICES

Models	Description	Part No.	Price
FCD-FF	Outputs a variable fuel flow signal.	10-03295	$58.95
FCD-FP	Outputs a variable fuel pressure signal (0 to 50+ PSI).	10-03296	$58.95
FCD-OP	Outputs a variable oil pressure signal (0 to 100+ PSI).	10-03297	$58.95
FCD-RPM	Outputs a variable RPM signal (800 to 2800 RPM).	10-03298	$58.95
FCD-AMP	Outputs a 50mV signal. Used to test the VA-1A-XX Volt/Amp Instrument.	10-03301	$58.95
FCD-CFL	Outputs a variable capacitive fuel level signal.	10-03302	$58.95
FCD-RFL	Outputs a variable resistive (0-250 ohms) fuel level signal.	10-03303	$58.95

PROBE EXTENSION CABLES

Description	Part No.	Price
EI XS-6 Extension 6 FT Slip on Connectors	10-01688	$36.50
EI XCS-6 Extension 6 FT Circular To Slip on Connectors	10-02031	$36.50
EI XS-20 Extension 20 FT Slip on Connectors	10-02032	$64.50
EI XCS-20 Extension 20 FT Circular To Slip on Connectors	10-02033	$64.50
EI XP-6 Extension 6 FT Precision Connectors	10-02034	$39.00
XCO-6 Extension 6 FT Circular to Overlap Connectors	10-05708	$36.50
EI XO-6 Extension 6 FT Overlap Connectors	10-05620	$36.50
EI Overlap Connectors OLC-1- Eliminates the need for soldering, crimps, and expensive connectors	10-05470	$1.00

REMOTE SWITCHES

A remote switch may be used to upgrade many single-channel E.I. instruments to multi-channel EGT and/or CHT engine analyzers. This is an excellent way to insure your engine is operating properly. Specifications for all switches: Body - 1"x 1"x 1.5" depth, front panel - 2"x 1.15", STC'd / PMA'd

RS-4-1S - Upgrades any unit to read four channels of EGT or CHT, Package includes: Unit, (3) 6' cables, (3) probes. Specify probe type with order.
P/N 11-01688 ..... $290.95

RS-4-2S - Upgrades any two channel unit to read four channels of EGT and CHT, Package includes: Unit, (6) 6' cables, (3) EGT probes, (3) CHT probes P/N 11-01689 ..... $419.95

RS-6-1S - Upgrades any unit to read six channels of EGT or CHT, Package includes: Unit, (5) 6' cables, (5) probes. Specify probe type with order.P/N 11-01690 ..... $394.50

RS-6-2S - Upgrades any 2 channel unit to read six channels of EGT and CHT, Package includes: Unit, (10) 6' cables, (5) EGT probes, (5) CHT probes P/N 11-01691 ..... $617.00

RS-8-1S - Upgrades any unit to read eight channels of EGT or CHT, Package includes: Unit, (7) 6' cables, (7) probes. Specify probe type with order.
P/N 11-01692 ..... $499.00

RS-12-1S - Upgrades any unit to read 12 channels of EGT or CHT, Package includes: Unit, (11) 6' cables, (11) probes. Specify probe type with order. P/N 11-01693 ..... $666.00

PRIMARY REMOTE SWITCHES

REMOTE SWITCHES for use w/ EI 1 or 2 channel EGT/CHT instruments. STCd, PMAd Electronics International gauges are available to replace your Primary Engine Instruments. Available for single and twin engine applications.

RS-5-1PS - Upgrades any primary TIT/CHT unit to read 4 channels of EGT or CHT, Package includes: Unit, (4) 6' cables, (4) probes. 15 oz. kit Specify probe type with order. ..... P/N 11-01694 ..... $365.95

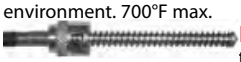
RS-5-2PS - Upgrades any primary TIT/CHT unit to read 4 channels of EGT and CHT, Package includes: Unit, (8) 6' cables, (4) EGT probes, (4) CHT probes. 2.2 lb. kit ..... P/N 11-01695 ..... $490.95

RS-7-1PS - Upgrades any primary TIT/CHT unit to read 6 channels of EGT or CHT, Package includes: Unit, (6) 6' cables, (6) probes. 27 oz. kit. Specify probe type with order. ..... P/N 11-01696 ..... $457.95

RS-7-2PS - Upgrades any primary TIT/CHT unit to read 6 channels of EGT and CHT, Package includes: Unit, (12) 6' cables, (6) EGT probes, (6) CHT probes. 3.2 lb. kit ..... P/N 11-01697 ..... $666.00

PROBES

P-100 CHT Probe; screw-in type, Standard with most kits. Can be used in a pressure environment. 700°F max. P/N 10-00808 ..... $89.95



P101 - CHT Probe; Military Bayonet type, 1/4 turn locking for quick removal. To be used with the A-101 adaptor. 700°F max. P/N 10-00438 ..... $89.95

A101 - CHT Adaptor; 3/8" - 24, to be used with the P-101 CHT probe.
P/N 10-00374 ..... $11.95

P-102 - CHT Probe; Gasket type, 18mm, 700°F maximum.
P/N 10-01368 ..... $89.95

P-110 - EGT/TIT Probe; Hose clamp type, used with 13/64" hole. Standard with most kits. Weight: 1.6 oz.
P/N 10-01591 ..... $89.95

FAST RESPONSE P-110 - EGT/TIT Probe; Hose clamp type, used with .130" hole. Optional with most kits. Weight: 1.6 oz.
Probe only ..... P/N 10-00376 ..... $95.50

P-111 - TIT Probe; 1/8" NPT with adjustable depth. (with cable) P/N 10-25235 ..... $126.45

P-112 - TIT Probe; 7/16"-20, with adjustable depth. (without cable)
P/N 10-00378 ..... $89.95

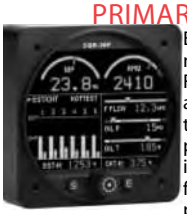
P-114 - TIT Probe; 1/4" NPT with adjustable depth. (without cable)
P/N 10-00379 ..... $89.95

P-128 - OAT/Carb Temp. Probe; uses a precision connector, can be used in a pressure environment, 700°F max.
P/N 10-00301 ..... $89.95

P-104 - Universal Probe; Used to measure surface temperatures, 700°F max.
P/N 10-00380 ..... $89.95

IN

ELECTRONICS INTERNATIONAL CGR-30 PRIMARY ENGINE MONITOR SYSTEM



Easily replace several of your aircraft's primary and non-primary engine instruments with one EI CGR For example, simply replace your existing tach with a CGR. In addition to replacing our tachometer, the STC'd CGR will replace MANY of your existing primary and non-primary instruments in the same instrument, in the one 3-1/8" hole. The CGR mounts flush with your panel and doesn't protrude from your panel (as competitor's gauges do).

Available Functions: The CGR-30P comes standard with a state-of-the-art, fullcolor bar graph which assists with ROP/LOP leaning. Additionally, the bar graph has both "normalized" and digital readout screens. No other bar graph in the industry comes close to providing the number of options the CGR-30P offers. In addition to its bar graph, the CGR-30P can be configured to display a combination of the functions listed below. • RPM • M.P. • EGT/CHT Bar Graph • Oil Pressure • Oil Tempreature • TIT • Hyd Pressure • C.O. • OAT • Vac. • Fuel Pressure • Fuel Level • Fuel Flow • Fuel Remaning • Fuel Used • Fuel -GPS Related Data • Low Fuel Alarm • Recurring Fuel Alarm • Volts • Amps • Flight Timer • Tach Timer • Local Time • Zulu Time • Annuciators • Data Recording • USB Port • External Caution Lights.

Model No.	Description	Part No.	Price
CGR-30P-4-B	4-Cylinder Basic Package with RPM, Fuel Flow, EGT/ CHT Bar Graph, Fuel Remaining, Volts, OAT, Tach Time, Local Time, Zulu Time, Flight Timer, Fuel Used for the Flight, Fuel Used Since Fill-up and all GPS/Fuel Flow Data.	10-05428	$2,998.00
CGR-30P-4-P	4-Cylinder Premium Package with RPM, EGT/CHT Bar Graph, Fuel Remaining, Fuel Used, FPS/Fuel Flow Data, Engine Time, Tach Time, 5 Primary Functions of your choice and 5 Non-Primary functions of your choice.	10-05429	$3,538.00
CGR-30P-6-B	6-Cylinder Basic Package with RPM, Fuel Flow, EGT/ CHT Bar Graph, Fuel Remaining, Volts, OAT, Tach Time, Local Time, Zulu Time, Flight Timer, Fuel Used for the Flight, Fuel Used Since Fill-up and all GPS/Fuel Flow Data.	10-05430	$3,648.00
CGR-30P-6-P	6-Cylinder Premium Package with RPM, EGT/CHT Bar Graph, Fuel Remaining, Fuel Used, FPS/Fuel Flow Data, Engine Time, Tach Time, 5 Primary Functions of your choice and 5 Non-Primary functions of your choice.	10-05431	$3,948.00

PRINCETON CAPACITIVE FUEL PROBES

• Easy Push Button Calibration - Simple push buttons make calibration easy and accurate. No sensitive screw adjustments to make. Place the probe in tank, connect power and press EMPTY. Fill tank and press FULL. Calibration is complete. • Steady Readings - Digital filtering minimizes the effects of fuel slosh providing greater accuracy.• Proven Design - Designed specifically for the aircraft that are subject to harsh environments, such as vibration, temperature, and electrical noise. Probes designed for industrial applications can fail under these conditions. Proven reliability with over 10 years of history. • SAE 5 Hole Bolt Pattern - Industry standard flange mount compatible. • Unique Press fit installation option - Simply drill a 1/2" hole and use a rubber bushing to seal and hold the probe in place. • No Moving Parts - Nothing to wear out. • Output - 0 to 5 Volts • Compatible Fuel Quantity Gauges - UMA P/N: 18-110-1C1 (P/N 10-01717), 18-210-1C1 (P/N 10-01717);Westach P/N: 20A4V (P/N 10-01255) & 2A7V (P/N 10-01246) and other 0-5V gauges.

Mounting Options: • Unique Pressfit Installation - Can be mounted in plastic tank by drilling a 1/2" hole. A rubber grommet is used to hold the probe in place. • Standard SAE 5-Hole Bolt Pattern - A backing plate and seal are used to secure the probe to the tank. Standard Lengths of 12, 18, & 24 inches. Flange mount with standard SAE 5-hole pattern, or rubber grommet press fit. Probes may be shortened up to 1/2 of their measurable length. 0, 3, or 5 inch bendable section. 2 or 5 set points.

Ordering: (LL-BB-SS-MM)

LL - Length (12, 18, 24 inches or 25 to 48 inches custom)
BB - Bendable Section (NB= non-bendable, 3B= 3 inch, 5B= 5 inch)
SS - Set points (1S= Empty, 2S= Empty/Full or 5S= Empty,1/4,1/2,3/4,Full)
MM - Mounting method (PF= Press Fit Bushing, FM= Flange Mount Gasket)

Example: A 12", non-bendable, 2 set point probe using a press fit mounting part number would be 12-NB-2S-PF.

Description	Part No.	Price
Standard, 1 Or 2 Set Point, Pf Or Fm Mounting	10-00257	$89.00
Standard, 5 Set Point, Pf Or Fm Mounting	10-00258	$139.95
Standard Sae 5-hole Flange Mounting Kit	10-00259	$22.75
Advanced Npt Model, 1,2,or 5 Set Point, Npt Mount.	10-00256	$189.95
NPT Electronics module	10-05465	$89.95
Accessories	Part No.	Price
Wire For Capacitance Fuel Probe	11-03996	$1.10
Fuel Tank Bushing	05-01039	$0.32
ISS Fuel Sender Gasket	10-01097	$1.45

IN

SKYSPORTS CAPACITIVE FUEL SYSTEMS

The Skysports fuel monitoring system is a capacitance system which has no float and no moving parts except the needle on the gauge. Used in hundreds of various ultralight, homebuilt, and military aircraft, these fuel systems have been very popular due to their accuracy and durability. The Skysports fuel probe electronically measures the level of fuel in the tank, and sends the signal through the wire harness to the gauge. Available for single or dual tank use and for 12 or 24 volt operation. The system includes the gauge, probe, 8 ft. wire harness, mounting hardware, & instructions.

The SkySports 240-33ohm fuel systems are no longer available. They have been replaced with a new 0-5V system. These new systems, (listed below) can be used on both 12 or 24 volt aircraft. The older 240-33ohm gauge and probes are not interchangeable with the new 0-5V gauge or probes. However the installation of the systems are the same.

Note:The Skysports 240-33ohm older style probes are only available as special order upon request.

ROUND GAUGE SYSTEMS

Description	Part No	Price
2" Round 6" Straight Probe	10-04509	$161.21
2" Round 12" Straight Probe	10-04495	$164.11
2" Round 24" Straight Probe	10-04496	$165.86
2" Round 12" with 3" Bendable Probe	10-04497	$161.31
2" Round 24" with 3" Bendable Probe	10-04498	$168.11
2" Round 12" with 5" Bendable Probe	10-04499	$164.11
2" Round 24" with 5" Bendable Probe	10-04501	$165.86

SQUARE GAUGE SYSTEMS

Description	Part No.	Price
2-1/4" Square 6" Straight Probe	10-04511	$176.21
2-1/4" Square 12" Straight Probe	10-04502	$179.11
2-1/4" Square 24" Straight Probe	10-04503	$180.86
2-1/4" Square 12" with 3" Bendable Probe	10-04504	$176.31
2-1/4" Square 24" with 3" Bendable Probe	10-04505	$183.11
2-1/4" Square 12" with 5" Bendable Probe	10-04506	$179.11
2-1/4" Square 24" with 5" Bendable Probe	10-04507	$180.86

INDIVIDUAL COMPONENTS

Description	Part No.	Price
2" Gauge Only	10-04119	$59.85
2-1/4" Gauge Only	10-01246	$74.85
12" Straight Probe	10-03758	$82.75
6" Straight Probe	10-03753	$79.85
24" Straight Probe	10-03773	$84.50
12" with 3" bend probe	10-03746	$79.95
24" with 3" bend probe	10-03774	$86.75
12" with 5" bend probe	10-03761	$82.75
24" with 5" bend probe	10-03776	$84.50
Installation Kit	10-03731	$21.50

FUEL TOTALIZERS - FUEL GAUGES

SHADIN MINIFLO TOTALIZERS

MINIFLO SYSTEMS - Miniflo is the miniature fuel flow meter which constantly displays fuel flow in the lower windows. The fuel used and fuel remaining functions are continuously computed and can be displayed in the upper window by pressing the appropriate button. Endurance (time remaining) can be displayed in the upper window by using the rotary switch. STC's for most aircraft. Power: 12-28V DC Furnished in gallons readout (pounds also available). Weight: 31 oz. (meter& transducer). Size: 3.25"x 1.25"x 7.5". Miniflo now provides all features of standard Miniflo system plus a Loran interface as described in Digiflo above. This gives the pilot NM/Gal, Gallons to Destination and Gallons of Reserve. Specify aircraft and engine model on all Miniflo orders.Prices vary according to aircraft model.

Single Engine GPS Miniflo.....P/N 10-24735 .....CALL FOR PRICE

SHADIN DIGIFLOW TOTALIZERS

Digiflo-L is a Digital Fuel Management System designed to provide complete fuel management information under real flight conditions without any manual entry of data (after eztry of the initial fuel on board information).Digiflo-L is connected to the engine fuel flow transducer for fuel flow information and to the Loran-C or GPS receiver serial port for navigation data (ground speed, distance and estimated time en route).This system is also capable of transmitting the fuel information to the Bendix/King KLN-88, KLN-90, and Garmin GPS navigation receivers, for additional calculations and display of fuel management data.

Single Engine GPS Digiflo ..... P/N 10-02212 ..... Please Call
Twin Engine GPS Digiflo ..... P/N 10-02213 ..... Please Call

SHADIN F/ADC-200 FUEL/AIR DATA COMPUTER

The affordable Shadin F/ADC-200 Fuel/Air data computer maximizes aircraft range and fuel economy by providing automatic updating to your GPS for true air speed, winds aloft, wind components, density altitude, OAT, pressure altitude, fuel flow rate, fuel used, fuel required to destination, fuel endurance, and more. Interfaces with most popular GPS units including Bendix King KLN series, Garmin 150, 155, 165, Trimble 2000/3000 series, and Arnav. Please specify aircraft make/model, engine make/model, serial number of aircraft, and GPS make/model at time of order. P/N 10-24768 ..... Please Call

IMPORTANT: For all Shadin orders, please specify engine make and model number; aircraft make and model number; specify gallons, pounds or liters on readout and if Loran or GPS will interface. Specify make and model.

SHADIN SYSTEMS PRICING

Prices for Shadin Microflo, Digiflo, & Miniflo systems vary according to aircraft/engine models. Call Aircraft Spruce for your best pricing on any Shadin system. Aircraft Spruce guarantees to meet or beat any competitor's current advertised prices.

FUEL LEVEL SYSTEM BY DATCON

This Datcon fuel gauge and senders are designed for use with 12 volt electrical systems in automotive, marine and homebuilt aircraft applications. The gauges have a round 2" diameter case with chrome bezel. Mounting brackets and instructions are furnished. 240-33 Ohms.

Gauge No. 100177 with steel case
P/N 100177 $36.70
Lighting Kit (12V) ..... P/N 06215-00 ..... $7.70

UNIVERSAL SENDER FOR DATCON GAUGES

This Fuel Level Sender has removable mounting plate which can rotate 180° to mount on either right hand or left hand position. For tanks 6"-15" deep.

P/N 05-16710 ..... $33.65

STEARMAN FLOAT-TYPE FUEL SIGHT GAUGE

Float type fuel sight gauge used in Stearman dusters. Plastic tube with fuel level marking and 3/4" male pipe thread fitting. 16" long overall, 8" tank depth. 5-1/2" travel. Use AN867-6 Aluminum Welding Flange to mate with above gauge. P/N 10435..... $69.85

Aluminum Welding Flange to mate with above gauge.
P/N AN867-6 ..... $13.50

SPIRAL ACTION FUEL GAUGE

A precision magnetic gauge for narrow vertical tanks. Rubber float travels on spiral rod to record fuel level on hermetically sealed side-reading dial marked E, 1/4, 1/2, 3/4, F. All aluminum construction. Housing has 1-1/2" NPT male threads for connection to threaded bushing (see below). Available in two lengths:

Length 'L' 15", Float Travel 12-3/4" ..... P/N 05-16900 ..... $69.85
Length 'L' 19", Float Travel 16-3/4" ..... P/N 05-17000 $78.50

Welding Bushings - 6061 aluminum, 2-1/4" O.D., 1/4" wall. Available in 1" & 2" length. Use with welding ring to provide base for attaching to fuel tank with bolts or rivets. Ring may be welded at any point along bushing to permit depth adjustment. Specify bushing length. For use with Spiral Action Gauge.

1"Bushing ..... P/N 10362-1 ..... $14.45
2"Bushing ..... P/N 10362-2 ..... $15.75

Welding Ring - 6061 aluminum, 4-3/8" O.D., 2-1/4" I.D. to fit above welding bushings. For use with Spiral Action Gauge. ..... P/N 10363 ..... $4.40

ROCHESTER 8341-R7090 SENDER

These fuel senders are designed for top mounting in unpressurized aluminum, stainless steel, or plastic fuel tanks in all types of marine vessels. They include special features and protection from corrosion problems (internal and external to the fuel tanks) which make them the quality standard for the industry. Standard configuration, with the lead hole at 12:00, has the float arm swinging at 3:00. The float arm on this sender is 24" [609mm] long measured from the pivot point allowing it to be cut to an appropriate length to gauge any tank depth from 6" [152mm] to 25" [635mm]. The float and the washers are furnished unassembled to the float arm. The cutting and crimping process is to be done prior to the float assembly. The fuel sender is equipped with a thick film resistance card with a range of 0 to 90Ù. The recommended gasket for use under the head is made of nitrile rubber and must be ordered separately.

P/N 10-02045 ..... $21.65

MECHANICAL FUEL GAUGE

Lever-action gauge measures fuel level from full to empty on fractional dial. Matte-white markings on 2" black dial with red "No Take-off" sector below the 1/4 full mark. Cork float has 4" travel. Wire arm 12" long may be cut off to required length, wire bent to 90° angle to secure cork float. 1-13/16" between mounting hole centers. Hermetically sealed dial assembly has magnetically driven, silicone-damped or position pointer to prevent flutter. ..... P/N 05-16700 ..... $77.85

Accessories

Replacement Fuel Float ..... P/N 05-03395 ..... $2.75
Weld Adapt FLANGE 10361 ..... P/N 10361 ..... $10.45
Gasket for 05-16700 ..... P/N 15-4 ..... $3.25

LUSCOMBE/AERONCA TYPE FUEL GAUGE

This direct reading fuel quantity gauge is usable in tank depths up to 9" such as Luscombe & Aeronca. Not FAA approved. Excellent for homebuilt aircraft. Displays fuel level from full to empty. Size: 1-1/2" diameter face.

Fuel Gauge ..... P/N 05-00029 ..... $44.50
Rebuild kit for Fuel Gauge..... P/N 05-00031 ..... $9.85

GAS GAUGE TOOL SETS

Use the Gas Gauge Tool Set to remove or install gauges. It helps prevent damage to chrome inner & outer nuts. Available in standard (economical version) and deluxe (heavy-duty version). The tool used on the standard (outer nut) has been specifically designed to work on the original or new style nut. The tool used on the deluxe (inner nut) has a tight fitting handle, which you will need to hammer in. This offers you better leverage & sure grip. Heavy-duty version.

Standard ..... P/N 05-06813 ..... $9.85
Deluxe..... P/N 05-06814 ..... $21.75

GAS GAUGE FLOATS

Gas Gauge Float comes in two versions (Epoxy-Coated Cork and Modern Neoprene Cork). Epoxy-Coated Cork Float: - When replacing the float on the wire, follow it with a washer and a drop of solder to secure the float in place. Modern Neoprene Float: - This float is alcohol and gas resistent, and will not sink. It is not affected by modern ethanol based fuels. Highly recommended. USA made.

Modern Neoprene Float: ..... P/N 05-06815 ..... $4.90

GAS GAUGE NUT

Gas Gauge Nut available in two versions:
Inner - Chrome Plated - Small..... P/N 05-06816 ..... $7.85
Inner - Chrome Plated - Large ..... P/N 05-06817 ..... $8.35

IN

FLYMASTER – INSTRUMENT HOOK-UPS

FLYMASTER LIVE

The Flymaster LIVE enables real-time flight monitoring-live tracking- over Google Earth to provide a significant increase in flight safety. GPS signals are captured by the device and positions of the pilot are transmitted by cell-network, before they are displayed on a live tracking website. Real-time tracking of paragliding flights has been proven in the USA using the US cell-phone network. In addition to the configurable fields on the instrument itself, the LIVE allows the user to customize and define the layout of his instrument's screen using Flymaster Designer tool. ..... P/N 11-10861 ..... $880.00

FLYMASTER GPS

Flymaster Avionics presents the GPS, a new intermediate instrument designed for Cross-Country flying.
The GPS has all the XC flying features of the NAV and LIVE, except those specific of competition flying. The Flymaster GPS is "navigation made simple" for leisure and cross-country flights, ensuring the best value for money on the market, and adding a significant increase in safety with the 3D restricted air-spaces features

P/N 11-10859 ..... $510.00

FLYMASTER NAV

Flymaster now includes 3D air-spaces on the NAV, promoting significant increased safety.
As the other products of the new range, the NAV allows pilots to design their own multiple screens, with the new Flymaster designer software. The Flymaster NAV is "leading the way" on cross-country and competition flights, ensuring the best value for money on the market, and adding a significant increase in safety with the 3D restricted air-spaces features.

P/N 11-10860 ..... $700.00

FLYMASTER VARIOMETER

The new Flymaster Vario is the ideal instrument for leisure flights, with the high sensitivity ultrasense variometer.
The next to climb indicator, or buzzer, is the feature you can't miss in any flight, particularly in weak conditions. The Flymaster vario "won't miss a thermal" in leisure and cross-country flights, ensuring the best value for money on the market. P/N 11-10858 ..... $290.00

FLYMASTER M1 RPM / TEMP

The Flymaster M1 turns any Flymaster flight instrument into an onboard motor management system for powered aircraft. Flymaster's M1 gathers precissely gathers information from several sensors connected to the motor, recording this data and sending it via an RF interface to Flymaster instruments. A pilot can use his Flymaster B1 or B1 Nav for free flight or connect it to the M1 for motorized flying, giving the Flymaster instrument a dual function. P/N 11-10863 ..... $380.00

FLYMASTER M1 FUEL / RPM / TEMP

The Flymaster M1 turns any Flymaster flight instrument into an onboard motor management system for powered aircraft. Flymaster's M1 gathers precissely gathers information from several sensors connected to the motor, recording this data and sending it via an RF interface to Flymaster instruments. A pilot can use his Flymaster B1 or B1 Nav for free flight or connect it to the M1 for motorized flying, giving the Flymaster instrument a dual function.

P/N 11-10862 ..... $600.00

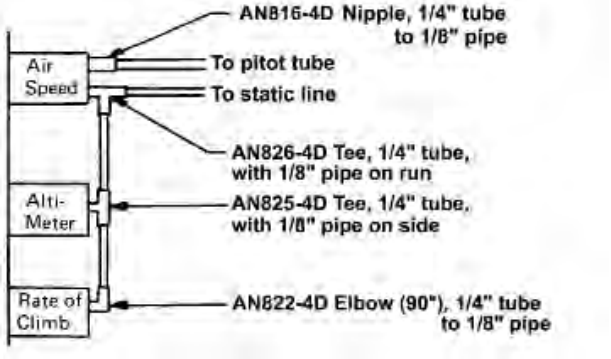
FLYMASTER ACCESSORIES

Description	Part No.	Price
Car Charger	11-10864	$15.00
Para Pocket	11-10865	$25.00
Glider Pocket	11-10866	$25.00
Leg Pocket	11-10867	$25.00
Screen Protector	11-10868	$10.00

SELECTING FITTINGS FOR INSTRUMENT HOOKUPS

1. Make sketch of instrument layout.
2. Draw lines showing routing of tubing from instruments to the fire wall or other locations.
3. Determine diameters of instrument lines. 1/4" diameter tubing is used for most instruments. The artificial horizon and directional gyro should have at least 3/8" diameter lines.
4. Select the required AN or Nylo-Seal fittings.

EXAMPLE NO. 1: HOOKUP OF AIRSPEED, ALTIMETER, & RATE OF CLIMB

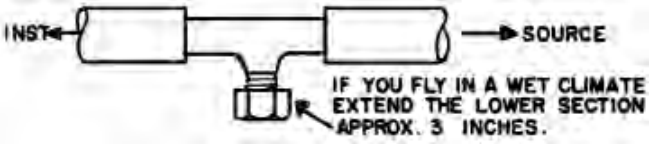


The aluminum lines (1/4-in. diameter) will be flared and attached to the fittings with AN818-4D nuts and AN819-4D sleeves.

EXAMPLES OF EQUIVALENT AN-TYPE AND NYLO-SEAL FITTINGS

AN Fitting	Thread Size	Nylo-Seal Fitting
AN816-4D Nipple	1/4 tube x 1/8 pipe	268-N 1/4
AN816-6D Nipple	3/8 tube x 1/4 pipe	268-N 3/8
AN818-4D Nut	1/4 tube	Nuts and Sleeves
AN818-6D Nut	3/8 tube	are included with
AN819-4D Sleeve	1/4 tube	all Nylo-Seal
AN819-6D Sleeve	3/8 tube	fittings.
AN822-4D Elbow	1/4 tube x 1/8 pipe	269-N 1/4 x1/8
AN825-4D Tee	1/4 tube, 1/8 pipe on run	272-N 1/4 x1/8
AN826-4D Tee	1/4 tube, 1/8 pipe on side	271-N 1/4 x 1/8
AN912-1D Bushing	1/4 pipe x 1/8 pipe	No Equivalent

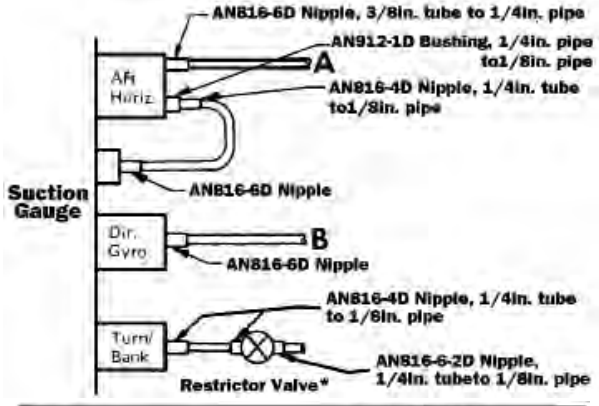
*Use AN816 Nipple and Nyloseal 266-N Female Connector to transition from AN-type fittings to Nyloseal fittings.
Each connection between the aluminum lines and the fittings requires either all AN818-4D nut and AN819-4D sleeve (1/4-in. line) or an AN818-6D nut and an AN819-6D sleeve for 3/8-in. line.
*Turn/Back vacuum set at 2 In. Hg.

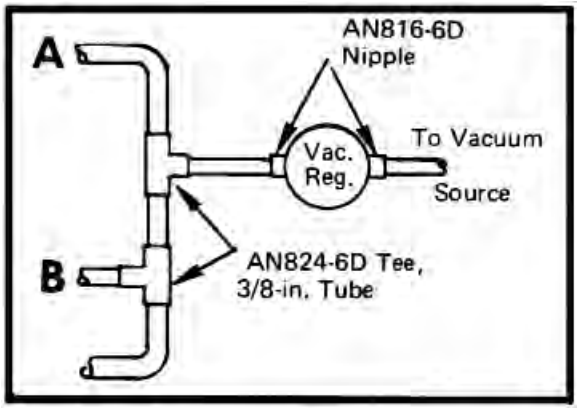


HELPFUL HINTS

It is good practice to put some form of water trap in both the pitot and static lines. It should be placed at the lowest practical point in the system between the pressure source and the instrument. The trap can be a simple T-fitting with a cap:

EXAMPLE NO. 2: HOOKUP OF GYRO INSTRUMENTS





AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

GILL BATTERIES

Founded in 1920 in Redlands, CA, Gill has become the OEM original equipment battery for Raytheon, Cessna, Learjet, Mooney, Piper, Ayres, Airtractor, Maule, and many other manufacturers. Gill's 600 series batteries have proven to be the high performance, high discharge lead-acid batteries need by jet and turbo-prop aircraft. Gill's line of sealed recombinant batteries are now available in most popular sizes and are FAA approved. Gill also provides batteries for battery powered carts which are available by special order.

NOTE: Part Numbers with an asterisk (*) ship with acid.

G-35

12 VOLT DRY CHARGED BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT

Model	AH @ 1 hr. rate	30 Min. Emer. Cap.(amps)	Wt. (filled)	Electrolyte (qts.)	Application (Aircraft)	Part No.	Price
G-25	18	30	23.8	2	Aerostar: 600, 601, 601P Beech: 19, 23, 24, 55, 58, 77 Cessna: 120, 140, 150, 170, 172, 175, 177, 310, 320, 340 Piper: PA-11, PA-36, PA-38,	11-01833*	$161.95
				--		11-01673	$159.95
G-35	23	40	28.7	3	Beech: 17, 18, 19, 23, 24, 33, 35, 36, 50, 76 Bell: 47G-5 Cessna: 180, 182, 185, 188, 195, 206, 207, 210 Mooney: M20, M20B, M20D, M20G, M20J, M20K Piper: PA-11, PA-12, PA-14, PA-16, PA-18, PA-22-25, PA-28, PA-30, PA-32, PA-34, PA-39, PA-44	11-01832*	$204.95
				--		11-01672	$194.95
G-35M	23	40	30.7	3	Maule: M-4-210, -4-210C, -4-230C, -4-180C, -5-210C, -5-220C, -5-200, -5-235C, -5-180C, -6-235, -6-180, M-7-235, MX-7-180, MX-7-235	11-03791*	$268.95
						11-03624	$251.95
G-88	65	108	78.0	8	Ayres Corp. S-2R	11-04011*	$1,018.00
						11-01685	$989.00

G-242

24 VOLT DRY CHARGED BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT

Model	AH @ 1 hr. rate	30 Min. Emer. Cap.(amps)	Wt. (filled)	Electrolyte (quarts)	Application (Aircraft)	Part No.	Price
G-240	8	13	23.0	3	Cessna 152, 172, 182	11-01655*	$401.95
				--		11-01683	$392.00
G-241	8	13	24.0	3	Cessna 152, 172, 182, 172R, 172S	11-01656*	$360.95
				--		11-01681	$351.00
G-242	10	17	27.0	3	Cessna: 152, 172, 177, 182, 207, 210, 336, 337 Piper: PA-23, PA-31, PA-36	11-01657*	$379.95
				--		11-01675	$370.00
G-243	10	17	28.0	3	Cessna: 152, 182, A152, 172, 172R, 172RG, 172S, T182, R182, TR182, T303, 210 (S/N 21059503 & ON), T210M, T210N, T210R, 188, 188A, 188B, A188, A188A, A188B AND T188C Cirrus: SR20, SR22 Slingsby Aviation, Ltd.: T67M260, T67M260-T3A	11-01658*	$390.95
				--		11-01678	$379.00
G-244	18	30	38.5	4	Beech: A60 Cessna: 310, 335, 340, 402, 404, 414, 421 Piper: PA-31	11-01555*	$441.95
				--		11-01543	$427.00
G-245	18	30	39.5	4		11-01660*	$412.95
				--		11-01670	$398.00
G-246	19	32	41.5	4	Airtractor: AT-300, AT-400 Piper: PA-23, PA-31	11-01661*	$416.95
				--		11-01680	$409.00
G-247	19	32	42.5	4	Piper PA-31P-350	11-01772*	$458.95
				--		11-01662	$444.00

G-25

12 VOLT VRLA BATTERIES FOR GENERAL AVIATION SINGLE & TWIN ENGINE AIRCRAFT (SEALED)

Model	AH @ 1 hr. rate	30 Min. Cap.(amps)	Wt. (filled)	Application (Aircraft)	Part No.	Price
G-25S	18	30	25.0	Cessna: 120, 140, 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, 150M, 170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172G, 172F (USAF T-41A), 172H (USAF T-41A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172R, 172S, 175, 175A, 175B, 175C, 177, 177A, 177B, 310, 310A (USAF U-3A), 310B, 310C, 310D, 310E (USAF-U-3B), 320, 320-1, 320A, 320B, 320C, 320D, 320E, 320F, 340 Piper: PA-11, PA-36-285, PA-36-300, PA-36-375, PA-38-112 Aerostar: PA-60-600 (Aerostar 600), PA-60-601(Aerostar 601), PA-60-601P (Aerostar 601P), PA-60-602P (Aerostar 602P) Raytheon: 19A, 23, A24, D55, E55, E55A, 58, 58A, 77 Sky International: A-1, S-1S, S-1T, S-2, S-2A, S-2S, S-2B	11-01316	$163.50
7035-28	23	40	29.0	Beechcraft: 23, 35, 36, 50, 76 G-35S Bell: 47G-5 Cessna: 180, 182, 185, 188, 195, 206, 207, 210 Maule: M-4-210, -220, -180, M-5-180, -210, -220, -235, -200, -210TC, M-6-180, -235, M-7-235, MX-7-180, MX-7-235, MXT-7-180, MT-7-235, MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235 Mooney: M20, M20B, M20D, M20G, M20J, M20K Piper: PA-12, PA-14, PA-16, PA-18, PA-22, PA-23, PA-24, PA-25, PA-28, PA-30, PA-32, PA-34, PA-39, PA-44	11-11312	$257.95

G-246

200 SERIES 24 VOLT VALVE REGULATED LEAD ACID BATTERIES (SEALED)

Model	AH @ 1 hr. rate	30 Min.Cap. (amps)	Wt. (filled)	Application (Aircraft)	Part No.	Price
G242S	10	17	27	Cessna 152,172,177,182,207,210,336,337; Piper PA-23/31/36	11-01665	$417.00
G-2505	16	25	31.5	Visit our Website for application information	11-10755	$522.00

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~ Pay Price of Battery - That's It! FULL MFG. WARRANTY - SHIPPED SAME DAY ORDERED *Batteries up to 50 lbs.

NOTE: The data in the "Application" section above is intended as a reference guide only. Some installations may vary and require airframe or battery box modification. Some applications may require field approval and some listings are pending FAA approval. Verify correct battery model for your aircraft before ordering. Dry charged Gill Batteries are furnished with electrolyte (except overseas) unless requested otherwise.

GILL BATTERIES

NOTE: Part Numbers with an asterisk (*) ship with acid.

G-641

G-6381C

GE-51E

GE-54C

24 VOLT DRY CHARGED BATTERIES FOR TURBO PROP AND JET APPLICATION

Model	AH 1hr. rate	30min E.C. (amps)	Wt.lbs (filled)	Elect-rolyte (quarts)	Application (Aircraft)	Part No.	Price
G-6381E	43	70	80	9	Dassault: Fan Jet Falcon Series C-F Raytheon Beech: 65-90, 65-A90, 65-A90-1(JU-21A, U-21A, RU-21A, RU-21D, U-21G, RU-21H), 65-A90-4(RU-21E, RU-21H), B90, C90, E90, F90, 99, 99A, 100, A99, A99A, A100, A100A, B100, 200, A100-1(U-21J), 200C, 200CT, 200T, A200(C-12A) OR (C-12C), A200CT(C-12D), OR (FWC-12D) OR (RC-12D), OR (C-12F) OR (RC-12G) OR (RG-12H) OR (RC-12K) OR (RC-12P), B200, B200C, (C-12F) OR (UC-12F) OR (UC-12M) OR (C-12R), B200CT, B200T, 300, B300, 300LW, B300C, MU-300-10, 400, 400T, Hawker 1000 Bell: 204B, 205A, 205B, 205A-1, 212, 222U, 412 Cessna: 208, 208B, 425, 441, 500, 501, 550, 551, S550, 560, 560XL Embraer: EMB-110P1, EMB-110P2 Learjet: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series, 31, 31A, 55, 55B, 55C series Gulfstream: G-159 Israel Aircraft Industries: 1121, 1121A, 1121B, 1123, 1124 Lockheed-GA: 1329-23 series Mitsubishi: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 Pilatus: Pilatus-PC-12 Piper: PA-31T, -31T1, -31T2, PA-42 and PA-42-720 Rockwell: NA-265 series; Aero Commander: 680T, 680V, 680W, 690, 690A Sikorsky: S-76A, S-76B, S-76C Socata Group Aerospatiale: TBM-700	11-01557*	$1,480.00
				---		11-01545	$1,449.00
G-639E	24	40	55	5	British Aerospace: DH.125-400A, HS.125-600A, HS.125-700A, BH.125-600A, BAE.125-800A, Jetstream series 3101 Hawker Siddeley, Beechcraft Hawker: DH.125, HS.125, BH.125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S	11-04158*	$1,214.00
				---		11-01607	$1,194.00
G-640E	14	25	40	3	Beech: 65, A65, 65-80, 65-A80, 65-B80, 65-88, 70	11-04160*	$756.00
				---		11-01608	$742.00
G-641	18	30	54	4	Bell: 206, 206A, 206B, 206B-1, 206L, 206L-1, 206L-3 McDonnell Douglas (Hughes) : 369, 369A, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N with STC kit SR01427LA installed Schweizer Aircraft Corporation: 269D (333)	11-02448*	$1,088.00
				---		11-01684	$1,074.00
G-6381C	43	70	80	9	Dassault: Fan Jet Falcon Series C-F Beech: 65-90, 65-A90, B90, C90, E90, 99, 99A, 100, A99, A99A, A100, A100A Embraer: EMB-110P1, EMB-110P2 Learjet: 23, 24 series, 25 series, 28 series, 29 series, 35 series, 36 series Gulfstream: G-159 Israel Aircraft Ind.: 1121, 1121A, 1121B, 1123, 1124 Lockheed-GA: 1329-23 series Mitsubishi: MU-2B, MU-2B-10, -15, -20, -25, -26, 26A, -30, -35, -36, -36A, -40, -60 Rockwell: NA-265 series; Aero Commander: 680T, 680V, 680W	11-04155*	$1,499.00
				---		11-01609	$1,468.00
G-639C	24	40	55	5	Hawker Siddeley Beechcraft Hawker: DH-125, HS-125, BH-125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S	11-04157*	$1,177.00
				---		11-01610	$1,163.00
GE-50E	31	55	80	8		11-03809*	$787.00
				---		11-01686	$758.00
GE-51E	22	35	56	4		11-04192*	$714.00
				---		11-01612	$714.00
GE-54E	10	16	32	3		11-09842*	$661.00
				---		11-01547	$652.00
GE-50C	31	55	80	8	Gulfstream Commander: 500, 520, 560, 560A, 560E, 680, 680E, 720 North American: AT6-C, AT6-D, AT6-F, T-6G, SNJ-5, SNJ-6, SNJ-7 or any BC-1A, AT6, AT6-A, AT6-B, SNJ-2, SNJ-3, SNJ-4 converted to 24 volts per North American Drg 121-954004, P51	11-03808*	$774.00
				---		11-01682	$721.00
GE-51C	22	35	56	4	Airtractor: AT-301, AT-301A	11-03810*	$712.00
				---		11-03623	$695.00
GE-54C	10	16	34	3		11-01558*	$678.00
				---		11-01546	$669.00

7641-20

7639-27

7639-25

7000 SERIES - (VALVE REGULATED LEAD TIN BATTERIES)

Model	AH 1 hr. rate	30 Min. Cap. (amps)	Wt. (filled)	Application (Aircraft)	Part No.	Price
7641-20	20	35	44	Bell: 206A, 206B, 206L, 206L-1, 206L-3 with STC SR01406LA McDonnell Douglas(Hughes): 369, 369A, 369H, 369HM, 369HS, 369HE, 369D, 369E, 369F, 369FF, 500N, 600N with STC Kit SRO 1427LA installed. Schweizer Aircraft Corporation: 269D (333)	11-06245	$1,694.00
7638-44	44	70	85	Same applications as the G-6381E above	11-05171	$1,876.00
7639-27	27	42	60	British Aerospace: DH.125-400A, HS.125-600A, HS.125-700A, BH.125-600A, BAE.125-800A, Jetstream series 3101 Hawker Siddeley, Beechcraft Hawker: DH.125, HS.125, BH.125 Messerschmitt-Bolkow-Blohm GMBH: BO-105S	11-07462	$1,779.00
7638-36	36	63	85	Visit our Website for application information	11-10756	$1,825.96
7638-53	53	80	93		11-10759	$2,239.00
7639-25	25	40	60		11-10758	$1,726.00
7639-34	34	55	67		11-10757	$1,765.00

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~
Pay Price of Battery - That's It! FULL MFG. WARRANTY -
SHIPPED SAME DAY ORDERED *Batteries up to 50 lbs.

NOTE: The data in the "Application" section above is intended as a reference guide only. Some installations may vary and require airframe or battery box modification. Some applications may require field approval and some listings are pending FAA approval. Verify correct battery model for your aircraft before ordering. Dry charged Gill Batteries are furnished with electrolyte (except overseas) unless requested otherwise.

GILL BATTERY ELECTROLYTE (ACID)

Battery electrolyte (battery grade sulfuric acid) in sealed polyethylene pouch with self-contained dispenser tube, packaged in sturdy cardboard container. Specific gravity 1.285. Detailed filling & disposal instructions on container.

2 Qts. ..... P/N 11-00300 ..... $7.65
3 Qts. ..... P/N 11-00305 ..... $10.77

SEALED "VALVE REGULATED SRT SERIES"

11-01316

Model	Weight	Part No.	Price
G-25S 12 Volt	25 Lbs. (full) Electrolyte: Not Needed	11-01316	$163.50

EL

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CONCORDE BATTERIES

Since their introduction in 1986, several styles of RG® Batteries, likewise known as VRSLAB, SLAB, or AGM batteries, have been developed by Concorde Battery Corporation. Concorde Battery has a dedicated Research and Development Department that is continuously improving and refining its recombinant gas product line. Formed in 1977 Concorde's factory was dedicated to manufacturing dry charged (vented or flooded electrolyte) aircraft batteries. In 1985 Concorde developed it's first recombinant gas battery with absorbed glass mat separators. Now, with the proven reliability of Concorde's recombinant gas (RG®) aircraft batteries and great acceptance in both military and commercial appllications, over 90% of its manufacturing has been changed over from dry charged to RG® production.

NOTE - The STC for some aircraft is available at an additional cost please call 877-4-SPRUCE (777823) if applicable to your aircraft.

CONCORDE GENERAL AVIATION SEALED LEAD ACID BATTERIES

RG-25 RG-25XC RG-35A RG-35AXC RG-24-11 RG-24-11M RG-380E/44

Concorde's line of sealed lead acid batteries is designed with larger positive and negative plates for more capacity and greater starting power even at sub-zero temperatures. They feature real aircraft quality terminals, patented copper alloy internally threaded terminals brass terminal bolts with conical silicon bronze lock washers, recommended 70" pound terminal torque, more than 20% higher capacity than earlier models, and a molded carrying or lifting handle. These valve regulated sealed lead acid batteries feature fully aerobatic sealed construction; no spillable electrolyte or flammable gas emissions. "XC" or "AXC" in the model number indicates extra cranking power, and "M" in the model number indicates manifold venting.

Part No.	Battery Type	Connect Type	Amp Hour	Volt	Our Part No.	Price	Part No.	Battery Type	Connect Type	Amp Hour	Volt	Our Part No.	Price
RG-25	Sealed Lead Acid	A	22	12	11-03879	$204.95	RG-12LSA	Sealed Lead Acid	A	11.00	12	11-09455	$219.95
RG-25XC	Sealed Extra Crank	A	24	12	11-03880	$237.95	RG24-15	Sealed Lead Acid	A	13.60	24	11-03878	$509.95
RG-35A	Sealed Lead Acid	A	29	12	11-03881	$259.00	RG24-15M	Sealed Lead Acid	A	13.60	24	11-04951	$514.00
RG-35AXC	Sealed Extra Crank	A	33	12	11-03882	$272.95	RG24-16	Sealed Lead Acid	A	13.60	24	11-05112	$509.95
RG-2411	Sealed Lead Acid	A	11	24	11-03876	$465.00	RG24-20	Sealed Lead Acid	A	19	24	11-00174	$657.00
RG-2411 M	Sealed Lead Acid	A	11	24	11-03877	$489.95	RG-380E/44*	Sealed Lead Acid	E	42	24	11-03883	$2,319.95
RG24-9	Sealed Lead Acid	M	9	24	11-11608	$418.00	RG24-12	Sealed Lead Acid	M	11	24	11-11612	$464.00
RG24-10	Sealed Lead Acid	M	9	24	11-11609	$418.00							

RG-380E/60L BATTERY

Concorde recombinant gas (RG® Series) valve regulated lead acid (VRLA) batteries for engine starting, emergency / essential power, and standby power applications are constructed with cutting edge Absorbed Glass Mat (AGM) technology. Concorde VRLA-AGM batteries are well known for quality and their ability to perform reliably in hot & cold climates with superior engine starting performance and excellent charge acceptance.

Battery Type	Voltage	Ampere Hours	Max. Weight	Our P/N	Price
Sealed Lead Acid	24	48	96 lbs.	11-10837	$2,868.00

RG-407 BATTERY

Certified turbine engine starting and back up power battery for helicopter applications. Recombinant Gas - The RG® Series are low resistance, valve regulated lead acid (VRLA) batteries. The RG-407 is a Concorde Platinum Series Aircraft Battery. The Platinum Series is comprised of premium hand made AGM Aircraft Batteries with excess power for many applications.

Battery Type	Voltage	Ampere Hours	Max. Weight	Our P/N	Price
Auxiliary Battery	24	27	62 lbs.	11-10836	$3,296.00

RG-407 BATTERY

Recombinant Gas - The RG Series are low resistance, valve regulated lead acid (VRLA) batteries. Specifications: • C1 @ 23°C (74°F) = 6.0 Ah• C1 @ -18°C (0°F) = 4.0 Ah• C1 @ -30°C (-22°F) = 3.0 Ah• Primary Aircraft Purpose: Emergency Aircraft Battery• Voltage: 24• Rated Capacity C1 = 1 hr. rate in ampere hours: 6.00• Max Weight: 14.50 lb / 6.6 kg• RG-132: Not Rated for Engine Starting

Battery Type	Volt-age	Ampere Hours	Max. Weight	Our P/N	Price
Emerrgency Aircraft Battery	24	6	14.5 lbs.	11-10853	$2,232.00

EL

601-910 MERIDIAN BATTERY

Concorde RG-41 is certified for Piper Meridian Aircraft. Sealed, lead acid, 24V. Weight 70lb. Dimensions (W L H) 16 in. X 16 in. X 16.5 in. Sealed. Lead.

P/N 11-11305 ..... $4,075.00

RG24-17 PIPER MATRIX / MIRAGE 601-919 BATTERY

Concorde RG24-17 is certified for Piper Matrix and Mirage Aircraft Sealed, lead acid, 24V, SL1128. Weight 17lb. Dimensions (W L H) 9 in. X 11 in. X 11 in.

P/N 11-11306 ..... $876.00

NOTE: Some installations may vary and require airframe or battery box modification. Some applications may require field approval. Verify correct battery model for your aircraft before ordering. There may be a charge for STC paperwork on certain batteries.

Free UPS Ground* Shipping in 48 States No UPS Hazardous Charge ~ Pay Price of Battery - WARRANTY - *Batteries up to 50 lbs.

RG-443 BATTERY

RG Valve regulated sealed lead acid battery. Learjet models 40 & 45. STC #ST01173WI FAA-PMA supplement #59. Emergency Battery 24V, Wt: 27 lbs.

P/N 11-02948 ..... $2,186.00

For Concorde's full earranty please see the Concorde website www.concordebattery.com.

RG-380E/44L BATTERY

RG-380E/44L and temperature sensor TSC6A Concorde #5-0242. RG valve regulated sealed lead acid battery. PIAGGIO P-180. Replacement for Ni-Cad battery. STC #SA01653LA. FAA-PMA Supplement #74 Engine starting, reliable power in the event of a generator failure. 24V, Wt: 86 lbs.

P/N 11-02949 ..... $2,739.00

RG-500 BATTERY

- Primary Aircraft Purpose: Helicopter Series
- Voltage: 24V
- Rated Capacity C1 = 1 hour
- Rate in ampere hours:17
- Max Weight: 42 lbs. / 19.1 kg

P/N 11-04738 ..... $2,418.00

BATTERY CHARGERS AND TESTERS

GILL 12/24 VOLT CHARGER

Perfectly packaged, this compact charger is big on performance. Offering adjustable amperage for 12 & 24V batteries, digital 24-hour timer, LED display, constant voltage and constant current for the most efficient way to charge. Wt: 9 lbs. This unit is switchable from 100 Volt to 220 Volt.....P/N 11-01540..... $889.00

GILL 12VDC/24VDC CHARGERS

Light weight / High strength aluminum case, Fully automatic: 3 stage charger can be left on the battery for long periods, Charge Status LED's: Power on, charging and full charging.

Features: Light weight / High strength aluminum case. Fully automatic: 3 stage charger can be left on the battery for long periods. Charge Status LED's: Power on, charging and full charging. Circuit protection: reverse polarity and short circuit protected (fused). UL and CE approved. Power cord length 6 feet and 4 foot Charger cord with ring terminals included Charge control: Modified constant current charge to a constant finishing voltage, then to a float standby. Supported with a 2 year warranty.

12VDC.....P/N 11-09985..... $109.95

GILL GC-024 24VDC CHARGER

Light weight / High strength aluminum case. Fully automatic: 3 stage charger can be left on the battery for long periods. Charge Status LED's: Power on, charging and full charging. Circuit protection: reverse polarity and short circuit protected (fused). UL and CE approved. Power cord length 6 feet and 4 foot Charger cord with ring terminals included. Charge control: Modified constant current charge to a constant finishing voltage, then to a float standby. Supported with a 2 year warranty.

P/N 11-10570..... $149.95

GILL TCT-1000 12V/24V CAPACITY TESTER

The TCT -1000 Battery Capacity Analyzer has been designed to perform automatic capacity testing of 12 and 24 Volt lead-acid batteries. This unit is capable of accurately measuring the capacity of a fully charged battery with a rating between 10 and 59 amphours. It is self-contained and easy to operate. The load tester will display, in percentage, the conformance to the battery's one hour rating.....P/N 11-03302 .....$1,165.00

CONCORDE AIRCRAFT BATTERY PARASITIC LOAD TESTER

This Parasitic Load Tester Adaptor (PLTA) measures the parasitic load / drain on aircraft batteries when the master switch is off and the aircraft is inactive. The adaptor is designed to mate with a MS3509 style quick disconnect receptacle. Measuring parasitic load is easy to do by connecting the PLTA between the battery receptacle and the aircraft mating plug. The PLTA is a molded polypropylene body equipped with separate test leads for connection to a digital multimeter (DMM). It is rated for loads up to 10 amperes and is equipped with a 10 amp fuse.

P/N 11-09841 .....$48.95

TELEDYNE GROUND POWER BATTERIES

Model	Voltage	Wt. Dry	Acid	Part No.	Price
T1100	4	70	None	11-10767	$447.00
T1100L	4	70	None	11-10768	$513.00
T2200	8	118	None	11-10765	$534.00
T2200L	8	118	None	11-10769	$554.00
T6200	12	147	None	11-10766	$713.00
T6200L	12	147	None	11-10770	$745.00

L= Lektro Start Cart

BC-5000 BATTERY CAPACITY TESTER

A portable, light weight unit designed to provide the operator with an economical, easy, and accurate means for capacity testing aircraft batteries. Fully automatic testing for 12 Volt AND 24 Volt Lead Acid or Nickel Cadmium Aircraft Batteries. Powered by the battery being tested - No AC power required. Constant current load adjustable in one ampere increments from 10 to 50 ADC. 50 mv resolution. 10 LBS / 4.5 KG Kg. Length 12" (30 cm). Width 9" (23 cm). Height 10" (25 cm). LCD display. Over temperature protection. Audio alert when capacity test is complete P/N 11-07388.....$1,411.00

BC-6000 BATTERY CAPACITY TESTER

The BC-6000 Battery Capacity Tester from Concorde. The BC-6000 is designed to accurately test and report on batteries ranging in capacity from 10AH - 50AH. Plugged into a USB port, the BC-6000 will create test reports directly from your computer. Tests both 12V and 24V lead acid batteries with capacity ratings from 10 AH to 50 AH. Constant current load in 1 Amp steps. Battery powered operation. No AC power required. LCD display. 50 MV voltage resolution. Overtemperature protection. Automatic audio warning upon completion of capacity test.

P/N 11-10482.....$1,511.00

BC-7000 BATTERY CAPACITY TESTER

The BC-7000 Battery Capacity Tester from Concorde. Create accurate reports straight from the computer. USB Port access required. Fully automatic testing for 12 Volt AND 24 Volt Lead Acid or Nickel Cadmium Aircraft Batteries. Tests both 12V and 24V lead acid batteries with capacity ratings from 0.5 AH to 50 AH. Adjustable End Point Voltage (EPV). Battery discharge mode to 1V EPV. Adjustable Constant Current loads in 0.1 Ampere increments from 0.5 Ampere to 15 Ampere plus or minus 1.5%. Adjustable Constant Current loads in 1.0 Ampere increments from 15 Ampere to 50 Ampere plus or minus 1.0%. Universal AC power input 85~264vac (47 to 63Hz). 10mv voltage resolution. Overtemperature protection. Audio warnings for completion of capacity test or a malfunction of the process.

P/N 11-10483.....$2,384.00

BC-8000 BATTERY CHARGER & CAPACITY TESTER

The BC-8000 has been designed to provide the operator with a cost effective battery charger and capacity tester in one unit. The step by step digital display is easy to program in order to set it and forget it. For use on Nickel Cadmium or Lead Acid Batteries.

Capacity Tester Features:

- Adjustable constant current load in 0.1 Ampere increments from 0.5 Ampere to 15 Ampere (+/- 1.5%)
- Adjustable constant current load in 1.0 Ampere increments from 15 Ampere to 55 Ampere (+/- 1.0%)
- USB 2.0 port for PC connection
- BC Report Utility software for hard copy printout of test results

Charger Features:

- Adjustable output from 3.0 to 36.0 Vdc
- Adjustable output amperes from 0.05 to 25 Adc
- Constant voltage (CV) or constant current (CC) charge
- Adjustable charge time from 1-999 min
- Single or two step charge routine

Common Features:

- Universal AC power input 90~264vac (47 to 64Hz)
- 10mv voltage resolution 4 line LCD display
- Over temperature protection
- Audio warning when capacity test is complete or if the unit malfunctions
- Real time internal clock with battery backup

P/N 11-10484.....$4,360.00

EL

POWERSONIC BATTERIES

P/N 11-03153

Power Sonic sealed maintenance-free batteries allow safe, trouble-free operation in any position. You never need to add electrolyte; gases generated during over charge are recombined in a unique "oxygen cycle". Under normal operating conditions, 4 or 5 years of dependable service can be expected in standby applications, or between 200 and 1000 charge/discharge cycles, depending on depth of discharge. Temp. range: -76° to +140°F.

3-AMP BATTERY - Model: Powersonic PS-1230, PPS SKU: 35L116S1 Shipping Weight: 3 lbs, Dimensions: 5.23"L x 2.64"W x 2.36"H, Voltage: 12 Volts, Capacity: 3 Amp Hour(s), Chemistry: Lead.

P/N 11-03153 ..... $24.50

18-AMP BATTERY - Model: Powersonic PS-12180NB, PPS SKU: 35L105S3, Shipping Weight: 14 lbs, Dimensions: 7.13"L x 2.99"W x 6.57"H, Voltage: 12 Volts, Capacity: 18 Amp Hour(s), Chemistry: Lead.

P/N 11-03154 ..... $58.75

26-AMP BATTERY - Model: Powersonic PS-12260NB, PPS SKU: 35L107S1, Shipping Weight: 18 lbs, Dimensions: 6.56"L x 6.97"W x 4.92"H, Voltage: 12 Volts, Capacity: 26 Amp Hour(s), Chemistry: Lead

P/N 11-03155 ..... $84.50

ATP HIGH POWER BATTERIES

ATP's UltraStart-Red & UltraBat-13 batteries are the ultimate in high power density non-spillable SLA batteries. Ideal for starting light aircraft engines for ultralight and experimental aircraft and other internal combustion engines. Typical applications include all Rotax 2 stroke engines and HKS 4-stroke engines. For engines 100HP and up UltraStart-Red - Voltage: 12.6 VDC, Energy: 5AH cap., Peak current: 250A instantaneous, Weight: 4.4 lbs., Size: 2.7"l x 3.5"w x 5.0"h

UltraBat-13 – Voltage: 12.6 VDC, Energy: 13AH cap., Peak current: 650A instantaneous, Weight: 10.8 lbs., Size: 3-3/8"l x 7"w x 5"h

UltraStart-Red ..... P/N 11-00375 ..... $153.85

UltraBat-13 ..... P/N 11-00378 ..... $179.95

Battery box for UltraStart-Red ..... P/N 11-01997 ..... $32.75

FULL SPECTRUM POWER LITHIUM BATTERIES

Full Spectrum Power makes no compromise in the design and construction of their lightweight batteries. These batteries deliver the highest current, at consistent voltage, powering the world's fastest motorcycles. Full Spectrum Power is the only battery company in the powersports market that uses real, certified cells from A123 Systems. These are the finest cells on the planet. Every Full Spectrum Power battery is designed and manufactured in the USA, using engineering and assembly methods derived from years of working with factory race teams in AMA Superbike, Supercross, Motocross, Drag Racing, Land Speed Racing, and Flat Track. Technology which was only available to the factory teams is now available to everyone! Full Spectrum batteries are now available to the Ultralight & LSA market. Not FAA Approved for Aircraft use.

PULSE SERIES

PULSE P1 BATTERY - • Save an average of 7 lbs. on a 600cc bike • 130 cranking amps / 2.5 amp hour capacity • Integrated Protection Circuit (IPC) • Heat, impact, and water resistant case • 100% Made in the USA. • Dimensions: 4.5 in (L) x 2.5 in (W) x 3.75 in (H) • Weight: 15.1 oz • Common Applications include: 600cc sportbikes (race trim); Dirt bikes less than 450cc ..... P/N 11-10701 ..... $138.75

PULSE P2 BATTERY - • Save 7 lbs. on a 1000cc bike • 240 cranking amps / 5 amp hour capacity • Integrated Protection Circuit (IPC) • Heat, impact, and water resistant case • 100% Made in the USA • Dimensions: 4.5 in (L) x 2.5 in (W) x 3.75 in (H) • Weight: 1.6 lbs. • Common Applications include: 1000cc inline 4-cylinder sportbikes; V-Twin sportbikes up to 1098cc ..... P/N 11-10702 ..... $217.00

PULSE P3 BATTERY - • Save 7 lbs. on a 1200cc bike• 390 cranking amps / 7.5 amp hour capacity• Integrated Protection Circuit (IPC)• Heat, impact, and water resistant case• 100% Made in the USA • Dimensions: 4.5 in (L) x 3.5 in (W) x 3.75 in (H) • Weight: 2.2 lbs. • Common Applications include: 1300cc inline 4-cylinder sportbikes; 1200cc twins; Drag racers using total-loss ignition systems ..... P/N 11-10703 ..... $269.00

Full Spectrum Hold Down Bracket for P1 & P2

P/N 11-10754 ..... $43.95

ANTIGRAVITY 16 CELL SMALL CASE BATTERY

480 Cranking Amps. It is the smallest 16-Cell lithium battery made at only 4.5" Length x 3.25" Depth and 5.25" height (to the top of the terminals)

P/N 11-12104 ..... $260.99

ANTIGRAVITY 20 CELL OEM YTX12-20 BATTERY

600 Cranking Amp and extremely compact size 5.8" Length x 3.4" Depth and 5.12" height (to the top of battery)

P/N 11-12105 ..... $422.99

ODYSSEY DRYCELL BATTERIES

11-01651

11-02233

11-01945

Odyssey batteries, with an eight year design life saves you time and money because you do not have to replace your battery as often. It is also the ONLY battery that is capable of delivering a large number of deep cycles – up to 400 when fully discharged or up to 500 when discharged to 80%. Odyssey battery will maintain up to 50% state of charge after 2 years if stored at room temperature (77°F). At temperatures lower than 77°F, storage times will be even longer. The cranking power of Odyssey batteries is double to triple that of equally sized conventional batteries, even when the temperature is as low as -40°F. 2 Year Warranty. Note: MJ=Metal Jacket

Part No.	Model	Dimensions	Weight	Price
11-08080	PC-625	6.7" x, 3.90" x 6.89".	13.2	$128.32
11-08081	PC-545	7/8" x 3-3/16" x 5 1/8"	11.7	$102.60
11-08082	PC-545MJ	7.0" x 3 3/8" x 5 1/8"	12.6	$116.29
11-02233	PC-680	7-1/2" x 3" x 6-5/8"	15 Lbs.	$117.20
11-05173	PC-925	6 15/32" X 6 7/8" X 4 7/8"	24 lbs	$170.87
11-01651	PC-925MJ	6-9/16"x 6-7/8"x 5-11/16"	24 Lbs.	$183.21
11-01945	SBSJ16	73/16"x 31/16"x 69/16"	15 Lbs.	$173.82

ODYSSEY PC680 BATTERY TRAYS

Made from billet 6061-T6 aluminum bar stock. They are milled (not cast).Offers a built in mount for either a battery ON/OFF Disconnect Switch or a Starter / Power Solenoid. Total weight of tray and hardware is 20 oz.

Purple ..... P/N 11-11557 ..... $119.95

Blue ..... P/N 11-11558 ..... $119.95

METAL JACKET (TRAY)

For Odyssey 680Amp battery

P/N 11-02234 ..... $22.50

HOLD DOWN BRACKET FOR ODYSSEY 680AMP BATTERY

This hold down bracket for the Odyssey PC 680 battery can be easily mounted in any orientation. Color: Black.

P/N 11-01853 ..... $38.75

YUASA BATTERY Y50-N18L-A-CX

The YuMicron CX generates more power, requires less maintenance, and lasts longer than any other conventional battery. Specifications: Battery Family: YuMicron CX, Battery Type: Y50-N18L-A-CX, Voltage: 12 Capacity: 20 Dimensions: 8.125" x 3.5625" x 6.4375" Weight: 11.2 lbs. Metric Dimensions: 205mm x 90mm x 162mm Metric Weight: 5.1 kg, Acid Volume: 47.3 oz., Amps: 2 Electrolyte needed: 47.3 oz. P/N 11-09496 ..... $98.75

YUASA BATTERY YB12C-A

YB12C-A YUASA Battery ships dry acid required. 12V, 5"d x 18"w x 14"h. Weight is 5.0 lbs.

P/N 11-07542 ..... $59.95

BATTERY TERMINAL TOOL

This unique tool is designed to provide positive tightening of battery terminals on all popular brands of lead/acid aircraft batteries without over-torquing and without the danger of an electrical short. The tool is made from steel for rugged service and is fully insulated with a rubber hand grip for protection against electrical shorts. P/N 12-16200 ..... $16.50

BATTERY CORROSION GUARD

Battery Corrosion Guard forms a thin protective coating that will neutralize battery acid on all treated areas. It is an excellent way to clean the battery, hold down straps, and all metal parts you want to protect including cables, clamps, box, and posts. Excellent for aluminum battery boxes. Widely used in the aircraft, truck, and boat industries.

3 oz. can ..... P/N 11-00310 ..... $16.65

8 oz can ..... P/N 11-00320 ..... $24.75

11 oz. can ..... P/N 11-09615 ..... $31.50

PULSETECH POWERPULSE

PowerPulse is not a charger. It's a performance device designed to help batteries charge faster and provide maximum performance and power. Used extensively by the consumers and the U.S. Military worldwide for almost ten years. The PowerPulse system can also be used together with an existing charging system. In fact, it will work even faster and stronger. This means batteries can be both charged and desulfated at the same time.

12V ..... P/N 11-07464 ..... $43.55

24V ..... P/N 11-10461 ..... $49.95

EL

BATTERY BOXES - BATTERIES

ALUMINUM BATTERY RACKS & BOXES

RACK

BOX

These top quality battery racks and battery boxes are constructed from 5052 aluminum and are heli-arc welded. A corrosion resistant epoxy powder coating is applied using a electrostatic process and oven baked for a long lasting finish. Complete hold down hardware kits are provided with all racks and boxes , and mount flange are pre-drilled for mounting ease using 3/16" diameter bolts. Use battery racks when mounting in a ventilated area. Use battery boxes when mounting battery in a confined area. where enclosed battery protection is required. Battery boxes include a 1/4" tube for venting and drainage. Specify make and model of battery and horizontal or vertical mount when ordering.

Battery Racks				Battery Boxes			
P/N	Model	Dims.	Price	P/N	Model	App.	Price
11-00105 Horiz.	HR-25	8"H x 5-3/16"W x 7-7/8"L	$124.95	11-00125 Side load	HB-25	8"H x 5-3/16"W x 7-7/8"L	$183.95
11-00110 Vertical	VR-25	8"H x 5-3/16"W x 7 7/8"L	$124.95	11-00130 Top Load	VB-25	8"H x 5-3/16"W x 7-7/8"L	$183.95
11-00115 Horiz.	HR-35	8"H x 5-3/16"W x 9-7/8"L	$132.85	11-00135 Top Load	HB-35	8"H x 5-3/16"W x 9-7/8"L	$188.95
11-00120 Vertical	VR-35	8"H x 5-3/16"W x 9-7/8"L	$130.95	11-00140 Top Load	VB-35	8"H x 5-3/16"W x 9-7/8"L	$188.95

CESSNA FIREWALL MOUNTED BATTERY BOX

Firewall battery box for Cessna Models 170, 170A, 170B, 180 thru 180K, 185 thru 185E, A185E, A185F STC Approved: SA02333AK-D. Note: Does not include battery. .....P/N 05-04766 ..... $483.00

BOGERT STAINLESS STEEL PIPER BATTERY BOXES

Replace Piper Battery Boxes * Metal & Plastic replacement approved. * Stainless Steel Construction * Brass screw-in vent-tubes. * Better than original drain tube * Battery Box Modification included.

BOX	MODEL		AIRCRAFT S/N
06-Bba	PA-18	A	ALL SN
06-Bba	PA-18	AS	ALL SN
06-Bba	PA-18	S	ALL SN
06-Bba	PA-18		18-1215-18-309025
06-BBc	PA-20	135	934 & Up
06-BBc	PA-20S	135	ALL SN
06-BBc	PA-22	108	ALL SN
06-BBc	PA-22	135	1021, 1022, 1024 AND UP
06-BBc	PA-22	150	ALL SN
06-BBc	PA-22	160	ALL SN
06-BBc	PA-22S	160	ALL SN
06-BBc	PA-22S	135	ALL SN
06-BBc	PA-22S	150	ALL SN
06-BBa	PA-24	180	103-243687
06-BBa	PA-24	250	ALL SN
06-BBa	PA-24	260	ALL SN
06-BBa	PA-24	400	ALL SN
06-BBa	PA-24	260B	ALL SN * Call For 4247-4300
06-BBa	PA-24	260C	ALL SN
06-BB	PA-28	140	ALL SN
06-BB	PA-28	150	ALL SN
06-BB	PA-28	151	ALL SN
06-BB	PA-28	160	ALL SN
06-BB	PA-28	161	28-7716001-28-8216236
06-BB	PA-28	180	ALL SN
06-BB	PA-28	181	ALL SN
06-BBa	PA-30		ALL SN
06-BBb	PA-32	260	ALL SN
06-BBb	PA-32	300	ALL SN
06-BBb	PA-32	301	ALL SN
06-BBb	PA-32	260B	ALL SN
06-BBb	PA-32	260C	ALL SN
06-BBb	PA-32	260D	ALL SN

BOX	MODEL		AIRCRAFT S/N
06-BBb	PA-32	260E	ALL SN
06-BBb	PA-32	300B	ALL SN
06-BBb	PA-32	300C	ALL SN
06-BBb	PA-32	300D	ALL SN
06-BBb	PA-32S	300E	ALL SN
06-BB	PA-32	301T	ALL SN
06-BBb	PA-32S	300	ALL SN
06-BBa	PA-39	(C/R)	ALL SN
06-BB	PA-28	235	ALL SN
06-BB	PA-28	236	ALL SN
06-BB	PA-28	140B	ALL SN
06-BB	PA-28	140C	ALL SN
06-BB	PA-28	140D	ALL SN
06-BB	PA-28	140E	ALL SN
06-BB	PA-28	150B	ALL SN
06-BB	PA-28	150C	ALL SN
06-BB	PA-28	160B	ALL SN
06-BB	PA-28	160C	ALL SN
06-BB	PA-28	160S	ALL SN
06-BB	PA-28	180B	ALL SN
06-BB	PA-28	180C	ALL SN
06-BB	PA-28	180D	ALL SN
06-BB	PA-28	180E	ALL SN
06-BB	PA-28	180F	ALL SN
06-BB	PA-28	180G	ALL SN
06-BB	PA-28	201T	ALL SN
06-BB	PA-28	B-235	ALL SN
06-BB	PA-28	C-235	ALL SN
06-BB	PA-28	D-235	ALL SN
06-BB	PA-28	E-235	ALL SN
06-BB	PA-28	F-235	ALL SN
06-BB	PA-28R	150	ALL SN
06-BB	PA-28R	200	ALL SN
06-BB	PA-28R	201	ALL SN
06-BB	PA-28R	201T	ALL SN
06-BB	PA-28RT	201T	ALL SN
06-BB	PA-28S	180	ALL SN
06-BBa	PA-30	B	ALL SN
06-BBa	PA-30	C	ALL SN

06-BB Black ..... P/N 11-04421 ..... $597.00
06-BBA White ..... P/N 11-06952 ..... $631.00
06-BBA Black ..... P/N 11-06953 ..... $619.00
06-BBA Stainless ..... P/N 11-06954 ..... $671.00
06-BBB White ..... P/N 11-06955 ..... $631.00
06-BBB Black ..... P/N 11-06956 ..... $618.00
06-BBB Stainless ..... P/N 11-06957 ..... $671.00
06-BBC White ..... P/N 11-06959 ..... $631.00
06-BBC Black ..... P/N 11-06958 ..... $618.00
06-BBC Stainless ..... P/N 11-06960 ..... $583.00

FIBERGLASS BATTERY BOXES

Battery box must be installed on any aircraft with four AN525-1032 bolts, through legs of box nwith AN365-1032 lock-nuts. Mounting bracket must be used when installing on firewall. When using the S-24 battery or equivalent, a filler (2" x 5" x 7") must be used, preferably acid resistant styrofoam. Dimensions: Outside (8-1/4" H x 5-5/8" W x 10-1/2" L) Inside (7-5/8" H x 5-7/16" W x 10-3/16" L) Note: For experimental aircraft only.
Fiberglass Battery Box ..... P/N 11-11007 ..... $107.85
Met-Co-Aire Battery Box White ..... P/N 11-05614 ..... $128.75

GELL CELL BATTERIES

• Maintenance-free operation • Excellent shelf life • Long cycle life • Can be mounted on its side • Delivered fully charged and ready for use • No corrosive gas generation • 300 Starting AMPS • Warranty 1 year or 100 hours. • Quality construction provides superior resistance to shock and vibration • DOT AND IATA approved for shipment by air as dry cells Note: FOR EXPERIMENTAL AIRCRAFT ONLY. P/N 11-03156 ..... $143.95

BATTERY BOX BUMPER SEAL

Battery Box Bumper Seal. 1103M foam with sticky back. Mil Spec: AMS3195E
Bumper Seal 1"
P/N 11-05613 ..... $4.95
Bumper Seal 1-1/2"
P/N 11-05612 ..... $4.95

AIRCRAFT BATTERY HYDROMETER

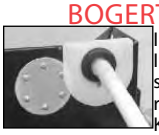
Special Tester designed for testing aircraft batteries. Requires only small amount of fluid & ideal for close quarters. Float calibrated from 1.100-1.300 Sp. Gr. in 5° intervals. ..... P/N 11-01674 ..... $26.24

AIRCRAFT BATTERY LOCK

Designed to disable the battery from the electrial system which cuts off all power to the aircraft unattended many pilots. However, many panel locks are easy to pick and pry open. The batter lock is constructed using a tough space age plastic polymer and a seven pin round ball bearing lock that is impossible to pick which in turn prevents aircaft theft and increases security. .....P/N 11-02753 ..... $336.00

BATTERY MAT

The Battery Mat is the world's only acid neutralizing and absorbing mat designed for use beneath any lead-acid battery. Each mat is simple, efficient, and cost-effective. It's ideal for use with all aircraft, as well as standard and heavy duty equipment. The acid-neutralizing and absorbing fabric is patented and manufactured with recycle material in the U.S. Battery Mat absorbs and neutralizes battery acid that may leak or result from a "boil over", prevents corrosion, cushions vibration shock, is simple to use and install, and is safe to handle. Width: 12". Sold by linear ft. P/N 11-00170 ..... $4.95 Ft



BOGERT BATTERY BOX NYLON FLANGES

Improve Starting Performance. Easier Removal & Installation of Battery. May prolong life of battery and starter. Less expensive to modify existing box than to replace. Compatible with our famous "Low Loss" Cable Kits! Eliminate extra connection on outside of the battery box. Do away with the troublesome braided negative strap.
Nylon Flanges replacement or experimental ..... P/N 11-02892 ..... $31.50
Nylon Flanges STC'd / PMA'd ..... P/N 11-02893 ..... $64.75

BOGERT CONCORDE BATTERY POST ADAPTERS

Aircraft using Concord CB-35A and RG-35A batteries must install two PN 1-1-6 adapter plates to the battery posts before completing the Battery Box Modification. These adapter plates raise the battery post height to equal the post height of standard G-35 series batteries. P/N 11-02891 ..... $49.75

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

BATTERY CHARGERS

BATTERY CHARGERS BY SCHAUER

Over 70 years of manufacturing experience assures, the user of the finest line of battery chargers—solid state circuitry, non-aging silicon rectifiers at low prices. All chargers furnished with complete operating instructions. One year warranty

P/N 11-00885
Shown

JAC1212, JAC0524, & JAC0724 - Fully Automatic - World-Wide Universal Input, Electronic ChargerIntelligent chargers follow battery impedance to end of charge cycle for all battery types. Fully automatic. Red LED indicates AC power on, yellow LED indicates battery is charging, green LED indicates float mode. Aluminum case.

Amps	Volts	Size	Weight	Part No.	Price
12	12	6.5"W x 3.5"H x 1.8"D	1.8 lbs.	11-00890 (2)	$76.65
5	24	6.5"W x 3.5"H x 1.8"D	1.8 lbs.	11-00885 (1)	$79.50
7	24	6.5"W x 3.5"H x 1.8"D	1.8 lbs.	11-00889 (1)	$89.75

(1) DC cordsets 3' long: with ring terminals or XLR connector.
(2) With stripped leads

MODEL JAC2024H - Intelligent chargers follow battery impedance to end of charge cycle for all battery types. Fully automatic. Green LED indicates AC power on, yellow LED indicates battery is charging, yellow LED off indicates float mode. Charge control: constant current charge to a constant voltage, then to a float standby. Current limiting. Fully automatic 3 stage charger can be left on the battery in maintaining/float mode. Can be set for any type lead acid battery, including conventional, maintenance free, deep cycle, gelled-type, valve regulated batteries. Cyclic voltage: FLOODED 2.5 volts/cell; GEL & AGM 2.4 volts/cell. 2.6 volts/cell for 36 & 48 volt batteries. May be preset to customer's specification for battery type. Not intended for use as a DC power supply. Continuous - 100% duty cycle. Low voltage start: will start charging a deeply discharged battery with terminal voltage less than 4 volts. Reverse polarity and short circuit proof. Aluminum case. AC Input 115/230 volts, 50 or 60Hz Input voltage autosensed. 20 AMPS / 24 Volts. 10"W x 7.5"H x 3"D. 6.5 lbs P/N 11-00891 ..... $279.95

MANUAL CHARGERS

Manual chargers must be disconnected when battery is charged to prevent overcharging and damage to the battery. Normal indcation that battery is charged is when ammeter stabilizes for one hour.

SCHAUER 1A AUTOMATIC BATTERY CHARGER

This fully automatic charger can be left on the battery indefinitely. Features include indicator lights, overload protection, reverse polarity protection, and small size (4" x 3" x 2"). Charges, maintains, and conditions 12V batteries in stored vehicles, such as aircraft, cars, motorcycles, mowers, etc. Ten foot long cordset includes quick change battery clips and ring terminals. Wt: 2 lbs. P/N 11-04407 ..... $31.80

BATTERY AND ALTERNATOR CONDITION TESTER

Instant and accurate battery condition status: indicates if battery is "healthy" or in need of charging Instant status of your alternator/charging system: determines whether battery or alternator is at fault. Non-Aviation / Not for Aircraft.
P/N 11-04302 ..... $15.60

ZEUS POWER BANK BATTERY CHARGER

The ZEUS Power Bank is a portable battery charger that can charge many electronic devices via USB port, such as MP3 players, mobile phones, cameras, portable gaming devices, and other USB compatible devices. The ZEUS Power Bank comes with everything you see in the photo , a user guide and travel bag. It's easy, portable and perfect for anyone on the go! Ideal for long flights, outdoor activities where anytime anywhere remote charging is needed. NOTE: Recharge the power bank through any computer via USB port or with a 5V wall adaptor. Not all USB Wall chargers will work with the power bank and it may be damaged if not charged with a compatible USB power source. P/N 11-09964 ..... $59.95

THE BATTERY MAINTAINER SOLAR BATTERY CHARGER

The Battery Maintainer is the best device available to ensure that your battery will always be "topped off" and fully charged. It has the capacity to keep any 12 volt battery charged with as little as one full hour of sunlight per day. The life of your battery will be dramatically extended by using the Battery Maintainer. It features a diode to prevent the battery from discharging on cloudy days or at night. It is constructed with a glass face and black molded base. Size: 5-1/4" x 11" x 3/8" thick. Output: 100 ma 16 VDC full sunlight. Connects to battery via 12V "hot" cigarette lighter plug in aircraft. For 24 volt use two units. LED Light not included. ..... P/N 01-28312 ..... $42.85

Accessories	Part No.	Price
DC CIG Jack W/Cover & Fuse Wiring	11-06356	$11.00
Bracket	11-06358	$3.25
DC Power Plug	11-06361	$4.75
Eyelet Red+Black Battery Eyelet Connection W/ Wiring	11-06363	$12.99
Fused Pre-Wired 24VDC Power Point (With Jacks installed)	11-06364	$29.95
Fused Pre-Wired 12VDC Power Point (With Jacks Installed)	11-06365	$29.95
12FT Soloar panel Extension Cable	11-06366	$19.95

SOLARGIZER AVIATION BATTERY LIFE EXTENDER

Solargizer is the only one of its kind in the world. It is not a battery charger, but a proven, patented electronic device designed to eliminate the #1 cause of battery problems and failures – sulfation. Whether you deal with aircraft, ground equipment, or virtually any other type of vehicle, Solargizer will dramatically extend the like of your battery, increase performance efficiency, reduce recharge time, extend battery capacity so your battery runs longer between charges, and even maintain a charge indefinitely no matter how long your aircraft or vehicle sits unused. It even protects our environment by reducing the number of batteries needlessly discarded every year.
24 Volt w/ Battery Clamps ..... P/N 11-11692 ..... $267.95

MICRO-START PERSONAL POWER SUPPLY XP-1

Worlds smallest Jump Starter and Personal Power Supply. Just charge it once and take your power where ever you go. So small it fits in your pocket, yet so powerful it can jump-start Motorcycles, Cars and Trucks! Amazingly, it will also power and charge your electronics. Built in flashlight with an S.O.S. pattern. Whatever you do, don't get stuck without back-up power again!
P/N 11-12103 ..... $143.95

EMERGENCY CHARGE SYSTEM EBPA299

Keep cellphones and all personal devices charged. When electricity is unavailable simple attach 12volt (car style) adapter to the handheld power pack, plug in and go stay connected 300 hours of talk/standby time (Results may vary)• 9 AA Batteries included.
P/N 11-04739 ..... $39.95

XTREME CHARGE X2 DUAL BATTERY CHARGER

The Xtreme Charge X2 is a dual-station, 12-volt maintenance charger. The Xtreme Charge X2, works with all types and sizes of 12-volt lead-acid batteries.
P/N 11-06866 ..... $179.75

KELLY BC3000 BATTERY ANALYZER

"Your Battery M.D." Portable and cordless the BC-3000 is a lightweight fully automated battery analyzer assessing the health of all lead-acid aircraft batteries with an ampere hour range of 1-59. Connect the battery using the included quick battery connection adapters, the unit automatically senses and selects 12 or 24 volts, set the battery rating and press start, that's it. One hour later your test is complete and the health of your battery is displayed P/N 08-07161 ..... $1,596.00

HOME & AUTO CHARGER

PERFECT COMPANION FOR MRX! A home and auto charger perfect for charging on the go. Charges 2 or 4 AA and AAA batteries in 2-3 hours at home or away. Comes with 4 AA batteries and both car power adaptor & home charge adaptor. Charge indicators show when batteries are ready. "Trickle charge" capability keeps batteries at full charge.
P/N 11-04524 ..... $20.75

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BATTERYMINDER® BATTERY CHARGERS

AVIATION SPECIFIC CHARGER / MAINTAINER / DESULFATORS

These ensure 100% charge to sealed and wet-cell lead-acid aviation batteries made by Concorde, Gill, Hawker, Odyssey, etc. Temperature compensation prevents overcharging. Designed to be left connected when plane is hangered. Easy attachment to battery with supplied connectors. Patented high frequency pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure.
Note: Aviation batteries require different charging voltages than automotive, marine or other battery types. Standard chargers can, over time, severely shorten battery life and performance. Specifically designed aviation chargers are multi-stage (five stages), microprocessor controlled and temperature sensing (at the battery). They are "very smart", yet simple to operate. These are the only type recommended / approved by major battery manufacturers.

Aviation Specific Models	
Model	Battery Types
S2	Standard Aviation (Concorde, Gill, etc.)
S3	AMG "Pure Lead" Aviation Batteries (Gill 7000 Series, Odyssey, Hawker, etc.)

BATTERYMINDER® INTERNATIONAL "E" SERIES 12V AND 24V BATTERY CHARGERS

Plug 'n Run - No buttons to push! 220-240 Volt versions of the 12-V and 24-V are available. Specific to sealed or wet aircraft batteries only. CE Approved, with easily replaceable cord set to match country of use. Designed in concert with Concorde, Gill and Odyssey. One-year 100% money back guarantee, five-year "no hassle" warranty.

BatteryMINDer E12248-AA-S2 ..... P/N 11-09379 ..... $197.95
BatteryMINDer E12248-AA-S3 ..... P/N 11-09380 ..... $197.95
BatteryMINDer E24041-AA-S2 ..... P/N 11-09381 ..... $197.95
BatteryMINDer E24041-AA-S3 ..... P/N 11-09382 ..... $189.95

BATTERYMINDER® NON-AVIATION MODELS

For your car, truck, boat, motorcycle, motorhome golf car, farm equipment, ATV, an more!

5-STAGECONSTANTCURRENT-VOLTAGE CHARGER/MAINTAINER/DESULFATOR - Microprocessor controlled. For all sealed, AGM, Gell and flooded (wet cell) lead-acid batteries including Optima, Odyssey and Interstate AGMs. Actively monitors your battery's voltage, amperage acceptance and temperature at all times, these chargers work through a series of charging and diagnostics stages. When used as a maintainer, it is guaranteed to maximize your battery's life and storage capacity. The temperature compensated long-term float (maintenance) stage can add years of service, and patented full-time high frequency sweep pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure. Not for Aviation. One-year 100% money back guarantee, five-year "no hassle" warranty. Qualifies for FREE DMM

BatteryMINDer 12248 (12V) ..... P/N 11-02006 ..... $146.85
BatteryMINDer 24041 (24V) ..... P/N 11-02007 ..... $149.95

BATTERY AND ALTERNATOR CONDITION TESTER - Instant and accurate battery condition status: indicates if battery is "healthy" or in need of charging or replacement. Determines whether battery or alternator is at fault. Non-Aviation / Not for Aircraft. ..... P/N 11-04302 ..... $15.60

BATTERYMINDER® S3 12V AVIATION SOLAR CHARGER / MAINTAINER / DESULFATOR FOR AGM

Actively monitor you battery's voltage any time the sun is up. The internal program adjusts its output several times a second based on this reading to quickly and correctly charge your battery. When used as a maintainer, it is guaranteed to maximize your battery's life and storage capacity. The long-term float (maintenance) stage can add years of service. For AGM "Pure Lead" Aviation Batteries, such as Gill 7000 Series, Odyssey, Hawker, etc. One year 100% money back guarrantee. Five year "no hassle" warranty.

5 Watt ..... P/N 11-09898 ..... $163.95
15 Watt ..... P/N 11-09901 ..... $215.95

BATTERYMINDER® U.S. SERIES 12V AND 24V BATTERY CHARGERS

Plug 'n Run - No buttons to push! Precision-set for Standard Aviation Batteries and using an array of microprocessor controlled sensors. Actively monitor your battery's voltage, amperage acceptance and temperature at all times. When used as a maintainer, it is guaranteed to maximize your battery's life and storage capacity. The temperature compensated long-term float (maintenance) stage can add years of service, and patented full-time high frequency sweep pulse desulfation is designed to reverse and eliminate battery sulfation, the #1 cause of early battery failure. One-year 100% money back guarantee, five-year "no hassle" warranty. Qualifies for FREE DMM

Battery Minder 12V Gill 12248-AA-S2 ..... P/N 11-07739 ..... $189.95
Battery Minder 12V E12248-AA-S3 ..... P/N 11-07742 ..... $189.95
Battery Minder 24V Gill 24041-AA-S2 ..... P/N 11-07740 ..... $189.95
Battery Minder 24V 24041-AA-S3 ..... P/N 11-07741 ..... $189.95
Battery Minder Airframe Interface Kit ..... P/N 11-10835 ..... $59.95

BATTERYMINDER® FOR CONCORDE

For all types of 24 Volt Concorde® Aircraft Batteries including sealed AGM-maintenance-free and Flooded Electrolyte CB series. Ambient Temperature Sensor automatically reduces or increases BatteryMINDers' output voltage to ensure battery is never over or under charged regardless of Hi/Low temperature extremes. Auto restart after a power failure. Safely charges up to 200% faster than conventional chargers. Maintains up to 2 batteries at a time (parallel connected) with use of part BC2AY combo connector assembly. Automatically dissolves power-robbing sulfation using safe low voltage pulse technology (U.S. Patented). Microprocessor controlled pulsed output ensures 100% full charge. Temperature compensation extends battery life by more than 200 Cycles (full-charge-discharge cycles) with ATS temperature sensor. Low monthly operating costs. Provides short circuit, spark, polarity reversal, and thermal runaway protection. Maximizes battery life and capacity; reconditions most weak batteries. FCC certified.
In the box: BC-AA: Insulated battery clip cord set with fused qwik-connect plug, 2ft. ATS-1: Ambient Temperature Sensor (installed)

Battery Minder 12V 12248-AA-S5 ..... P/N 11-10852 ..... $189.95
Battery Minder 24V 24248-AA-S5 ..... P/N 11-10851 ..... $189.95

BATTERYMINDER® POWER SUPPLY / CHARGER / MAINTAINER / DESULFATOR

#1

Supplies up to 25 amps of ground power from 100-240 VAC, as far as 300 feet (91.44 meters) from the source. Approved by the major aircraft battery manufacturers in the U.S., it safely charges all 24 Volt sealed, AGM, Gell and flooded (wet cell) lead-acid batteries including Optima, Odyssey and Interstate AGMs. Also for two 12 Volt series-connected. Dedicated desulfation, optional equalization and long-term float (maintenance) mode help recover lost capacity enabling many marginal batteries to pass FAA airworthiness test. Power supply mode enables use of glass panel displays and other avionic electronics without draining your battery. LCD panel shows battery voltage, amperage, temperature, time and amp-hour acceptance. One-year 100% money back guarantee, fiveyear "no hassle" warranty. Qualifies for FREE DMM

BatteryMINDer 28252-AA ..... P/N 11-09378 ..... $819.95

BATTERYMINDER® AVIATION ACCESSORIES

#2 #3 #4 #5

Accessories for use with 28252-AA ONLY				
1	11-09561	ELCTC ELCON Type Connector	optional	$62.50
2	11-09558	ABS-2825 Temperature/Voltage Sensor	included	$31.85
3	11-09559	A2ELCON Anderson Gray to ELCON-type	optional	$86.75
4	11-09560	A2RT 11/32" Ring Terminals	optional	$34.50
5	11-09562	A2GPU-1 Anderson to "Cessna"-type GPU Plug Assembly	optional	$104.75

BATTERYMINDER® CIGARETTE LIGHTER ADAPTER

12-V / 24-V w/15A Pwr Plug. Works with ALL BatteryMINDer products.
P/N 11-07209 ..... $10.99

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AVTEK PRODUCTS —BATTERY CHARGERS

AVTEK STANDBY ELECTRICAL SYSTEM

AvTek uses rechargeable, dependable, deep discharge batteries as the power source in its Standby Electrical System. They are sealed and maintenance free. These are deep-discharge batteries, not like your 'WET-Acid' cold-cranking car battery, and unlike Nicads, there will never be a memory problem with lead acid. All the potential stored energy will be available to your dead panel. Power is delivered through the cigarette lighter. No power wil be discharged through the cigarette lighter greater than what it takes to heat up the lighter element in the first place. AvTek's design is much more than a battery in a black box. AvTek uses a circuit board to control the power to the buss. This Smart board monitors the amperage demand at an efficient, reliable rate to insure a safe IFR descent. PCB gives you protection while delivering reliable, dependable source of power for 60 mins. or longer to your IFR panel.

28V system.....P/N 11-01262.....$695.00

AVTEK 1ST ALERT ELECTRICAL FAILURE SYSTEM

An early warning detection system that is simple, flawless, & reliable. Detects alternator failure, broken/slipping belts, leaky diodes, regulator failure or if you forgot to turn OFF the master switch after tie down. Uses a reliable MicroCircuit and will never need repair. Has a pulsing red panel mounted LED that is larger and 15 times brighter than normal LEDs and will alert you at the first sign of trouble. Weighs only 1.5 oz. and installs quickly. The LED begins to pulse every time you first turn on the master switch and hit the starter key/button and will go out as the Alternator/Generator comes on so you know everything is alright before you depart. First Alert is now armed & ready to detect any in-flight electrical problems. Size: 3.25" length x 2" width x 1.25" height. Indicate your aircraft voltage when ordering. P/N 11-01259.....$159.00

AVTEK BONDING AND GROUND KIT

Do your Panel Instruments Bounce and become erratic? Does your Starter turn your Engine SLOWLY and you have a new fully charged battery? Do you see an ugly corroded Battery Post soon after you clean the Post? These are symptoms of BAD Ground/Bonds. When the Resistive Corrosion is developed at the Starter the result is slow turning during starts. Mechanics miss-diagnosing the problem and a NEW Starter is purchased needlessly. Kit includes: * FAA-APPROVAL * Three (3) Jumper One for the panel, starter and your battery...and Aluminum Fasteners * DVD step by step how to Power-Point Presentation * Sealant . P/N 11-07359.....$125.50

PULSETECH QUADLINK MULTI STATION CHARGER KITS

The 4-Station QuadLink 12V Battery Maintenance Charger Kit includes an Xtreme Charge Battery Charger & Desulfator and a QuadLink 4-Channel Battery Multiplier enabling you to easily charge, maintain and desulfate up to FOUR 12V batteries at a time without the expense of buying three additional chargers or the hassle of monitoring and swapping batteries on a lone charger.

The 8-Station QuadLink 12V Battery Maintenance Charger Kit includes both an X2 Xtreme 2-Station Pulse Maintenance 12V Battery Charger and two QuadLink 4-Channel Battery Multiplies allowing you to charge, maintain and desulfate up to EIGHT individual 12V (VRLA, AGM and flooded cell) batteries, up to FOUR 24V commercial systems composed of two 12V batteries connected in series such as those in generators, buses, heavy trucks and fork lifts or 12V batteries in 36 and 48V series connected configurations.

4 Station.....P/N 11-11379.....$199.75
8 Station.....P/N 11-11380.....$399.95

PORTABLE STARTING SYSTEMS

KWIKSTART MODEL 6255 - Exclusive Heavy-Duty Sealed Lead Acid/AGM Battery. Built-in Charger recharges unit with AC cord (included). Instantly Jump-Starts WITHOUT the need for another vehicle. 12 Volt DC Accessory Outlet to Power and/or recharge DC Electronics. 1700 Peak Amps. LED Battery Status Indicator. 32" Heavy-Duty Cables for True Portability and Technician Ease of Use. Unit includes DC to DC cigarette lighter cord Patented. Weight: 22 LBS

P/N 11-08698.....$183.75

MODEL 6275 KWIKSTART - Two 12 Volt 22 AH Heavy-Duty Sealed Lead Acid/AGM Battery provides "Best in Class" Performance. "Smart" 1000 mA Internal Charger with Built-In Overcharge Protection - Prolongs battery life. Up to 100 Hours of Portable 12 Volt DC. Two Position "ON/OFF" Switch with Easy-to-Read LED Battery Status Indicator. 12 Volt DC Accessory Outlet to Power and/or Recharge DC Electronics. Heavy Duty Clamps with 2AWG 66" Long Cables. Use Any Standard Extension Cord to Charge. Unit includes DC to DC cigarette lighter cord. P/N 11-08699.....$353.00

MODEL 6295 KWIKSTART - Two 12 Volt 22 AH Heavy-Duty Sealed Lead Acid/AGM Battery provides "Best in Class" Performance. Jump start 24 volt systems with over 700 CCA of power. "Smart" 1000 mA Internal Charger with Built-In Overcharge Protection - Prolongs battery life. Up to 100 Hours of Portable 12 Volt DC. Three Position "24V/OFF/12V" Switch with Easy-to-Read LED Battery Status Indicator. 12 Volt DC Accessory Outlet to Power and/or Recharge DC Electronics. Heavy Duty Clamps with 2AWG 66" Long Cables. Use Any Standard Extension Cord to Charge. Unit includes DC to DC cigarette lighter cord

P/N 11-08701.....$453.00

BATTERY TENDER CHARGER

BATTERY TENDER PLUS - 6V @ 1.25A 12V @ 1.25A. The Battery Tender Plus is a 1.25 amp battery charger designed to fully charge a battery and maintain it at proper storage voltage without the damaging effects caused by trickle chargers. Included is a quick connect harness for hard to reach areas. *DO NOT USE P/N 11-03015 WITH GILL OR CONCORDE AVIATION BATTERIES.

Voltage	Amps	Description	Part No.	Price
12Volt	1.25A	Battery Tender Charger	11-03157	$45.85

POWER TENDER PLUS - 12V @ 5A 24V @ 2.5A WATERPROOF, Shock & Vibration Resistant, Lightweight (LESS THAN 4 POUNDS), compact charger designed for either portable operation or permanent mounting. Charges and maintains both flooded and sealed, maintenance free, AGM, lead acid batteries. Float / Maintenance function maintains batteries at proper storage voltage without the damaging effects caused by trickled chargers. The Power Tender PLUS is easy to use, it's rugged, its compact, it's packed with power, and it's backed by the reputation of the undisputed battery charger industry leader, DELTRAN. Note: Part does not come the Alligator clips. PN 11-06403. Note: Not for use with Gill or Concorde Aviation Batteries.

Voltage	Amps	Description	Part No.	Price
12Volt	5A	Power Tender Plus	11-03016	$86.75
24Volt	2.5A	Power Tender Plus	11-03015	$84.75

Power Tender Alligator Clip.....P/N 11-06403.....$4.60

BATTERY TENDER JUNIOR

120 VAC /60 Hz input. Includes Ring Terminals and Alligator Clips with BLACK (6V & 12V) QDC. Note: Not for use with Gill or Concorde Aviation Batteries.

6V, .750 Amps.....P/N 11-05163.....$31.50
12V, .750Amps.....P/N 11-05164.....$28.50

AVIATION SOLAR CHARGER / MAINTAINER / DESULFATOR

PANEL SERIES- 12 VOLT, 5 WATT & 15 WATT

Actively monitor your battery's voltage any time the sun is up. Quickly and correctly charge your battery. The long-term float (maintenance) stage can add years of service. One-year 100% money back guarantee, five-year "no hassle" warranty. Qualifies for FREE DMM

BatteryMINDer SCC005-S2.....5 Watt.....P/N 11-02008.....$163.95
BatteryMINDer SCC005-S3.....5 Watt.....P/N 11-09898.....$163.95
BatteryMINDer SCC015-S2.....15 Watt.....P/N 11-09899.....$215.95
BatteryMINDer SCC015-S3.....15 Watt.....P/N 11-09901.....$215.95

FREE DIGITAL MULTI-METER (DMM) DT-830B when you purchase a select BatteryMINDer unit and register your warranty at www. BatteryMINDers.Com. Get seven functions and nineteen ranges to cover AC and DC voltage, resistance, DC amps, battery and diode testing. Includes 23" leads and low battery indicator. Requires one 9-V battery (not included).

EL

OPTIMATE DIAGNOSTIC DESULFATING CHARGERS AND TESTERS

OPTIMATE 5 can SAVE a neglected / sulfated* leadacid battery unable to accept charge from the engine charging system (even after jump starting). The multi step charging system is suitable for any type of 12V lead-acid battery. During the 24/7 auto storage control the battery is tested every hour and recharged as necessary. The universal input system accepts AC power between 100 to 240VAC (incl. generator / inverter). Hook it up anywhere in the world, walk away, OptiMate5 does the rest, automatically, safely. Recommended for all lead-acid batteries from 7.5Ah – 120Ah. P/N 11-07220 ..... $79.85

OPTIMATE 6 can SAVE a neglected / sulfated* leadacid battery unable to accept charge from the engine charging system (even after jump starting). The micro processor controlled multi step charging system with cell equalizing is suitable for deep cycle and starter (SLI) batteries and the ampmatic auto current control takes the guesswork out of charge current selection. During the continuous maintenance and testing cycle the battery is tested daily and recharged as necessary. Hook it up, walk away, OptiMate6 does the rest, automatically, safely. Recommended for all lead-acid batteries from 15Ah – 240Ah.

P/N 11-07221 ..... $107.90

OPTIMATE PRO-S has a charging system able to save a neglected *sulfated battery that cannot accept charge from a standard charger or the engine charging system. Battery power is optimized during bulk, absorption & cell balancing charge modes, and then tested to verify charge retention. Battery life is extended if left connected to OptiMate PRO-S when vehicle/craft/equipment is not in use. Initializes, desulfates & charges 1 x 12V battery at a time – from small to large.

P/N 11-07222 ..... $168.75

OPTIMATE PRO-2 OptiMate PRO-2 initializes, desulfates & charges 2 x 12V batteries at a time or a 24V system, made up of 2 x 12V batteries. The OptiMate Pro-2 has two independent charging systems able to save a neglected *sulfated battery that cannot accept charge from a standard charger or the engine charging system. Battery power is optimized during bulk, absorption & cell balancing charge modes, and then tested to verify charge retention. Battery life is extended if left connected to OptiMate PRO2 when vehicle/craft/equipment is not in use. Note: This charger cannot be used on a 24V battery. A battery discharged over time that has built up chemical resistance to charging, but otherwise undamaged and measuring at least 2V. PN 11-07223 ..... $236.95

*A battery discharged over time that has built up chemical resistance to charging, but otherwise undamaged and measuring at least 2V.

AUXILIARY POWER UNIT (APU) & BATTERY CHARGER

Designed to supply filtered DC bus power through standard APU receptacle in private and commercial aircraft. Up to 25 or 50 amp is available for operating avionics and flight control systems when the master switch is activated. It can also charge the battery through the plug at a 10 amp rate. Output is current limited, and will withstand starting loads. Voltage is limited to prevent battery overcharging.

DC Current and voltage are displayed on panel meters, voltage accurate to 00.00 NOTE: Available with piper plug too.

Model	P/N	DC Amps	DC Volts	AC Power	Dimensions H.W.D.	Wt.	Price
Single Pin Plug 14v 25amp	11-07068	25	14	117 volts 60hz. 3 amps	8.5x10x12	22	$645.00
3 Pin Plug 14v 25amp	11-05662	25	14	117 Volts 60hz. 3amps	8.5x10x12	22	$596.00
Single Pin Plug 28v 25amp	11-07067	25	28	117 volts 60hz. 6 amps	8.5x10x12	33	$696.00
3 Pin Plug 28v 25amp	11-08146	25	28	117 volts 60hz. 6 amps	8.5x10x12	33	$696.00

SOLAR PULSE

Specifications	SolarPuse 2W	SolarPuse 5W
Pulse Frequency:	22-28 kHz	22-28 kHz
Max Charging DC Voltage:	16.5 V, 250 mA	16.5 V, 350 mA
Reverse Polarity Protected:	Yes	Yes
Circuit Box Dimensions:	3.25" x 2.25" x 1.5"	3.25" x 2.25" x 1.5"
Solar Panel Dimensions:	4.75" x 8.56" x .125"	8.875" x 8.75" x 0.125"
Box to Lugs Wire Length:	3 feet	3 feet
Box to Panel Wire Length:	17 feet	17 feet
Termination:	.375" Lugs	0.375" Lugs
Weight:	1.35 lb.	1.65 lb.

* Unique solar charger provides clean, quiet energy
* Cleans battery plates of large, damaging lead-sulfates so batteries can accept, store and release MAXIMUM power when you need it
* Helps offset energy-robbing key-off parasitic loads (see chart below)
* Works with all lead-acid batteries (flooded cell, AGM and gel)
* Ideal for virtually any kind of vehicle and equipment in areas with out access to electrical power
* Low-profile industrial-strength solar panel mounts flat (no frame required) so it's virtually indestructible
* Prevents the normal loss of battery power on vehicles stored out side no matter how long they sit unused — even months at a time
* Helps extend battery life up to 3X longer
* Choose from three models: 2-Watt, 5-Watt and 6-Watt
* The 5-Watt solar panel is almost HALF THE SIZE of other 5-watt panels yet offers full 5-watt power
* The smaller 5-watt panel provides more installation options
* The 6-watt model is ideal for emergency rescue and law enforcement vehicles because it has a unique rectangular solar panel designed to easily mount on any light bar
* 2- and 5-Watt models include 17-feet of wire between circuit box and solar panel, and the 6-Watt includes 14 feet of wire
* Five-year limited warranty

2WATT ..... P/N 11-07120..... $89.95
5WATT..... P/N 11-07121..... $159.75

REDIPULSE PRO-12 CHARGE/MAINTENANCE SYSTEM

The PulseTech Pro-12 Charge/Maintenance System. It is designed to keep new batteries "factory-fresh" while they rest on the shelf waiting to be installed or sold. Batteries that sit idle suffer from damaging sulfation buildup (lead sulfate deposits on the battery plates). This buildup is the main cause of battery problems and failure. The Pro-12 uses our scientifically-proven ReNew-IT Pulse Technology to keep these deposits off the plates. By removing these energy-dampening deposits, your batteries are stronger than ever. This means your "shelf-life" warranty issues and other battery-related expenses are reduced dramatically. P/N 11-07122..... $169.95

SUNSOCKET ENERGYBAR 250

The SunSocket™ EnergyBar™ 250 is the first & only high capacity portable battery pack powerful enough to be classified as a "generator", and is extremely lightweight and safe for aircraft. It utilizes lithium iron phosphate battery technology, which is stable and non-hazardous (unlike other lithium-ions). It can provide up to 30 hours of power for many USB devices, and up to 5-6 hours of power for larger electronic equipment like thermal coolers or even laptops. 20AH Lithium Iron Phosphate (LiFePO4) battery technology safe for private aircrafts and even commercial airline travel. 4x 2.0A USB sockets. 12V DC lighter socket. Universal AC 100W inverter (Can adjust voltage). Weather-resistant neoprene carrying case included. Can be recharged via a wall outlet. Can be recharged via a 12V DC lighter socket in your aircraft or car. Can be recharged with portable solar panels and the SunSocket™ Solar Generator. Ultra slim and lightweight design for easy storage and portability. Can be Daisy Chained to increase power duration. Dimensions - 2"H x 16.5"L x 6.3"D. Total Weight - 8 lbs.

P/N 11-12101 ..... $329.99

SUNSOCKET™ SOLAR PANEL KIT FOR ENERGY BAR

The EP-55 Solar Panels are lightweight, weather resistant, 55-watt portable solar panels designed to offer a fast charge to the EnergyBar™ 250 battery pack. Weighing only 9 pounds, these portable solar panels will fully charge your EnergyBar™ 250 in 6 hours with good direct sunlight, offering you unlimited power from the sun. The EP-55 also has a built-in MPPT charger with SOLMAX™ technology, which maximizes the consistent charge to the EnergyBar™ 250 battery pack. This MPPT box also has a built in LED light to let you know if you are achieving good sunlight. 55W Mono-Crystalline PV Array. SOLMAX™ MPPT Charge Controller. 6 foot charging cable. Weather-resistant design.

P/N 11-12216 ..... $249.00

CASE FOR ENERGY BAR

Water proof, weather proof, durable hard case offers the ultimate protection for your EnergyBar 250 and adapters. The case also offers some room to store your phones and tablets.
Weight: Standard: 8.17 Lbs
Dimensions :Standard: 20.5in x 15.75in x 5.7in

P/N 11-12217 ..... $149.99

12V DC CHARGING ADAPTER FOR ENERGY BAR

The DC-154 is a customer DC charger that serves two functions for your EnergyBar™ battery pack.
Function 1: The DC-154 allows you to charge your EnergyBar™ directly from the 12V cigarette lighter socket in your vehicle or aircraft in about 5 hours.
Function 2: The DC-154 also allows you to daisy-chain more than one EnergyBar™ in series to get longer duration of power.

P/N 11-12218 ..... $39.99

SUNSOCKET DUO-FLEX SOLAR CHARGER

The DUO-Flex Solar Charger is the most innovative and versatile portable solar charger to hit the market. Extremely lightweight, durable, and powerful, the DUO-Flex offers effective solar power, and an 8000mAh removable battery pack to charge any USB device such as smart phones, tablets, small cameras, LED lights, or even small speakers.
The flexible 13W mono-crystalline PV panels offer the most rugged and durable solar power, with three different configurations, which offer the ultimate versatility to the user.
Fold the DUO-Flex in half and strap to small backpacks. Unfold the DUO-Flex into a square configuration for larger backpacks. Lastly, you can unfold the DUO-Flex into a long configuration for vehicle dashboards or even strapping to poles.
Features:
- 13W flexible mono-crystalline PV array
- 8000mAh removable LiPo battery pack with dual USB Output
- Ring holes at every corner for easy attachment
- 4 Small Carabiners

P/N 11-12219 ..... $159.99

SUNSOCKET™ SUN-TRACKING SOLAR GENERATOR

The SunSocket™ Sun-Tracking Solar Generator is the first and only portable all-in-one solar generator that utilizes proprietary sun-tracking technology that automatically rotate 60-watt mono-crystalline panels to the face directly towards the sun all day long, increasing the efficiency of the generator by up to 30%. Built into this generator is a lightweight hazard-free lithium iron phosphate battery, which is completely safe for private aircrafts and even commercial flights. All of the necessary output sockets are built into this unit for you to charge any of your portable electronic devices simultaneously. Power anything from multiple phones & tablets, or even a laptop or lighting for your whole campsite. The solar panels offer you an instant recharge anywhere you are with sunlight.
Features:
- Automatic sun-tracking rotating panels achieve 30% more power throughout the day.
- 20AH Lithium Iron Phosphate (LiFePO4) battery technology safe for private aircrafts and even commercial airline travel.
- 4x 1.1A USB sockets.
- 12V DC lighter socket.
- Universal AC 100W inverter (Can adjust voltage).
- All-in-one design. Solar panels, inverter, battery, are all built into the case.
- Can also be recharged from a wall outlet.

P/N 11-12099 ..... $1,999.99

DUAL USB PANEL MOUNT CHARGING JACK

The panel mount charging jack is used to provide power for operating and charging mobile devices. It can be used on experimental aircraft, cars, boats, motorcycles, recreational vehicles, or anywhere else that has 12-24 volt DC power available. It is made to simply plug into a hole for panel mounting. Two standard USB outlets are provided. It is compatible with any device that uses a standard USB cable for power such as cell phones, tablets, portable music players, etc.

P/N 11-12631 ..... $29.95

RED BOX START POWER RB25A POWER UNITS

The Red Box hand portable packs are some of the most powerful Hand Portable Packs available worldwide. Red Box uses the latest in military aerospace technology to achieve a very high power to weight ratio. These power packs are designed for starting of piston, turboprop or turbine aircraft and helicopters in the field or in remote locations and Red Box units may be carried safely on board all aircraft. The power packs are "all weather" units and being modular, can be used in single or dual format. They can be used or stored in any orientation, even inverted. Cells used are cleared as non-hazardous cargo for carriage in the aircraft. They are able to operate in extremes of temperature and have excellent standby characteristics. They are maintenance free and do not require cycling. They can be re-celled "on condition" at any Red Box service center in the world and are designed to give years of repeated service. In addition to aviation, these highly portable units can be used with Armored Fighting vehicles and Military equipment. They can be recharged from the automatic charging system, which is supplied in the package, or from any vehicle using a suitable interface.

Model	Description	Part No.	Price
RB25A	12V Power Unti	11-09806	$1,281.00
RB25A	24V Power Unit	11-09807	$1,281.00
RB50A	12V Power Unti	11-09814	$2,357.00
RB50A	24V Power Unit	11-09815	$2,588.00
RB75A	12V Power Unti	11-09819	$2,665.00
RB75A	24V Power Unit	11-09820	$2,995.00

RED BOX CONTINUOUS POWER UNITS

Compact, lightweight and highly portable power units. Red Box systems may be carried safely on board all aircraft.

They are designed to give continuous high quality DC power for crew training, aircraft servicing in the workshop, on the ramp or in the field. This continuous power supply is ideal for diagnostic work, pre-flight checks or for continuous powering of equipment during operations, without draining the onboard aircraft batteries. There is a range of built in safety features and the units are simple to use. This switchable unit will produce a steady 14.4 or 28.8 Volts up to the fully rated output current with power factor correction. The power supplies are multi-fan cooled with built-in thermal management for operation up to 50°C ambient environments. The safety features include over current and short circuit protection. The power modules conform to EMC standards for noise emissions and immunity.

Model	Description	Part No.	Price
RBP525	25 Amp Power Unit	11-09824	$854.00
RBP550	50 Amp Power Unit	11-09825	$1,463.00
RBP575	75 Amp Power Unit	11-09826	$2,113.00
RBPS100	100 Amp Power Unit	11-09827	$2,875.00
TOWBAR	Towbar	11-09828	$283.95
HANDLE	Towbar Handle and Caster Kit	11-09829	$455.00

LOW BATTERY ALARMS

These are a micro processor-controlled low battery alarm. The purpose of this product is to alert you of low battery voltage. This will allow you to prevent damage to the battery. Featuring a wide range of settings, the Low Battery Alarm can be preset to meet voltage specifications. The device comes with an LED indicator for visual reading along with a buzzer to warn of low voltage. Multi-color LED configurations indicates the battery status.

Applications: Battery Backup Systems, RV house batteries, Trolling motor battery, Marine batteries, Auxiliary Power Units (APU), Travel trailers, Power gate backup battery, Generator battery, Battery backup safety equipment, Bass Boat Central Approved Manufacturer, Bass Boat Supplies and Accessories.

Low Battery Alarm XL (5V to 24V).....P/N 11-10010 ..... $43.65
Low Battery Alarm XXL (6V to 36V).....P/N 11-10011 ..... $57.85

AEROVOLTZ LITHIUM BATERIES

Aerovoltz Lithium Iron Phosphate batteries are designed to replace the lead acid batteries that currently power most of the two and four cycle engines in Aviation.

Features: Up to 80% smaller than the stock battery. Up to 10 lbs. lighter than the stock battery. Designed, developed, and assembled in the USA. Completely "dry" technology so batteries can be mounted in any direction. Non-toxic and recyclable. Impact and water resistent. No special charger required

Description	Volts	Part No.	Price
Aerovoltz Lithium Battery (AVO-4 CELL)	13.6	11-11607	$72.85
Aerovoltz Lithium Battery (AVO2-4 CELL)	12	11-10028	$114.85
Aerovoltz Lithium Battery (AVO2-8 CELL)	12	11-10029	$174.00
Aerovoltz Lithium Battery (AVO2-12 CELL)	12	11-10030	$198.00
Aerovoltz Lithium Battery (AVO2-16 CELL)	12	11-10031	$283.00
Aerovoltz Battery Management System Balance Charger (120 volt)	---	11-10032	$78.85

AEROVOLTZ BATTERY CHARGER

The Aerovoltz battery charger system is the only charger on the market designed specifically to work with the Aerovoltz EVO2 battery. The balance mode balances the voltage of each cell or cell pack while charging. The primary advantage of the balance charger is the balance charging funciton.

Features: Plugs directly into the batteries BMS port. Able to balance charge all the cells individually for max power and durability. Can double the expected life of the EVO2 battery. Has Charge, Fast Charge, Balance Charge, and Storage Charge Functions. Specifications: 14.5-16V Balance Charger Kit-120 V./240V.

120V.....P/N 11-10032..... $78.85
240V.....P/N 11-11466..... $78.85

ZAMP KICKER SOLAR BATTERY MAINTAINERS

The Zamp Kicker Battery Maintainer is designed to fully charge and maintain a battery at proper voltages without the damaging effects caused by unattended bench top and trickle chargers. The Zamp Kicker correctly charges any type of lead-acid, gel and AGM battery. Zamp Kicker Battery Maintainer available in 10 watt or 20 watt.

Includes: Solar panel mounts, hardware, connectors, wire, and charge controller and 6 amp waterproof controller.

Watts	Amps	Dimensions	Part No.	Price
10	6	11"w x 13"l x 1"h	11-10027	$169.00
20	6	16.4:w x 17.5"w x 1"h	11-10026	$243.00
40	6	Dim. closed: 16"w x 17"L x 3"h Dim. open: 32"w x 17"L x 1.5"h	11-10025	$338.00

SUNLINQ SOLAR PANELS

The 6.5-watt portable solar pack module offers a unique solution for reliable and portable solar power for cell phones, PDA's, and other small personal electronics. The SUNLINQ™ 6.5-watt weighs less than half of a pound and when folded is compact, lightweight and easily stored and transported. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

The 12-watt portable solar pack module offers a unique solution for reliable and portable solar power for Sat phones, GPS, battery charging, etc. The SUNLINQ™ 12 watt weighs less than one pound and when folded is compact, lightweight and easily stored and transported. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

The 25-watt portable solar pack module offers a unique solution for reliable and portable solar power for vehicle battery charging, including boats and RVs and laptop computers. The SUNLINQ™ 25 watt weighs less than two pounds and when folded is compact, lightweight and easily stored and transported. The 25-watt SUNLINQ™ is made from a special urethane material giving it the utmost in durability and water resistance. The low maintenance design provides an optimal electrical path and rugged durability. Built-in grommets allow for hanging, mounting or laying in any position.

Cables included with SUNLINQ™ are one each, CLA receptacle, CLA vehicle power outlet, battery clamps, 4 in. barrel connector, and 8 ft. extension cable.

Description	Part No.	Price
SUNLINQ 12 WATT Module	11-06193	$189.95
SUNLINQ 25 WATT Module	11-06194	$409.00

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START PAC® STARTERS - POWER SUPPLIES

START PAC® PORTABLE STARTING UNITS

The new patent pending Start Pac QC models have separate removable batteries that can be changed in 15 seconds. This feature allows the user to change the batteries in the field without needing to send the Start Pac back to the shop or manufacturer. Batteries have no memory effect and can be recharged at anytime. Made in the USA. Certain aircraft will allow the ship's generator to back charge a GPU. In this manner, Start Pacs can be recharged in the field without an AC source indefinitely.
NOTE: When storing the Start Pac for more than 30 days, remove the battery pack from the charging unit and store separately.

MODEL 1324-1 QC - * 13 AMP hours @ 10 Amp Hour Rate * 1300 AMPS Peak Current complete with built in charger, power plug and cables. * 15.5"x4"x11.75" * 35 LBS. Complete * Units are 24 VDC output with a universal charger that will accept 90-240 VAC 50/60 hertz. Will start turbine or piston engines up to 500 horse power. Has a 4.5 amp charger and will provide a charge time of approx. 4 hours. Will give two to three starts between charges. This portable unit is mainly designed for emergency starting in remote locations. This unit is not designed for repeated daily starts or maintenance functions.

1324-1 QC ..... P/N 11-04538 ..... $1,096.00
1324-1 QC-RBS (Battery Set) ..... P/N 11-07231 ..... $577.00

MODEL 2300 QC - Built in chargers, power plug and cables. 24/26 VDC output, with universal chargers that will accept 90-240 VAC 50/60 hertz. * 26 AMP hours @ 10 Hour Rate * 2300 AMPS Peak Current * Trolley avail. * 19.2"x7.5"x11.5" * 69 LBS. Complete. For starting engines up to 1500 horse power and give four to six starts between charges. This unit has a dual redundant 4 amp chargers.. When plugged into an AC source, 8 amps at 28VDC, is available for maintenance functions without depleting the batteries. Recharge time is approx. 3-1/2 hours.

2300 QC ..... P/N 11-06780 ..... $2,138.00
2300QC-B (Batteries) ..... P/N 11-06781 ..... $816.00

MODEL 6028 QC - All In One air portable/carry-on START PAC® with built in chargers, power plug and cables. Units are 28.5 VDC output, with universal chargers that will accept 90-240VAC 50/60 hertz. 26 AMP hours @ 10 Hour Rate. 2300 AMPS Peak Current Available with separate trolley.19.2"x7.5"x11.5". 77 LBS. Complete.

6028 QC ..... P/N 11-06783 ..... $3,260.00
6028 QC-B (Batteries) ..... P/N 11-07189 ..... $965.00

MODEL LI2800 QC - A full 28VDC battery pack and will provide superior starts on all electrically-started turbine engines. It has dual, redundant chargers with a total of 7 amps output and a recharge time of approximately 4 hours. * 28 AMP hours @ 10 Hour Rate * 2400 AMPS Peak Current * L 19.2" x W 7.5" x H 9.75" * 46 LBS. Complete. Utilizes the latest technology in Lithium batteries. (can be left in a completely discharged state without causing damage)

Li2800 QC ..... P/N 11-06782 ..... $3,690.00

QUICK CHANGE TROLLEY - The Start Pac® QC trolley is a light weight accessory for either the Start Pac® Models 1324-2QC, 1628QC, 2300QC or the 6028QC

P/N 11-06775 ..... $275.00

START PAC® POWER SUPPLIES

The entire aircraft electrical system can be powered up for GPS programming and electrical maintenance. Thus the on board aircraft battery can be saved for starting. Do not use for starting as starter motors require far more amperage than is available from the StartPac® Portable Power Supply. Not for battery charging. Made in the USA.

MODEL 53025/12VC - Do not cover or enclose this Start Pac® when using, as this will inhibit airflow needed for cooling purposes. Use a minimum of 12# wire size for the AC extension cord. 12 Volt output unit. * AC INPUT: 90 to 240 VAC, 7 amps * DC OUTPUT: 25 amps @ 14.2 Volts * 9 Lbs./4.08 kilos complete * 14" long, 5.25" wide, 5.5" high * Continuous duty fan cooled * Over current protection * Over voltage protection * Over temperature protection. Designed to power up 12 Volt aircraft systems. The voltage output is set to 14.2 Volts. Maximum amperage output is 50 amps which is adequate for most light aircraft. If overloaded, the 53025/12 will trip off and reset itself after a short period of time. This unit is ideal for powering up new and old aircraft with glass cockpits.

Standard Plug 53025 - 12V ..... P/N 11-04536 ..... $557.00
Standard Plug 53025-24V ..... P/N 11-04537 ..... $568.00
Piper Plug 53025-12V ..... P/N 11-10088 ..... $546.00

MODEL 53050 - Specifications: * No duty cycle, output voltage 28.5 VDC * AC input is universal 90-240 Volts. * Over current protection * Over voltage protection * Over temperature protection * Forced air-cooling * DIMENSIONS: Wt. 10 lbs./4.54 kilos 14" X 5.25" X 5.50". A 28.5 Volt continuous DC power supply when plugged into 110/220 Volt single phase AC power. Will deliver full 50 amp DC output continuously, but will not provide enough current for aircraft engine starting or mining equipment starting.

53050 ..... P/N 11-06833 ..... $979.00

MODEL 53105 - Specifications: * Maximum continuous 105 amps +5%. No duty cycle. * AC input 190-240 Volts. * Over current protection. * Over voltage protection. * Over temperature protection. * Forced air cooling. * 8 foot power cable. * Weights 26 lbs./11.80 kilos complete with power cable. * 14.5"x7"x13.75". A 28.5 Volt continuous DC power supply when plugged into 220Volt single-phase AC power. Will deliver full 105 amp DC output, but will not provide enough current for engine starting.

53105 ..... P/N 11-06834 ..... $1,790.00

START PAC® GROUND POWER UNITS

The following dimensions apply to each of the 3300s: 38"x21"x20" Handle Height 48". Avoid discharging the batteries completely as damage can result.

MODEL 3324 - Combination power supply and battery pack. Batteries: * 78 Amp Hours at 10 hour rate * 24 Volt DC - 25.5 Volts at rest Sealed cells non- hazardous Valve regulated high amperage output lead acid * 3200 Peak Amps Power supply / charger: * Multi- unit 58 Amp DC continuous output * 28 - 28.5 Volt output from 0 - 58 amp load * Battery recharge time from fully discharged - 2 hours * AC Input - 110 Volt or 220 Volts (only 1) Limitations : 200 amps maximum DC load NOTE- When using more than 58 continuous amps, the batteries will make up the difference until they become depleted. On most aircraft, a low voltage relay will drop the GPU offline when the voltage drops below a preset level. Once the GPU is dropped off, it's voltage will rise and will be accepted again by the aircraft, then will immediately drop off again. This oscillation can cause damage to aircraft components. NOTE-- PLEASE USE #12 or Larger AC EXTENSION CORD

3324 ..... P/N 11-07225 ..... $5,377.95
3324-RBS (Battery Set) ..... P/N 11-07234 ..... $907.00

FOR ADDITIONAL GROUND POWER UNITS PLEASE CALL OR VISIT OUR WEBSITE AT WWW.AIRCRAFTSPRUCE.COM

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START PAC LI2600QC STARTER 26VDC

The all new Patent Pending Start Pac model Li2600QC utilizes the latest technology in Lithium batteries. These batteries provide the same power as the lead-acid type but are 42% lighter and 32% smaller. In addition, lithium batteries have two other major advantages: twice the battery life of lead-acid batteries and no sulphation problems (can be left in a discharged state without causing damage to the battery plates).

This compact portable Lithium Ion starting unit is a full 26VDC battery pack and will provide superior starts on small to medium size turbine engines. It has a built in charger with a total of 4.0 amps output and a recharge time of approximately 6 hours.

This unit is especially designed for aircraft that will not accept a full 28 volt battery pack (actually reads 30-31 volts). Aircraft such as the Phenom 100 and Eclipse 500 will accept this 26 volt unit (actually reads 28.5 volts).

Specifications: 23 amp hours at 10 Hour rate, 2400 AMPS Peak Current, 30 lbs. complete Dimensions: L 16" x W 3.75" x H 12" Patent pending, Not to be used as an aircraft battery charger Lithium ion batteries can be damaged by deep discharges. Do not run the batteries down below 20 volts, a spike during a start is okay. Voltages below 20 begin the damage to the batteries. At 18 volts, the batteries will be damaged beyond repair. ..... P/N 11-09515 ..... $2,578.00

START PAC LI2000QC STARTER 28.5VDC

The all new Patent Pending Start Pac model Li2000QC utilizes the latest technology in Lithium batteries. These batteries provide the same power as the lead-acid type but are 42% lighter and 32% smaller. In addition, lithium batteries have two other major advantages: twice the battery life of lead-acid batteries, no sulphation problems (can be left in a discharged state without causing damage to the battery plates).

This compact portable Lithium Ion starting unit is a full 28VDC battery pack and will provide superior starts on small to medium size turbine engines. It has a built in charger with a total of 3.5 amps output and a recharge time of approximately 6 hours.

Specifications: 20 amp hours at 10 Hour rate, 2400 AMPS Peak Current, 30 lbs. complete, Dimensions: L 16" x W 3.75" x H 12", Patent pending, Not to be used as an aircraft battery charger, Lithium ion batteries can be damaged by deep discharges. Do not run the batteries down below 23 volts, a spike during a start is okay. Voltages below 23 begin the damage to the batteries. At 18 volts, the batteries will be damaged beyond repair. ..... P/N 11-09516 ..... $2,700.00

START PAC LI2800QC TWIN PAC STARTER, 28.5VDC

The all new Start Pac Model Li2800 QC Twin Pac utilizes the latest technology in Lithium Batteries. These batteries provide the same power as the lead-acid type but are 42% lighter and 32% smaller. The multi-purpose Li2800QC Twin Pac can be easily broken down into 2 separate units for easy transport and shipping. In addition, lithium batteries have two other major advantages: twice the battery life of lead-acid batteries, no sulfation problems (can be left in a discharged state without causing damage).

This powerfully versatile Lithium Ion Twin Pac starting unit is a full 28VDC battery pack and will provide superior starts on all electrically-started turbine engines. It has dual, redundant chargers with a total of 7 amps output and a recharge time of approximately 4 hours.

Specifications: 56 AMP hours at 10 hour Rate, 4800 AMPS Peak Current L 19.2" x W 7.5" x H 9.75" each unit, Twin Pac trolley L 19" x W 23" x H 12" not including removable handles 109 lbs. Complete with Twin Pac Trolley, 46 lbs. complete for each unit when separated. Not to be used as an aircraft battery charger Lithium ion batteries can be damaged by deep discharges. Do not run the batteries down below 23 volts, a spike during a start is okay. Voltages below 23 begin the damage to the batteries. At 18 volts, the batteries will be damaged beyond repair.

P/N 11-09517 ..... $7,558.00

BYCAN POWER SYSTEM PS-1450

The Bycan PS-1450 Aircraft Ramp Power Supply and Battery Charger is a dual-purpose aircraft flight line service and maintenance tool. The unit has a filtered 14 volt DC power supply with up to 50 amperes capability for tests of aircraft electrical systems and a secondary mode for recharging run-down batteries. The PS-1450 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated.

The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. This is replaced by a green LED when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit. The 28 volt version, PS-2850 provides 50 amperes of filtered DC at 28 volts. Dimensions: 9" x 12" 8". Weight: 38lb.

Bycan Power Supply/Charger 14V ..... P/N 11-09195 ..... $584.00
Bycan Power Supply 14V 50Amps ..... P/N 11-09196 ..... $569.00
Bycan Power Supply 14V 50HZ ..... P/N 11-09197 ..... $598.00
Bycan Power Supply 14V Piper ..... P/N 11-09198 ..... $629.00

BYCAN POWER SYSTEM PS-2850

The PS-2850 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated.

The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. A green LED replaces this when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit. The 14-volt version, PS-1450 provides 50 amperes of filtered DC at 14 volts.

P/N 11-07870 ..... $779.00

BYCAN POWER SYSTEM PS-28100

The PS-28100 will furnish up to 100 amps at 28 VDC. It plugs into the APU connector on the engine cowling and automatically disconnects the battery so that it will not be drained by the servicing processes. A valuable ramp accessory.

100 amperes filtered 28 volt supply. Aircraft APU connectors furnished. Operates from 120/208/220/240 VAC, 60 Hz . 8 foot DC cable furnished. Ferro-resonant regulated supply . DC current limited Front panel meter, controls.

Portable, weighs only 62 lb. One year warranty

Extensive testing by FBO's. Dimensions:10" x 13" x 9". Weight: 62lb.

28V, 100AMP - Standard Plug ..... P/N 11-07822 ..... $995.00
28V, 100AMP - Piper Plug ..... P/N 11-07823 ..... $998.00
28V, 100AMP - Pilatus PC-12 ..... P/N 11-07824 ..... $998.00
28V, 100AMP - Eclipse E-500 ..... P/N 11-07825 ..... $975.00

BYCAN POWER SYSTEM PS-14100

The PS-14100 will furnish up to 100 amps at 14 VDC. It plugs into the APU connector on the engine cowling and automatically disconnects the battery so that it will not be drained by the servicing processes. A valuable ramp accessory.

100 amperes filtered 14 volt supply. Aircraft APU connectors furnished. Operates from 120/208/220/240 VAC, 60 Hz . 8 foot DC cable furnished. Ferro-resonant regulated supply . DC current limited . Front panel meter, controls . Portable, weighs only 61 lb. One year warranty . Extensive testing by FBO's. Dimensions: 10" x 13" x 9". Weight: 61 lbs.

Bycan Power Supply 14V Standard ..... P/N 11-09191 ..... $678.00
Bycan Power Supply 100V 50HZ ..... P/N 11-09192 ..... $697.00
Bycan Power Supply 14V Piper ..... P/N 11-09193 ..... $739.00
Bycan Power Supply 100V 50MZ Piper ..... P/N 11-09194 ..... $759.00

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GROUND STARTING COMPONENTS

AIRCRAFT JUMPER CABLES

Cable is heavy duty, 4 ga. copper, 15 ft. long, twin extruded to help prevent tangling, and room temperature flexible at 40 degrees below zero. Fully insulated clamps wont arc or spark and are rated 500 amps, have a solid copper jaw, and have a flexispring strain relief to prevent cable breakage. Polarity light warns if clamps are connected incorrectly, preventing electrical system damage and personal injury. Available in two styles (above).

6141 - Jumper Cable with standard 3-pin Lexan female plug (equivalent to AN2551) on one end and alligator clamps on other end.
P/N 6141 ..... $153.95

6142 - Jumper Cable with special Piper single-pin plug on one end and alligatorclamps on other end.
P/N 6142 ..... $246.95

REPLACEMENT PAIR OF 500 AMP CLAMPS

Used on #6141 and #6142 jumper cables. (above)
P/N 11-06202 ..... $39.50

3 PIN JUMPER PLUG AN2551

Standard 3-pin female plug equivalent to AN2551 plug. Red Lexan construction screws together in minutes. Sleeves are solid copper, silver plated. With solenoid pin. Corrosion proof. Mates with AN2552-3A external power receptacle.
P/N 11-03158 ..... $49.95

PIPER TYPE PLUG

Mates with 11041 socket. Electrical conductors and connections are designed for maximum efficiency and long life. With ground return terminal. Single pole. Brass female contact with spring-grip tension provides solid engagement with the socket. Cable clamp holds wires firmly in place. Diecast housing. Accepts up to 0AWG cable.
P/N 11-03159 ..... $24.70

PIPER TYPE SOCKET

Self-grounding socket. Single pole. Diecast housing, spring-loaded door. Solid brass contact, 3/8" (9.5mm) diameter, with insulated tip to prevent short circuits. Rubber boot protects terminals and connections. Accepts up to 0AWG cable. Fits 2" (50.8mm) diameter hole. Flange holes 21/64" (8.6mm) diameter, 2 15/16" (74.6mm) on centers. Mates with 11042 plug.
P/N 11-00500 ..... $24.85

EXTERNAL POWER RECEPTACLE

This external power receptacle is designed to mount in a hole in the skin of aircraft. Hole is then covered with hinged access door (not included). Mates with AN2551 type plugs. Model 4621B.
P/N AN2552-3A $72.75

PLUG & JUMP

The Plug & Jump is a very portable unit which can be carried in the aircraft at all times because it is so lightweight. It can be used to start the aircraft from an ordinary car using standard jumper cables. It comes in two models; The Universal Model is used for Cessna, Beechcraft, etc. (3 pin plug) and the Piper Model is a single pin. The Plug and Jump is a simple conduit of power from any external power source to the aircraft. It is not a battery in and of itself. The Plug n Jump can be used for either 28V or 14V systems.
Universal Model ..... P/N 11-00971 ..... $78.95
Piper Model ..... P/N 11-00972 ..... $84.50

MASTER RELAY

(Battery Solenoid) - Applicable to all homebuilts. Continuous duty. 12V and 24V. Not for certified aircraft. Features: * High current capacity control * Isolated or grounded coils * Enclosed in dust-resistant case * Longer steel encasement permits lower heat rise and more sensitive operation on Type 71
111-226 (12V) ..... P/N 11-03161 ..... $28.50
111-226 (24V) ..... P/N 11-05799 ..... $29.85

STARTER RELAY

(Starter Solenoid) - For 12V intermittent duty. Adequate current capacity for most engines.
P/N 11-03162 ..... $9.75

PORTABLE POWER SUPPLY

These portable power supplies are an excellent way to power your avionics on the ground while you train or practice in the cockpit. Especially helpful in learning how to operate glass cockpit avionics and panel mount GPS units. To use the Portable Power Supply plug the cord into an AC wall outlet, and then connect the 3-pin plug into the external power receptacle on your aircraft. Furnished with Cessna style 3-pin plug. Manufactured in U.S.A.
Features: •Charge control: constant current charge to a constant voltage then to a float standby. •Current Limiting. •Fully automatic 3 stage charger can be left on the battery in maintaining/float mode. •Can be set for any type lead acid battery, including conventional, maintenance free, deep cycle, gelled-type, valve regulated batteries. •Continuous - 100% duty cycle. •Low voltage start: will start charging a deeply discharged battery with terminal voltage less than 4 volts. •Reverse polarity and short circuit proof. •Aluminum caset. • Includes Battery Clip Adapter.
12V Port Power Supply 3 Pin Plug ..... P/N 11-05084 ..... $224.95
12V Port Power Supply Piper ..... P/N 11-05085 ..... $209.00
24V Port Power Supply 3 Pin Plug ..... P/N 11-05086 ..... $318.00
24V Port Power Supply Piper ..... P/N 11-05087 ..... $246.95

RED BARON AUXILLIARY POWER UNIT (APU)

The RB-14/28 Red Baron APU is designed to operate avionics equipment in private and commercial aircraft. The Red Baron will output 14 or 28VDC at up to 25 amps. The voltage is filtered to eliminate hum and is regulated against input AC line voltage changes. The output DC voltage and current are displayed on front panel meters. The DC is also protected by a circuit breaker. Selection of output voltage is by a front panel switch which is protected by a switch guard. Closing the guard forces the switch to 14V position. The RB-14/28-25 plugs directly into the APU receptacle on the aircraft. It comes equipped with either the standard 3 prong connector or Piper coaxial connector. The housing is steel, powder coated in red, for optimum flight line safety. Rubber feet and handle are included. The AC and DC cable lengths are 8ft.
This unit comes with selectable output voltages. AC Input: Volts (VI)115, Amps (II) 4.5/9, HZ (FI)60. DC Output: Volts (VO) 14 / 28, Amps (IO) 25, Watts (WO) 350/700. Dimensions: H10" x L8" x W10". Weight: 32(LB).
Standard Connector ..... P/N 11-02142 ..... $675.00
Piper Connector ..... P/N 11-02143 ..... $718.00

THE BLUE ANGEL AIRCRAFT POWER SUPPLY

The Bycan BA-14/2850 Aircraft Ramp Power Supply and Battery Charger is a multi- purpose aircraft flight line service and maintenance tool. The unit has a filtered 14 & 28 volt DC power supply with up to 50 amperes capability for tests of aircraft electrical systems and a secondary mode for recharging run-down batteries. This ramp or hangar accessory is an absolute must for avionics service, gear and flap actuator exercising and other electrical system service. The BA-14/2850 plugs directly into the aircraft APU connector and is tied to the electrical system when the master switch is activated. Selection of output voltage is by a front panel switch which is protected by a switch guard. Closing the guard forces the switch to the 14 volt position. The battery charging mode is selectable by a front panel switch. The charging process is fully automatic. When the charge is in progress a red LED is illuminated. This is replaced by a green LED when the aircraft battery is fully charged. The on/off switch on the unit also resets the unit. This unit comes with selectable output voltages and Battery Charger. AC Input: Volts (VI)115, Amps (II) 9/18, HZ (FI)60. DC Output: Volts (VO) 14 / 28, Amps (IO) 50, Watts (WO) 700 / 1400. Dimensions: H9" x L12" x W8". Weight: 46(LB)
Piper & Cessna Plugs 110V (2 Adapters) ..... P/N 11-06390 ..... $1,385.00
Cessna Plug 220V (1 Adapter) * For Europe ..... P/N 11-06391 ..... $1,595.00
Cessna Plug 220V (1 Adapter) ..... P/N 11-06392 ..... $1,495.00

AVIATION GROUND POWER UNITS (GPU)

Pictured with the Optional BatteryMINDer® Charger-Desulfator & Airframe Interface Kit.

Achieves a remarkable 89% electrical efficiency to provide up to 2000W of power. Its cool running, switching-mode power modules provide massive amounts of stable, noise-free power from a 90-230 volt AC outlet. It will safely power the most delicate airframe systems without risk of costly damage to sophisticated avionics, instruments, or electronic equipment. A practical alternative to large, expensive start carts, battery chargers. Features dual, removable cord/tool caddies. Now offer the option of an integral BatteryMINDer®, the 3-stage continuous-duty charger that maintains, conditions, and desulfates aircraft lead-acid batteries. Temperature-compensated output ensures precise charging under all conditions. Desulfation restores full capacity and extends battery life. Available in 35 or 70 AMPS
35 amp with Integral Battery Minder ..... P/N 11-10832 ..... $1,045.00
35 amp with out Integral Battery Minder ..... P/N 11-10831 ..... $795.00
70 amp with Integral Battery Minder ..... P/N 11-10834 ..... $1,445.00
70 amp with out Integral Battery Minder ..... P/N 11-10833 ..... $1,195.00

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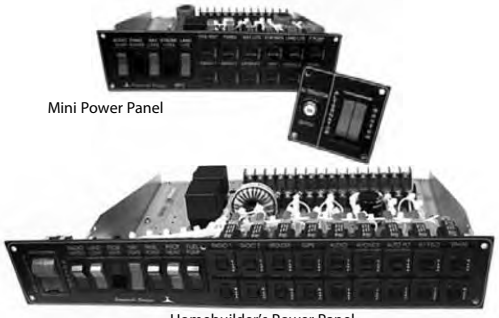
POWER PANELS

POWER PANELS FOR HOMEBUILTS



Mini Power Panel

Homebuilder's Power Panel

Based on a heavy duty printed circuit board that eliminates the bus bars an provides a user serviceable and logical arrangement of all power system components. Only DC rated switches and quality resettable thermal circuit breakers are utilized. Connections to the panels are via screw type terminal blocks. The avionics 'sub' bus is filtered. All metal parts are stamped aluminum. Lexan overlay on the faceplate. Complete documentation and suggested wiring diagrams are included. Standard Power Panel: 8 Switches: Fuel Pump, Landing Light, Strobe Lights, Navigation Lights, Panel Power, Pitot Heat, Radio Master, and a Cessna type split master switch for master solenoid and alternator field control. 18 Circuit Breakers: Fuel Pump, Landing Light, Strobes, Nav Lights, Panel Power, Pitot, Alternator Field, Gyros, Gauges, Trim, and Spare, (on Radio Bus) Radio1, Radio 2, GPS, Transponder, Audio, Avionics. Dims & Wt: 2.25"H x 13.00"W x 7.50"D, approximately 3.0 lbs. Mini Power Panel: 6 Switches: (main panel) Fuel Pump, Landing Light, Strobe Lights, Navigation Lights, Panel Power, (side panel) has a Cessna type split master switch for master solenoid and alternator field control. 13 Circuit Breakers: Fuel Pump, Landing Light, Strobes, Nav Lights, Panel Power, Engine Instruments, & Spare, (on Radio Bus) Radio1, Radio 2, GPS, Transponder, Avionics, (side panel) 30 amp alternator output breaker. Dims & Wt: (main panel) 2.375"H x 8.375"W x 6.50"D, (side panel) 2.375"h x 2.5"w x 2.0"d, approximately 2.5 lbs.

Homebuilders Panel.....P/N 11-11675 ..... $659.00 ea
Mini Power Panel.....P/N 11-11680 ..... $536.00 ea

LIGHT SPORT POWER PANEL

The Light Sport Power Panel was designed for LSA and light aircraft applications. It offers a new degree of flexibility in modern "Glass Panel" equipped aircraft. The electrical power bus is split into three segments including the Main Bus, Radio Bus and the Essential bus. The Radio Bus is switched and filtered. The Essential Bus can wire direct to the Main Bus or easily connected to a back up system such as the Composite Design Power Guard to allow dependable, constant power to critical flight and engine instruments. As with all Composite Design power systems, this panel is rugged, serviceable and dependable.

Specifications:

- 6 Switches: Fuel Pump, Landing Lite, Nav Lite, Strobes, Radio Bus Master, and Cessna type split master for Master Solenoid and Alternator Field.
- 14 Circuit Breakers: Main Bus - Fuel Pump, Landing Lite, Nav Lite, Strobes, Panel Power, Accessories
- Radio Bus (Filtered) Radio 1, Radio 2, Transponder, GPS, Audio Panel
- Essential Bus EFIS#1, EFIS#2, Flight Instruments, Engine Data
- Dimensions & Weight: 2.375"H x 10.5"W x 6.5"D, approx 2.25 pounds.

28V.....P/N 11-09207 ..... $598.00
14V.....P/N 11-09206 ..... $589.00

POWER GUARD MODULE

The Power Guard Module manages up to 10 Amps of secondary power for aircraft accessories that require back-up power. Typical accessories include electronic ignition, electronic engine/flight instrumentation and EFIS systems. The module works with a small 7-10 A secondary battery. The on board circuitry includes a secondary battery master relay, primary power controls, filter and charging circuit. Dims: 4.75"L x 2.75"W x 1.2"H P/N 11-02044.....$135.95

VERTICAL POWER VP-X

The VP-X integrates with many popular EFIS products enabling you to monitor and control your entire electrical system on the EFIS display. In addition using the EFIS for attitude, navigation, and engine information, you now can use the EFIS display to monitor the health of your electrical system, view and control the status of individual circuits, and respond to circuit faults.

Vertical Power offers these capabilities through the use of a patented electronic circuit breaker (ECB) technology that is at the core of all of our products. Of course, ECBs provide circuit protection like old-fashion thermal circuit breakers, but ECBs do a lot more than just detect circuit faults. ECBs are intelligent, configurable, and offer capabilities not otherwise available with old-style breakers. For example, ECBs can detect a burned-out landing light or disable the starter circuit while the engine is running.

The VP-X supports a single bus electrical architecture with a single or dual alternator configuration. It additionally supports the ability to measure the voltage on an aux battery. There are enough circuits to wire a typical RV (including the RV-10), Glastar, Lancair Legacy, Velocity, Cozy, or other 2 to 4 place aircraft.

Specifications:

- Power: 4-32 volts DC, 60A max continuous
- Weight: 1.9 lbs
- Mounting: Includes mounting bracket which attaches on side of VP-X. User can fabricate own mounting bracket as well.
- Connectors: Three power connectors, Ethernet for configuration, and two 25-pin d-sub connectors
- Operating Temperature: -25 to +85 deg C

Certification: The VP-X is for use only with experimental and light sport aircraft.

Note: Either a wiring harness kit or connector-only kit is required with the VP-X system.

Vertical Power VP-X-PRO ..... P/N 11-09293 ..... $1,998.00
Vertical Power VP-X Sport ..... P/N 11-09294 ..... $1,295.00
VP-X Pro Wiring Harness ..... P/N 11-09295 ..... $449.00
VP-X Sport Wiring Harness ..... P/N 11-09296 ..... $377.00
VP-X Sport Connector-Only Kit ..... P/N 11-09834 ..... $158.85
VP-X Pro Connector-Only Kit ..... P/N 11-09835 ..... $156.75
Crimp Tool (Req. w/ Connector-Only kit)
P/N 11-09836 ..... $69.95

RADIO STACK POWER PANEL

The Radio Stack Power Panel is designed to fit neatly in the 6.25" radio stack format. It is well suited for LSA and light aircraft applications, offering a new degree of flexibility in modern "Glass Panel" equipped aircraft. The power bus is split into three segments including the Main Bus, Radio Bus and the Essential Bus. The Radio Bus is switched and filtered. The Essential Bus can be wired directly to the Main Bus or easily connected to a back up system such as the Composite Design Power Guard. This allows dependable, constant power to critical flight and engine instruments. As with all Composite Design power systems, this panel is rugged, serviceable, and dependable. P/N 11-10081..... $650.00

SOLID STATE AVIONICS ELECTRONIC SWITCH

This Avionics Switch is a solid-state SMT device designed to replace the conventional mechanical relays earlier used. The switch incorporates MOSFET (Metal Oxide Silicon Field Effect Transistor) transistors for switching the high current with no moving parts and no any electrical arc to prevent fuel fumes ignition. The Avionics Switch requires only one toggle switch of any quality and any type to control the power for up to 7A each, different electronic / avionic equipment The Avionics Switch is enclosed in an aluminum enclosure for EMI/RFI protection and for easy installation onto the aircraft.

P/N 11-04335..... $152.00

EL

RC ALLEN ESP

Battery-based emergency power unit designed to give you at least an hour of auxiliary power when you need it the most. Paired with the new RCA 2600 Digital Horizon, it can provide up to 6 hours of backup power. Can be easily mounted behind the instrument panel. Comes complete with a wire harness and panel-mounted status light. Recharges itself during flight and does not drain the aircraft battery when aircraft power is off. The ESP utilizes a long lasting lithium polymer battery.

14V.....P/N 10-04645 .....$649.00
28V.....P/N 10-04646 .....$685.00

TRUE BLUE POWER® TS835 EMERGENCY POWER SUPPLY

Automatically supplies 24.5 VDC power for critical or standby equipment. 4.5 Amp-hour battery with Nanophosphate® lithium-ion cell chemistry Lightweight 4.7 lbs. – 8 lbs. Input Voltage: 24–32 VDC. 5V module connector available. Direct replacement for PS-835/PS-855 or forward-fit installations. 2-year capacity check, 10-year replacement life. (approx.) 3.1"H x 12.6"L x 2.3"W Mounts in standard ¼ ATR Rack. Maintains full charge by recharging during normal flight operations. Remote mounted self-test switch required. FAA TSO C179a certified. Part 23 AML STC Certified. Qualified to RTCA/DO-160F and RTCA/DO-311. Designed and built in the USA. Two year limited warranty.

TS835 ..... P/N 11-08713 .....$3,895.00
5V module connector..... P/N 10-04776 .....$1,038.00

TRUE BLUE POWER® TI500 STATIC INVERTER

DC-to-AC static inverter produces 115 volts at 60 Hz for 500 watts of "wall outlet" power from an aircraft's 28 VDC input. Has the same connector and footprint of legacy designs, plus overload and short-circuit protection up to 150 percent of the rated load. Supplies power for various cabin accessories, such as laptops, cell phones and iPods, Compact design. Remote On/Off feature, 500VA rated output power, 85-90% efficiency, Input voltage: 20-36 VDC, Input current: 20A at 28 VDC input, Output voltage: 115 VAC, Frequency: 60 Hz ± 1%, Single phase, true sine wave output, Overload and short-circuit protection up to 150% of rated load, Rated from -65 F°to +160°F (-55°C to +71°C), FAA TSO-C73 certified and RTCA DO-160F qualified, Designed and built in the USA., USA, Two year limited warranty P/N 11-09613 .....$2,848.00

TRUE BLUE POWER TI1200 STATIC INVERTER

The TI1200 DC-to-AC static inverter produces 115 volts at 60 Hz for 1200 watts of "wall outlet" power from an aircraft's 28 VDC input. Lighter and smaller than competing inverters, the TI1200 has the same connector and footprint of legacy designs, plus overload and short-circuit protection up to 150% of the rated load.....P/N 11-10743.....$4,290.00

TRUE BLUE POWER® DC/AC INVERTER

This classic DC to AC solid- state "peanut" inverter provides a reliable source of 26 volt, 400 Hz, AC power. Versatile, compact and lightweight, it is ideal for use with Stormscope bootstrap and multifunction display installations. Input: 11-40VDC @ 0.75 amp. Output: 26 VAC,400 Hz, Single Phase, 10 voltamperes.....P/N11-07062.....$479.00

MID-CONTINENT TRUE BLUE TI250 STATIC INVERTER

A lightweight power converter that translates a 20 to 36 VDC input to a 115 VAC output at 60 Hertz and provides 250 watts (VA) of power. The alternating current output is defined as a pure sine wave with less than 2% of total harmonic distortion for clean, noise-free, harmonic-free power to supply nearly any common commercial or consumer load rated for a nominal input of 115VAC. FAA certified to TSO C73 and tested to rigorous environmental standards and levels of RTCA DO-160.

P/N 11-12858.....$1,995.00

TRUE BLUE DUAL USB CHARGING PORT

The self-contained TA102 Dual USB Charging Port is a modern addition to any cockpit and interior cabin. Each USB port is designed to supply the electric current needed to charge any standard or high-power device with a USB interface. The TA102 protects itself and the charging device from short-circuit, power surges and over-current potential.

P/N 11-12159.....$348.00

LONESTAR FILTER 70 AMP

70 amp filter attenuates EMI-RFI noise generated from alternator, generator systems, gear motors, blowers for a/c systems and other higher current noise sources. Can be used to filter the aircraft's avionics buss to filter RF, NAV, GPS, as well as other navigational equipment. The filter is FAA-PMA for certificated aircraft as well as for experimental aircraft.

P/N 11-04849 .....$219.75

LONESTAR FILTER 100 AMP

100 amp filter (FEED THRU) (Fail Safe Design) attenuates both low and high frequency, (10hz to 30 mhz) of EMI-RFI noise generated from the aircraft's alternator systems to the aircraft's dc buss. This filter, (100 amp Fail Safe design) is used by OEM aircraft manufacturers to attenuate 100% of the on board noise before it penetrates the aircraft's dc buss. The filter is FAA- PMA pending for certificated aircraft but can be used on experimental aircraft. P/N 11-04850 .....$349.95

LONESTAR THE ELIMINATOR

The Eliminator is a low pass double (LC) PI type filter designed to suppress both low and high frequency line noise. The filter may be connected at the source of the noise or on the input of the effected component.

P/N 11-08055 .....$148.95

LONESTAR USB POWER CONVERTOR PLUG

USB 2 Amp Power Converter Plug (LS03-05021) is the updated model of the LS03-05020. It's the same small size but with even more power for onboard charging of iPads, iPhone, iPods, cell phones and most things that use USB power to charge. . P/N 11-10454 ..... $49.95

LONESTAR GROUND LOOP FILTER

Designed to ELIMINATE onboard ground loop noise problems in an easy to use module. Plugs in between your portable device and your aircrafts audio system. Was designed with a low frequency isolation audio transformers that isolates normal audio from unbalanced AC noise interference. Incorporates RCA, 2.5mm and 3.5mm connectors that ensures compatibility with numerous consumer devices currently used in modern aircraft. Easy Plug and Play Installation, Approval Types: Form 337, Portable Device 1 year Limited Warranty Ultra small footprint Custom configurations Portable device

P/N 11-09493 ..... $89.95

LONE STAR VOLTAGE CONVERTERS

Lone Star Aviation's new 12V STEP-UP Converter is the smallest (3" x5" x 2"), most efficient (93-95%) and the most versatile STEP-UP aircraft converter in our industry today. RTCA/DO 160D tested to operate 28V NAC/COM radio equipment such as KX 155, KX 165, KY 196A, KY 196B, and Motorola VHF transceivers on 12V aircraft. Additional 28V electronic devices are HSI, cameras, audio panels, battery backup systems, etc. FAA Approved Under TSO-C71 Now Approved LS03-05002B-MS * FAA TSO-C71 Approved (Pending)

Step-up 14V DC to 28V DC Converter..... P/N 11-02888 .....$449.95
Step-down 24VDC to 12VDC Converter..... P/N 11-03309 .....$249.95
Connector Kit 5 Pin DB Style..... P/N 11-06001 ..... $49.95

LONE STAR NOISE FILTER EVALUATION KIT (LOW CURRENT)

Not sure what filter you need? Order a Filter Evaluation Kit. Kit includes Lone Star's most popular and widely used Filters; the Magneto Filter, Atlternator Filter, and the Eliminator Filter. P/N 11-08620 .....$325.00

LONE STAR NOISE FILTER EVALUATION KIT (HIGH CURRENT)

Not sure what filter will best solve your noise problem? Check out Lone Star's new High current filter Evaluation kit. This kit comes with 1 100 Amp filter, 1 70 amp filter, and 1 10 amp eliminator filter in a beautiful pelican micro case.

P/N 11-08621 .....$765.00

EL

CIGARETTE LIGHTER RECEPTACLE

This 12V female cigarette lighter receptacle is made from stainless steel and is ideal or homebuilt panels. 292568 P/N 11-01294 .....$9.85

LONESTAR DC CIGARETTE LIGHTER RECEPTACLE

Perfect for portable GPS systems, cell phone chargers, laptop power supplies, or anything else you would plug into your car during a road trip. 12V Aircraft: If your aircraft runs on 12V you will not need any extra equipment to operate 12V equipment, and it comes with a a rubber cap marked with DC12V. 24V Aircraft: Please note, you will need a 28V to 12V convertor to power most 12 volt consumer electronic devices.

Non TSO'd..... P/N 11-04862 .....$59.85
TSO'd..... P/N 11-09432 .....$89.95
DC Converter 28-14VDC TSO..... P/N 11-03309 ..... $249.95
SD Converter 24-13.8VDC TSO..... P/N 11-04894 ..... $497.00

LONESTAR POWER ADAPTOR AND USB KIT

Power Adapter USB Socket. Just Plug in your USB socket into your Cigarette Lighter Power Adapter and get 5 volt USB power out. Perfect for charging cell phones, iPads, iPods, GPS, PDA, Laptop and many consumer electronic devices. This is a kit that comes with a FAA-TSO Approved Cigarette lighter power adapter and plug-in USB 5V converter. Please note, the USB Plug is able to converter 28V input into 5V USB output without additional equipment. However, In order to power most 12 volt consumer electronic devices you will need a Converter to get 12V output. P/N 11-09492.....$149.95

LONE STAR RUGGEDIZED IPAD-USB CORDS

The Ruggedized apple to USB Coil Cord stretches from 20" to 29", with an apple specific connector on one end, with USB on the other. The Ruggedized molding is mated to lockable connector pins to ensure connectivity during flight for ipad applications.

This cable is a perfect match with both Lone Star Aviation's USB plugs for Power Adapters and MS-USB panel mount USB receptacle.

USB to iPad Coil Cord 20"-29"..... P/N 11-10699..... $58.85
USB to iPad Cord (2M) ..... P/N 11-10698..... $47.00
USB to iPad Cors (1M)q..... P/N 11-10697..... $49.50

LONE STAR IPAD / IPHONE USB CHARGER KIT

This Kit includes a 28V to 5V Down Converter and a panel mount USB plug with Lone Star's proprietary circuit for use with apple products. This Kit also includes our converter connector kit and locking connectors for easy installation behind aircraft panels. Charging an iPad in flight has never been simpler or more reliable..... P/N 11-10588.....$698.00

LONE STAR LED PANEL INDICATOR (DUAL COLOR)

The Dual color LED illuminates green for normal and red for a problem. Use for any (stand alone annunciation).

• LED Panel Indicator: .625, .468 or alternate mounting
• Dual Color - (3) wire Red LED 660nm, Green LED 525nm = .20ma • Wide angle 180 degrees

Note: Price listed below is for the LED Panel Indicator ONLY. You will need to purchase the Cyclone 21 Blower and the Fan Failure Warning Unit separately to complete the system..... P/N 11-10592..... $98.75

LONE STAR A/C RECEPTACLE

The A/C receptacle is compatible with many aircraft and any aircraft with an Inverter is a potential customer.

P/N 11-10586.....$375.95

LONESTAR LED PRESS TO TEST INDICATORS

Lone Star Aviation's line of LED panel indicators are available in a RED, Green, or Amber lenses. The indicators are TESTED by a PRESS to TEST function. The panel indicators are available in 14V and 28V, and non-dimmable and dimmable versions. Are installed into a (.468 mounting hole)in the aircraft's instrument panel.

The indicator is a MS 25041 aluminum body and standard T1-3/4 led. Indicators are also available in 28vdc with standard led bulb as well as an FAA T1-3/4 bulb at 28vdc

Description	Color	Volt	Part No.	Price	Volt	Part No.	Price
Non-Dim	Red	14V	11-08768	$36.85	28V	11-08676	$69.75
Non-Dim	Green	14V	11-08769	$36.85	28V	11-08677	$69.75
Non-Dim	Amber	14V	11-08770	$36.85	28V	11-08678	$69.75
Dim	Red	14V	11-08764	$39.50	28V	11-08673	$86.75
Dim	Green	14V	11-08766	$39.50	28V	11-08674	$86.75
Dim	Amber	14V	11-08767	$39.50	28V	11-08675	$83.50

LONE STAR DC-AC INVERTER

Lone Star Aviation's new inverter line boasts cutting edge DC/AC 60Hz technology in addition to innovative circuitry to operate most DC-AC applications within the following markets, i.e. commercial, industrial, solar, aviation and military. The DC/AC inverter is a high reliability model that is mission ready and TSO approved for airborne applications.

500 Watt Inverter..... P/N 11-08632 .....$2,695.00
1000 Watt Inverte..... P/N 11-08634 .....$4,495.00

Accessories

Plug MS3106E18-9P 9 (For 500W Inverter)
P/N 11-08633 .....$79.50

Plug MS3106E24-12S(For 1000W Inverter)
P/N 11-08635 ..... $139.95

GFCI A/C Receptacle ..... P/N 11-10586 ..... $375.95
GFCI Control Unit ..... P/N 11-10587 .....$2,495.00

LONE STAR DC TO DC CONVERTER

Output Voltage	Output Current	Model No.	Part No.	Price
5.0 VDC	7.0C/7.5PA	LS03-05003-005	11-10700	$468.95
9.0 VDC	7.0C/7.5PA	LS03-05003-009	11-10589	$498.75
13.8 VDC	7.0C/7.5PA	LS03-05003-138	11-04894	$497.00
16.0 VDC	4.0C/4.5PA	LS03-05003-160	11-04895	$499.95
19.0 VDC	4.0C/4.5PA	LS03-05003-190	11-04898	$499.95

LONE STAR GROUND FAULT CIRCUIT INTERRUPTER (GFCI) CONTROL UNIT

Lone Star Aviation's Ground Fault Circuit Interrupter is a modular design that will monitor from 1-6 receptacles. This GFCI control unit was developed to protect crew or passengers from electrical shock while using AC devices on board an aircraft. Note: New FAA Policy statement and guidelines describe the adoption of a GFCI AC receptacle when installing dc/ac inverters into an aircraft. Lone Star Aviation will be the only FAA approval holder for this product line..... P/N 11-10587 .....$2,495.00

LONE STAR DC BULK-HEAD FILTER

DC Bulk-Head Filter. DO-160D Testing Pending. Full feed thru design..... P/N 11-08617 ..... $159.95

LONESTAR 10 AMP RECEPTACLE SOCKET

Plastic Ruggedized 4 pin Bulk-head – receptacle 10 Amp.....
P/N 11-08638 .....$18.95

LONESTAR PLUG CONNECTOR

Plug Connector. Plastic Ruggedized 4 Pin Positive lock with polarizing key. 10 Amps.
P/N 11-08639 .....$11.95

LONESTAR CONNECTOR KIT DC STEP DOWN CONVERTER

Connector Kit DC Step Down Converter with Cigarette Lighter Receptacle allows you to connect directly to one of the Down Converters (LS03-05003). Cable length is 36 inches. Lone Star Aviation's FAA-TSO approved • Charging Cell-SAT Phones • Portable radios • GPS, Back-up •And More!

P/N 11-08637 ..... $128.75

LONE STAR 90 DEGREE ADAPTER

Lone Star Aviation's new 90 degree adapter is made precisely from a tough and durable plastic and is designed to help in Avionics Cooling Fan installations in confined areas under the panel. This Item is made to fit our new 5/8" tubing..... P/N 11-08623 .....$11.95

LONE STAR STEP DOWN 24V TO 12V CONVERTER

With this TSO-C71 DC to DC Converter you can operate 12 Volt Radios, GPS's, and Electronic Devices in a 24 Volt Aircraft. Size: 6.0"W x 5.0"D x 1.75"H. Weight: 1.5 lbs. Color: Gold Anodized . Material: Aluminum Extrusion.

P/N 11-03309 ..... $249.95

EL

AMERI-KING AK550 POWER BOOSTER

The Ameri-King AK-550 is a FAA TSO'd approved Regulated DC to DC Power Booster Converter. It transforms an unregulated input from a 12 Vdc to a regulated +28 Vdc output to a bootstrap mode. It may be installed in a pressurized area, controlled or non-controlled temperature at altitudes up to 55,000 feet. It's locations include Electrical/Avionic equipment rack, behind or beneath aircraft panel, or cabin pressure bulkhead. Installation is extremely simple. All necessary Accessories are provided, including mating MS connector plug and MS cable clamp.

AK-550-6C (6 amp) GA Applications ..... P/N 11-00064 ..... $318.95
AK-550-6 (6 amp) ..... P/N 11-09316 ..... $595.00
AK-550-12 (12 amp) ..... P/N 11-01453 ..... $734.00
AK-550-24 (24 amp) ..... P/N 11-01454 ..... $1,392.00

AMERI-KING DC / DC CONVERTER

The Ameri-King AK551 is a FAA TSO'd approved Regulated DC to DC Power Reducer Converter. It transforms an unregulated input from a 24Vdc battery to a regulated +13.8 Vdc output in a Reducer mode. Applications include critical communication navigation digital Equipment: AM/FM/CD receivers; it may be installed in pressurized or non pressurized area, controlled or noncontrolled temperature at altitude up to 55,000 feet. It's locations include Electrical/Avionic equipment rack, behind or beneath aircraft panel, or cabin pressure bulkhead. Mating connector plug is provided.

AK-551-9 (9 amp) ..... P/N 11-00066 ..... $184.95
AK-551-18 (18 amp) ..... P/N 11-01455 ..... $309.95
Ak-551-40M (40 amp) ..... P/N 11-01456 ..... $999.00

MID-CONTINENT INSTRUMENTS TS420-1 EMERGENCY POWER SUPPLY

Simultaneously provides one primary power output and three lighting power outputs. Pitot/Static ports or optional electrical input provides ability to work in automatic mode without pilot intervention. Arms at beginning of flight. Activates instantly upon power loss. Recharges during flight. Turns off after flight. Utilizes sealed lead-acid cells for reliability and cold weather performance. Lighting outputs can power LED or incandescent lighting at 5, 14 or 28 VDC. Remote, mini-annunciation switch (with automatic dimming) controls test and manual operations. Quality Mil-Spec connectors included. Field replaceable battery module(s). Amp-hours of power at 18V: 2.5 Ah. Total system weight: 5.0 lbs. Designed and built in the USA. One year limited warranty. P/N 10-04770 ..... $2,398.00

SS-6 CHARGE CONTROLLER

Morningstar's superior series switching provides many advantages compared to shunt controllers. Series regulation reduces FET heating and lowers voltage stress on the power FET's. A series configuration also improves protection against lightning surges and reduces switching noise. The series design improves charging accuracy. In PWM, series switching becomes self-correcting for temperature and system voltage drops.

P/N 11-04618 ..... $70.50

DELUXE COCKPIT VOLTAGE CONVERTER

11-04330

DC-DC Converter, Device to reduce voltage from 28V to 12V. Allowing the user to operate 12V items in a 28/24V airplane. The device is fully electronic, no passive elements generating heat. It is fully protected and fused. A green LED indicates normal and abnormal conditions (overload). The unit is enclosed in a small precision machined aluminum box with integrated heatsink. Input is via a fused lighter plug and output is via a female light receptacle. Size: 1.3"x 1.3"x 2.3"; Weight: approx. 5.0 oz.

3 AMP.28-12V DC-DC Converter ..... P/N 11-04330 ..... $46.60
10 AMP.28-12V DC-DC Converter ..... P/N 11-04331 ..... $94.75

Y-COUPLER – Heavy duty device that allows user to split the output of their cigarette lighter outlet in their airplane or to be used in conjunction with one of the above Cockpit Voltage Converters (running multiple items of one converter). This device is fuse protected (6.0A)

02YC Y-Coupler ..... P/N 11-00401 ..... $17.75

INVERTER – A device to produce Alternating Current out of a Direct Current Source. This device will generate 110V AC from a 28/24V DC Source (load limit is 150W continuous, 200W peak). Plug it in to your airplane lighter receptacle and have a household 110V AC outlet. This device is fuse and electronically protected against overload, over temperature, over and under voltage. Dims: 1.77"x 2.87"x 6.06"; Wt: 12.77 oz.

110I 28-110V Inverter ..... P/N 11-00402 ..... $97.85

EXP BUS PRODUCTS

EXP TRAY EX-110- he EXP BUS mounting tray is the ultimate in quick build time savings. The tray comes Pre-punched, and pre-assembled with rocker switches prewired to the PC board. All the builder needs to do is to cut a single rectangular hole in the panel, connect the battery, alternator, and all of the load wires to the proper terminals on the EXP BUS2 PC board mounted in the chassis. 14V DC systems (not recommended for 28V aircraft). Replaces all but one circuit breaker in most homebuilt aircraft, and includes the master switch, master relay, and the avionics master switch. The avionics output bus provides six protected circuits, and automatically shuts off when the starter is engaged. Three master bus outputs operate items such as panel lights, gyros and engine instruments. Switched outputs include the alternator field, Beacon/Strobe output, nav light output, aux fuel pump output, two landing light outputs, and two spares. All outputs are overload protected, eliminating the need for fuses or circuit breakers, and saving the labor of installing and wiring them up. P/N 11-00430 ..... $418.00

EXP-2V
P/N 11-00431

EXP 2V - he Expbus II is a lifesaver when wiring up your homebuilt project. The EXPBUS II is a complete electrical system on a special high current, printed circuit board. 14V DC systems (not recommended for 28V aircraft) For a small additional charge, we can configure your board with any size (1 to 11 amps) breakers in any position. Size: 7.8" long by 3" deep by 1.9" tall. Weight 0.8 lbs. P/N 11-00431 ..... $299.00

IND-2
P/N 11-00432

IND 2 - Annunciators for each solid state breaker on the EXP BUS * Over and undervoltage warning lights * Ammeter display * Instrument light dimmer circuit * Single ribbon cable installation to EXP Bus

The Indicator module is an accessory for the EXP BUS DC LOAD CENTER. This optional accessory provides several enhancements to the basic load center, all mounted in a small panel mount module, 4.6 inches long, and 2 inches wide. The module extends 2 inches in depth, behind the panel. The module provides an annunciator output for each fused output on the LOAD CENTER, which illuminates if the circuit is tripped. It also provides OVER and UNDER VOLTAGE annunciators, an AMP-METER indicator, and a light dimmer circuit for the instrument lights.

P/N 11-00432 ..... $134.95

BRKT 2 - Mounting brackets to simplify mounting the PC board in the aircraft. Put things where you want them to be. Free Shipping on this item.

P/N 11-00433 ..... $21.95

EXP 110 Tray unlit x/ Battery Back up ..... P/N 11-08430 ..... $469.95

B&C HIGH/LOW VOLTAGE WARNING INDICATOR

The BC207 is a solid-state high/low voltage sensor which mounts behind the instrument panel, and provides a visual indication of abnormal bus voltage via an included panel-mounted warning light. When flashing, this light indicates bus voltage greater than 15.5 volts D.C. (or 31.0 volts D.C.); when steady, it indicates bus voltage below 12.5 volts D.C. (or 25.0 volts D.C.). Weight: 4.5 oz. Select the appropriate sensor below according to battery voltage.

BC207-1 OV/LV Sensor (14 volt) ..... P/N 07-06830 ..... $107.85
BC207-2 OV/LV Sensor (28 volt) ..... P/N 07-03435 ..... $79.00

KEY WEST REGULATOR

Advanced regulator/rectifier circuit provides steady 13.8 volt output regardless of load. Maximum output 220 watts, 16 amps. 10v signal pulse output for digital or MaxPac® tachs. Accepts AC input from 15 to 100 volts. Can be used with AC strobe. Features: * Extremely clean filtered DC output * Electronics designed to deliver 16 amps producing 220 watts * Efficiency: No "consumer" or "dummy" load required for proper operation * A beautiful and rugged lightweight package weighs just 16 ounces and is 3.5 x 2.5 x 1 inch * Protection from the environment: complete epoxy encapsulation to insure all-season operation * Ease of installation: crimp type ring terminals and wiring schematics provided with every unit

P/N 11-03168 ..... $62.75

EL

POWER BUSS 2075

The Power Buss 2075 is an electronic device designed to control and monitor the electrical circuits in an aircraft. The device employs solid state PTC current limiting fuse devices that automatically remove power from a circuit if it becomes overloaded. Just like conventional circuit breakers, a tripped circuit can be reset by turning off the device for a few seconds, then turning it back on. If a circuit trips due to overload, the pilot will instantly hear a distinctive voice message in his headset, and through the built in speaker. The voice warning will continue until the pilot pushes the panel mounted switch, with built in light, stopping the voice and turning on the built in red light. This provides a visual indication of the tripped circuit. The red light remains illuminated as long as the fault exists. The power buss can be mounted anywhere behind the panel. the combination switch/light should be mounted in the panel, within the pilots normal scan. A separate buss is provided for the avionics. The Power Buss is designed for 12volt systems only. Maximum current on the board is 30 amps. Maximum current on any one circuit is 11 amps. The audio output is designed to connect to an unswitched input in an audio panel or a radio. Note: This system is not FAA approved. It is intended for installation in Experimental category aircraft only.

The Power Buss is available in two versions:

2075-A: Designed specifically for use in both fixed and retractable gear land aircrafts that are powered by Rotax engines. It incorporates PTC fuses and voice messages for the most common circuits used in these aircrafts. P/N 10-03716 ..... $450.95

2075-CL: Designed specifically for use in both fixed and retractable gear land aircrafts that are powered by either Lycoming or Continental aircraft engines. It incorporates PTC fuses and voice messages for the most common circuits used in these aircrafts.

P/N 11-10504 ..... $449.00

ELECTRONIC FLAP ACTUATOR / INDICATOR

The Electronic Flap Actuator (2071/2072) is an electronic module designed to automatically control an electrical flap actuator and provide visual readout of 3 or 4 flap positions. The device can be used with any electrical actuator providing the operating current is less than 8 amps at 12 volts. A 5K or 10K resistive sensor is required to provide a voltage readout of the actuator position. The control unit incorporates pushbutton switches with built in LED lights. The system can be easily calibrated to your flap system. Once calibrated, pushing any of the switches will activate the actuator and drive the flaps to the correct pre-defined position. When the flaps are at the correct position, the actuator will stop, and the LED in the correct switch will illuminate indicating that the flaps are in the correct position. Note: This system is not FAA approved. It is intended for installation in Experimental category aircraft only. The Electronic Flap Actuator is available with 3 flap position switches (full up, takeoff position, and full down) or 4 flap position switches (full up, 20 degrees, 40 degrees, and full down).

3 switch ..... P/N 11-10502 ..... $198.75

4 switch ..... P/N 11-07728 ..... $198.75

FLAP HANDLE

This flap handle is a well built, durable, and cost effective alternative to the plain round standard flap toggle switch that exists in most experimental aircraft. This unit is easily installed over the existing toggle switch with the included set screws. This unit is powder coated for a long lasting, durable finish.

Note: This is the Flap Handle OnlyFlap Handle Only

Flap Handle..... P/N 11-11337 ..... $34.95

Flap Handle and anti rotation plate that limits knob rotation and also provides a nice labeling of the flap handle. ..... P/N 11-11338 ..... $69.95

ROTAX ELECTRICAL LOW VOLTAGE CUTOUT

LVC 2088 should be used with every Rotax Model 914 aircraft engine to help insure that electrical power is available to power the engine fuel pump under all conditions. Isolates the internal engine alternator from the aircraft electrical system if a low voltage condition develops in the electrical system. This helps insure that the fuel pump continues to operate.

P/N 11-10501 ..... $194.95

RELAY DECK

Two axis relay deck to be used for both elevator and aileron servos.

P/N 11-10512 ..... $79.00

VOLT™ 12V USB CHARGER/ADAPTOR

The Volt™ USB adaptor conveniently charges USB electronics through your car's 12-volt outlet ("cigarette lighter"). Features include a red LED charge indicator on charger top and spring loaded tip. Spring loaded tip fits most outlets. Colors: Orange, Black, Fuscia, Green, Red, Blue, Red, or White. Specifications: Power conversion: 12V Automobile Charger to USB. 5.0v output. Size: 2.2" x 1". Weight: .6 oz. CE certified

Color	Part No.	Price
Pink	11-10668	$8.95
Orange	11-10669	$8.95
Green	11-10673	$8.95
Purple	11-11311	$8.95

VINTAGE AN 8002 REPLICA RUBBER STICK GRIPS

Get a grip on authenticity! The "AN 8002" grip is back in 1" and 1-1/8" sizes. Used in Piper, Aeronca, Taylorcraft and many others from prewar to 1947 Correct grip for L– birds, looks great on homebuilts!

1 Inch .....P/N 11-12769 ..... $49.95

1-1/8 Inch .....P/N 11-12767 ..... $49.95

TOSTEN STICK GRIPS

Wired with 22 gauge wiring. 7/16 stainless steel shaft with custom machine bushings to fit any diameter shaft. Comfortable grip. Made with lightweight glass-filled Wellman nylon. Rotates easily to any position. Made in the USA. For use in Experimental Aircraft Only.

Model	Functions	Part No..	Price
CS-2	Two function control stick Index trigger button Additional button underneath trigger Ambidextrous design	11-10508	$99.00
CS-4	Four function control stick Two trigger buttons Two face buttons Ambidextrous design	11-10509	$119.00
CS-6	Eight function control stick Four-way hat switch Trigger button and index button Ambidextrous design	11-10510	$129.00
CS-8	Eight function control stick Four-way hat switch Two face buttons Trigger button and index button Ambidextrous design	11-10511	$139.00

INFINITY AEROSPACE LIGHTED RETRACT HANDLE WITH GEAR SWITCH

Canard and Non-Canard RED / GREEN lighted Retract Handle with DPDT Lever Lock Gear Switch (12 VDC / 7.5 amp, or 24 VDC / 4 amp)

Gear DN the handle LED light is GREEN; Gear in Transit or is Unsafe, or the Canard Retract Handle and Switch is in the Center OFF position, the LED light in the handle is RED; Gear UP the handle LED light is OFF, or BLUE (your choice).

The GREEN / RED LED light in the handle can be changed to different colors (such as GREEN / BLUE for amphibs), or GREEN / RED / BLUE, but GREEN / RED gear lights for retractable landing gear are standard colors in retractable planes. Pre-wired with 2 feet each of 22 gauge GREEN, RED, BLUE and BLACK wires.

Description	Part No.	Price
12 Volt Canard	11-12220	$150.00
12 Volt Non-Canard	11-12361	$150.00
24 Volt Canard	11-12221	$150.00
24 Volt Non-Canard Purple	11-12362	$150.00
Infinity Lighted Gear Switch With Solid State Black Box	11-12925	$199.00
Infinity Lighted Gear Switch With Solid State Black Box	11-12926	$199.00

STICK GRIPS

INFINITY MILITARY STICK GRIPS

P/N 11-00031

Infinity Aerospace designed these grips with safety, comfort, functionality, durability and aesthetics in mind. The ergonomic design is contoured to the shape of your fingers and includes a fatigue reducing hand rest at the base. The non-glare matte black finish is abrasion and impact resistant for long life, yet easily removable, maintainable & repairable. Matching customized right & left hand models available. All the major cockpit functions can be at your finger tips. Thousands have already been installed in over 50 models of aircraft. Features: • 6" long • fits stick OD's from 5/8" to 1-1/4" • Includes 3 ft of shielded cable w/17 conductors. Color coded pre-wiring & installation schematic • Made from lightweight high impact, durable high temp. tolerant flame retardant & flash resistant injected ABS material • Wt: 12 oz. • Easy removal for maintenance, customizing or repair.

Description	Part No.	Price
Military Stick Grip A/C with Flap/Brake (Right)	11-00031	$199.95
Military Stick Grip A/C with Flap/Brake (Left)	11-00032	$199.95
Military Stick Grip A/C without Flap/Brake (R)	11-00033	$199.95
Military Stick Grip A/C without Flap/Brake (L)	11-00034	$199.95
Military Stick Grip with Spoilers (Right)	11-00036	$199.50
Military Stick Grip with Spoilers (Left)	11-00667	$199.75
Replacement Switches for extra customizing:		
Momentary push-button switch	11-00218	$12.75
ON/OFF (8636) SPDT push-button	11-00219	$12.75
Toggle [spring loaded-to-center – ON/OFF/ON]	11-00220	$13.50
Toggle [ON/Center OFF/Momentary ON–ON/OFF/ON]	11-00221	$11.95
Spacers/Adapters:		
1˝ OD x 3/4˝ ID (i.e.-for Lancairs & canard tubes)	11-00222	$26.70
1˝ OD x 7/8˝ ID (i.e.-for Glasairs & RV co-pilot tubes)	11-00223	$24.95
Infinity Switch with China Hat (Right)	11-04757	$19.95

TEAKWOOD STANDARD PISTOL GRIPS

Teak wood is beautiful, absorbs sweat, preventing any sticky slime build-up. Grips come in standard, master and ultra styles in left and right hand. The standard grip comes with a push button on its top with a special dust proof cover. Normally is used for a push-to-talk button, is normally open switch and is good for 250,000 cycles minimum. The master grip has larger head to accom- modate a 4-way trim switch & push-to-talk button.

The trim switch is the same one used with M.A.C. systems. The ultra grip has a larger surface to accommodate the 4-way trim and a auto-pilot and/or air brake with the push-to-talk located near the tip of the index finger. The ultra can handle a total of four switches, when using the air brake, in its head. Configurations can also be custom designed. All grips come with buttons and a 3/4" or 1" standard bore. Larger bores available.

Right Hand 3/4 inch ..... P/N 11-02910 ..... $58.85
Right Hand 1 inch ..... P/N 11-02910-1 ..... $58.85
Left Hand 3/4 inch ..... P/N 11-02915 ..... $58.85
Left Hand 1 inch ..... P/N 11-02915-1 ..... $58.85

RUBBER STICK GRIPS

Rubberized urethane with granular like non-slip surface.

7/8" I.D. Stick Grip ..... P/N 11-00100 ..... $12.95 ea
1" I.D. Stick Grip ..... P/N 11-00101 ..... $13.95 ea
1-1/8" I.D. Stick Grip ..... P/N 11-00102 ..... $12.95 ea

G101 G205 G207 G301

RAC STICK GRIPS

Ray Allen Company G1 and G2 series stick grips use modern, flush fitting push-button switches to control one or two axis electric trim. When one grip is used, these switches can be wired directly to RAC trim servos. This eliminates the need to wire relays in your trim system. However, if two grips are used, you will need either relays or a switch to transfer the control of trims from one grip to the other. The grip itself is made of semi-soft UV and oil resistant foam. The upper switch housing is made of nylon with a lightly textured finish.

The G101 grip (4.75" height) features a momentary contact switch on top that can be used as a PTT button. (Old MAC Model G1)
P/N 11-09930 ..... $36.95

The G205 grip (5.25" height) has 5 functions which include a PTT and a 4 SPDT,momentary contact switches. These switches are rated at 5 amps and can be used for other purposes. (Old MAC Model G5)
P/N 11-09920 ..... $109.85

The G207 grip (5.4"height) has to additional momentary contact push-button switches mounted on top that can be used for controlling functions on avionics, auto-pilot, etc. (Old MAC Model G7)
P/N 11-09925 ..... $153.75

The G301 stick grip feature four individual SPDT momentary contact switches to control one or two axis electric trim. The switches are triggered via a traditonal 4-way "hat" type activator. 6.5" (165 mm) tall.
P/N 11-08644 ..... $68.75

The G303 stick grip has two trim switches, a faceplate slotted vertically for 1-axis trim and a PTT switch. P/N 11-02538 ..... $125.99

The G305 stick grip has 4 trim switches, a faceplate slotted vertically and horizontall for 2-axis trim and PTT switch. P/N 11-02539 ..... $143.90

The G307 stick grip has 4 trim switches, a faceplate slotted vertically and horizontall for 2-axis trim and PTT switch. P/N 11-02540 ..... $159.75

Ray Allen stick grips are designed to fit any stick size up to 1" in diameter with the use of spacers. Two nylon spacer are included with each grip enabling easy installation on 3/4", 7/8" and 1" sticks. All Ray Allen grips come as a complete kit and include pre-cut and stripped, Teflon insulated wire. A die-cut label sheet is also supplied in the G205 and G207 grips

#2 #4

FLIGHT GRIPS

The control stick grips from Flight Grip are modular in design to allow maximum flexibility when specifying switches to control the various electrical items on your aircraft and for ease of installation and assembly. Two "off-the-shelf" configurations are listed below. The Model #2 grip provides for control of two functions using the rocker trigger switch. The trigger switch features momentary contact either side of center, with spring return to center OFF action. The Model #4 grip is the same as the Model #2, but adds two push-button switches for thumb activation in the top cap of the grip. The switch mounted closest to the thumb rest is a latching type (push on – push off), and the remaining switch is a momentary type. Left hand grips are available with all the same switch options. Grips are designed to fit 1-1/8" OD control sticks and adapter bushings are available to adapt to 1", 7/8" and ¾" OD control sticks.

#2 (Right Hand-2 Functions) ..... P/N 11-02000 ..... $126.95
#4 (Right Hand-4 Functions) ..... P/N 11-02050 ..... $149.95
#2L (Left Hand-2 Functions) ..... P/N 11-06753 ..... $127.75
#4L (Left Hand-4 Functions) ..... P/N 11-06754 ..... $172.75
Adapter Bushing 1" ..... P/N 11-06755 ..... $18.65
Adapter Bushing 7/8" ..... P/N 11-06756 ..... $18.65
Adapter Bushing 3/4" ..... P/N 11-06757 ..... $18.65

HOMEBUILT CONTROL STICKS

These homebuilt control grips are made of high-strength urethane plastic, finish painted in matte black and come complete with all necessary hardware (AN screw, nut, washers). Available unbored or bored to accept 7/8", 1", or 1-1/8" diameter tubing.

All of these grips (except unbored) are available w/PTT Switch at $84.75 Add -1 to end of part number for PTT.

Grip	Bore	Part No.	Price
Right	Unbored	11-01010	$71.50
Right	7/8" Bore	11-01015	$72.25
Right	1" Bore	11-01020	$71.50
Right	1-1/8" Bore	11-01025	$71.50
Left	Unbored	11-01010-L	$63.25
Left	7/8" Bore	11-01015-L	$71.65
Left	1" Bore	11-01020-L	$69.50
Left	1-1/8" Bore	11-01025-L	$63.25
Neutral	Unbored	11-02010	$72.00
Neutral	7/8" Bore	11-02015	$71.85
Neutral	1" Bore	11-02016	$72.00
Neutral	1-1/8" Bore	11-02017	$71.50

EL

RAC TRIM SYSTEMS

RAC ELECTRIC TRIM SERVOS

Ray Allen trim systems were designed specifically for experimental aircraft. Ray Allen servos are small enough to fit in individual control surfaces or can be used with lighweight springs acting directly on the control system. Ray Allen trim systems also come with RS2 rocker switches and RP3 LED indicators. All Ray Allen indicators operate off of feedback sensors located inside the servo. These feedback sensors are purposefully isolated from the power supply to the servo motor to guard against possible electronic failure. Ray Allen trim systems also come with a RC8-7 clevis/pushrod kit. Ray Allen has three different T2 and T3 servos available: • T2-7A Trim System has .7" (17mm) travel • T2-10A Trim System has 1.0" (26mm) travel • T3-12A Trim System has 1.2" (31 mm) travel

In addition, we also have available the T4-5 Trim System which has .5 inch (13mm) travel. This servo does not have a compatible indicator.

T2-10A

T4-5

*T2-7A = exact replacement for MAC 4A servo.*T2-10A = exact replacement for MAC 6A servo. *T3-12A = exact replacement for MAC 8A servo. *T4-5 is exact replacement for the Mac S9 servo.

T2/T3 SERVO SPECIFICATIONS

Operating Voltage	12-14 VDC
No Load Current	150 ma
Weight	4oz. (113 g)
Max Thrust	40 lbs. (18 kg)
Max Operating Thrust	20 lbs. (0.9 kg)
Output Shaft Movemt.(T2-7A*)	.0.7" (17mm)
Output Shaft Movemt.(T2-10A*)	1" (26mm)
Output Shaft Movemt.(T3-12A*)	1.2" (31mm)
Output Travel Time (T2-7A)	10 seconds
Output Travel Time (T2-10A)	16 seconds
Output Travel Time (T3-12A)	19 seconds

T4-5 SERVO SPECIFICATIONS

Operating Voltage	12-14 VDC
No Load Current	75 ma
Weight	2.5 oz. (71 g)
Max Thrust	30 lbs. (13.5 kg)
Output Shaft Movement	0.5" (13mm)
Output Travel Time	15 seconds
Length	2.25" (57mm)
Width	2.25" (57mm)
Height	0.77" (20mm)

RAC SERVO SYSTEMS

RAC Servo System	Part Number	Output Shaft		Price ea.
		Movement	Travel Time	
T2-7A	11-11505	0.7 in.	10 sec.	$259.00
T2-10A	11-11605	1.0 in.	16 sec.	$259.00
T3-12A	11-11615	1.2 in.	19 sec.	$279.00
T4-5	11-11620	0.5 in.	15 sec.	$259.00

SERVOS ONLY

RAC Servo System	Part Number	Output Shaft		Price ea.
		Movement	Travel Time	
T2-7A	11-02048	0.7 in.	10 sec.	$154.85
T2-10A	11-02058	1.0 in.	16 sec.	$158.50
T3-12A	11-02065	1.2 in.	19 sec.	$178.50
T4-5	11-02066	0.5 in.	15 sec.	$263.00

*T2-7A = exact replacement for MAC 4A servo. *T2-10A = exact replacement for MAC 6A servo.
*T3-12A = exact replacement for MAC 8A servo. *T4-5 is exact replacement for the Mac S9 servo.

RAC SWITCHES

RS2 ROCKER SWITCH - Very positive snap action in 2 directions and returns to a center off position. It was designed specifically for Ray Allen trim systems. It is wired to connect both power leads to ground when the rocker is released. This eliminates motor coasting & allows very precise trimming. The RS2 switch is rated at 1amp. The faceplate measures 1.75" (44mm) x 1.0" (25mm) x 1.47" (37mm) deep. Included with trim systems or can be purchase separately. Self adhesive labels are not included. Sold separately. P/N 11-02035 ..... $28.70

ROS-4 FOUR-WAY SWITCH - This compact multi-action switch can be installed inside your control stick grip to activate both elevator and aileron trims. ROS-4 has a SPST action so it must be used in conjunction with a relay deck to operate Ray Allen servos. Rated at 1 amp. P/N 11-02075 ..... $87.75

RANS ELEVATOR TRIM SYSTEM

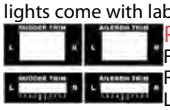
Rans Elevator Trim System features a trim tab actuated by a push-pull wire. By turning the trim wheel, the wire moves the trim tab. The system has the look and feel of a standard aircraft trim wheel. The trim tab is constructed of sheet aluminum and can be adapted to the trailing edge of many homebuilts and ultralights. The trim tab is sized for both low & high speed aircraft and since it is mechanical, requires no battery or power source other than the pilot's hands.

Trim Sys. less Tab (no panel or flap lever mount) ..... P/N 11-09955 ..... $269.95
Trim Sys. with Lower Panel ..... P/N 11-09960 ..... $308.00
Trim Sys. Flap Mount ..... P/N 11-09965 ..... $326.00
Trim Sys. without Wheel ..... P/N 11-09970 ..... $102.95

RAC INDICATORS/SENSORS/ACCESSORIES

RP3 LED POSITION INDICATOR – This LED meter is designed to be installed in the cockpit and give an indication of the servo output shaft position. The ten LEDs are the brightest available for superior visibility in sunlight, but can be dimmed for night flight. It can be installed horizontally or vertically. 3 wires as small as 28 gage connect the indicator directly to a Ray Allen servo (or a position sensor). The face plate measures 1.75" x 0.75"x 1.1"deep. The RP3 is the standard position indicator included in R.A. trim systems. Labels are not included. See labels below. P/N 11-02020 ..... $97.75

GWL-1 GEAR WARNING LIGHTS – This 6 light indicator is designed to be installed in the cockpit and give an indication of the landing gear position. The lights are high intensity LEDs and are inset to probide maximum visibility in bright sunny conditions. The top lights are yellow and the bottom are green. Six 26-gage wires connect the lights directly to the gear safe/unsafe switches (not included). The faceplate measures 1.35"x 1.75" x 1.5"deep. Gear warning lights come with labels pre-installed. P/N 11-01575 ..... $105.95



POSITION INDICATOR/ROCKER SWITCH LABELS - Finish off your panel with these high quality labels. Rocker switches and needle indicators require a LARGE label, LED indicators use a SMALL label. Elev 1 shows trim down at top of label.

Rudder - Large ..... P/N 11-01819 ..... $0.55
Rudder - Small ..... P/N 11-01820 ..... $0.55
Aileron - Large ..... P/N 11-01816 ..... $0.55
Aileron - Small ..... P/N 11-01815 ..... $0.65
Elev 1 - Large ..... P/N 11-01822 ..... $0.55
Elev 1 - Small ..... P/N 11-01821 ..... $0.55
Wing Flap - Large ..... P/N 11-01818 ..... $0.55
Wing Flap - Small ..... P/N 11-01817 ..... $0.55
Cowl Flap - Large ..... P/N 11-01576 ..... $0.55
Cowl Flap - Small ..... P/N 11-01814 ..... $0.55

POS-12 POSITION SENSOR – When combined with a Ray Allen indicator, this sensor can be used to measure the position of wing flaps, cowl flaps, or many other mechanisms.Small enough to be installed anywhere, size: 2.7"l x 0.8"w x 0.5"h. (note: T2 & T3 servos have their own built-in sensors) 1.2" travel. P/N 11-01321 ..... $33.85

POS-5 POSITION SENSOR - Same as POS-12 Sensor. Measuring only 2.7"(69 mm) x .5"(13 mm) x .8"(20 mm) , it's small enough to be installed almost anywhere. 5"(13 mm) travel. P/N 11-08092 ..... $37.90

REL-2 SERVO RELAY DECK – This device converts the momentary contact action of the ROS-4 4-way switch, or any SPST pushbutton switch, into a DPDT action that is necessary to operate Ray Allen servos. You will need one of these relay decks for each servo in your installation. Measures 1.6" (40 mm) x 1.8" (49 mm) x 1.1" (28 mm). P/N 11-05312 ..... $47.60

SPD-1 SERVO SPEED CONTROL – Enables you to slow the speed of your trim servo to suit your individual installation. Size: 2"x 0.5"x 0.8". P/N 11-02078 ..... $48.85

REG-1 12V REGULATOR – Enable you to operate servos and indicators in aircraft having 28V electrical systems. Converts all input voltages up to 35V to 12V. Capable of supplying 1 amp of current allowing you to operate 2 trim systems simultaneously. Size: 2"x 0.5"x 0.8". P/N 11-02036 ..... $49.50

RAY ALLEN BEZEL ONLY WITH HARDWARE- -They make an excellent addition to any instrument panel. The bezel was designed to integrate a professional appearing label near the switch.The bezel measures 1.25" (32 mm) x 1.35" (34 mm). P/N 11-08642 ..... $11.95

RC8-7 CLEVIS/PUSHROD KIT – RC8-7 Clevis/Pushrod Kit - 11-02040. Contains two 8/32 threaded clevis forks, one 7" stainless steel pushrod and clevis pin hardware. NOTE: This clevis and pushrod kit is not compatible with Ray Allen POS series position sensors.

RC8-7 Kit ..... P/N 11-02040 ..... $27.85
T4 Pushrod Kit ..... P/N 11-02042 ..... $15.35

10/32 THREADS CLEVIS WITH HARDWARE - Contains one 10/32 threaded clevis fork, stainless steel pushrod and clevis pin hardware. This clevis with hardware kit is not compatible with Ray Allen POS series position sensors. ..... P/N 11-08643 ..... $12.90

WC2 5-WIRE TEFLON® INSTALLATION CABLE – This durable, flexible wire cable is highly recommended for Ray Allen installations. 5 separate color coded, 26-gage, 19-strand, silver-plated, FEP Teflon® insulated wires inside a tough, all Teflon® sheathing.

20 ft. roll ..... P/N 11-01577 ..... $24.00
25 ft. roll ..... P/N 11-01578 ..... $30.00
50 ft. roll ..... P/N 11-01579 ..... $60.00

EL

RAC BEZEL SWITCHES – STICK GRIPS

RAC - RBS SERIES BEZEL SWITCHES

An excellent addition to any instrument panel. The bezel measures 1.25"w x 1.35"h. A die-cut label sheet is purchased separately. The switches are SPST. They have screw terminals and are rated at 15 amps. Specify Toggle (RBS-T11) or Pushbutton (RBS-P11) when ordering. The Ray Allen Gear Bezel Switch (RBS-GS) is the same custom bezel as above combined with SPDT retract gear toggle switch. The switch is rated at 15 amps and has a pull to unlock feature preventing accidental engagement. The Gear Bezel Switch comes with the labels pre-installed.

RAC Part No.	Description	Part No.	Price
RBS-T11	Bezel Switch - Toggle	11-01364	$19.85
RBS-P11	Bezel Switch - Push Button	11-01365	$19.90
RBS-GS	Bezel Gear Switch	11-01366	$84.75
RBS-L1	Bezel Switch label sheet	11-01367	$4.95

SINGLE AXIS TRIM RELAY BOARD

These Trim Relay Boards allow control of an aircraft's trim motors from the typical switches found in most stick grips. As the switches in the grips are too small to handle the motor loads and usually do not have the required number of poles, the 'TRB' offers a simple, elegant solution that is easy to wire and understand. The boards have a per axis rating of 10A at 12 volts, (24V units are also available). 4.00"L x 2.50"W x 1.00"H. P/N 11-09849 ..... $54.95

3 AXIS TRIM RELAY BOARD

3 Axis trim relay and buffer board has been designed to allow easy control of trim motors from small grip mounted or remote switches. Three Axis control is possible with each of the circuits being configured in a double throw format. "Off" circuit conditions apply ground to both motor wires providing an effective braking actions. Board will work with single or winding DC motors. Other remote controls are possible such as auto pilot disconnect or recognition lights and more. Relays are continuous DC rated at 10 Amps. Dimensions are 5.6"L x 4"W x 1.0"H

P/N 11-02043 ..... $134.95

TRIM SPEED CONTROLS

A trim motor that moves too fast can be distracting and dangerous in a high performance aircraft. The Trim Speed Control module lets you adjust the speed of a motor in trim sensitive applications. It has also been used in many 24 volt aircraft that are equipped with 12 volt trim motors. The module installs in-line in an existing trim system with only four connections and requires no external power supply. Trim speed is easily set on the module as required. This unit does not generate any noise during operation and draws zero current when not in use.

Example part selection - 24 volt aircraft with a small 12 volt trim motor would need a TSC24-LC.

There are four options available:

TSC12-LC 12/14 volt operation 3A continuous - 7A surge
P/N 11-11561 ..... $69.95

TSC24-LC 24/28 volt operation 3A continuous - 7A surge
P/N 11-11562 ..... $75.95

TSC12-HC 12/14 volt operation 5A continuous - 7A surge
P/N 11-11563 ..... $102.95

TSC24-HC 24/28 volt operation 5A continuous - 7A surge
P/N 11-11564 ..... $107.95

TRIM SWITCHES

TRIM SWITCH CA3112 - Replace your old S-Tec trim switch with Cygnet's new direct replacement switch. The switch is fully compatible with S-Tec and other trim control systems. Cygnet's switch uses two single-pull-double-throw toggles, the same as the S-Tec version, for straightforward replacement of existing switches. Cygnet's switch is machined from aircraft grade aluminum, eliminating cracking and breakage associated with the OEM plastic switches. Includes switch assembly and 2 mounting screws. P/N 11-07354 ..... $279.95

TRIM SWITCH CA100-1 - The CA100-1 switch is used on a certified aircraft. It uses MIL-SPEC switches (SPST) and precision machined from aircraft aluminum and will not crack or break like cheap plastic switches. It has a nice tactile click action. P/N 11-07355 ..... $246.95

GEAR WARNING LIGHTS

This 6 light indicator is designed to be installed in the cockpit and give an indication of the landing gear position. The lights are high intensity LED's and are inset to provide maximum visibility in bright sunny conditions.

The three top lights are YELLOW and the three bottom lights are GREEN. Six wires as small as 26 gage connect the lights directly to the gear safe/unsafe switches (not included).

The faceplate measures 1.35"(34 mm) X 1.75"(45 mm) and it is 1.5"(38 mm) in depth. Ray Allen gear warning lights come with label pre-installed. GWL-1 PN 11-01575

This indicator is also available with BLUE top lights for SEAPLANE useage. GWL-1B PN 11-07963

Description	Part No.	Price
Gear Warning Lights GWL-1	11-01575	$105.95
Gear Warning Lights GWL-1B	11-07963	$165.00

PIONEER WOODEN CONTROL GRIP WITH PTT

Hand made with beautiful black walnut wood harvested in the Northwest. These deluxe quality wooden control grips are shaped and sanded by hand to a baby smooth finish. The finish is a super hard polyurethand gloss finish that revals the finest luxury cars.

Large advantage of this design is it's FLEXIBILITY as the switch face is adaptable to nearly all avionics packages and it is serviceable , with removable switch plate for repair. Each grip comes completely pre-wired with up to 4 switches installed as shown; including the "COOLIE HAT" trim, PTT, TCAD Mute, and the A/P Disconnect switch. (The switch designation may be your choice.) The grips shown are designed to fit all aircraft with your choice of control stick shaft sizes which are 1" , 7/8" , & 3/4".

Description	Orientation	Part No.	Price
Pioneer Wooden Control Grip - 4 Button - Pre-Wired	Right Hand	11-12175	$289.95
Pioneer Wooden Control Grip - 4 Button - Pre-Wired	Left Hand	11-12226	$289.95
Pioneer Wooden Control Grip - PTT Only - Pre-Wired	Right Hand	11-12176	$219.00
Pioneer Wooden Control Grip - PTT Only - Pre-Wired	Left Hand	11-12225	$219.00
Pioneer Deluxe Walnut Grip with PTT Engraving and 4 Switches	---	11-12332	$327.75

EL

SMARTSTART MODULE

An electronic control module that controls the operation of the engine starter system. Improves the safety and security of push-button or key-switch starting systems by providing an interlocked and time limited operation of the engine starter. SmartStart controls standard aviation starter contactors and provides simple integration of control stick switch or panel mounted start switches. SmartStart includes inputs for interlock and arming switches and provides a 1 minute timer for activating the starter contactor and includes an armed LED that indicates when the engine may be started. Helps avoid unintentional activation of the engine starting system. Available with an optional airspeed switch that ensures in flight restarting of the engine may be accomplished at anytime without the need to press the arming button. Hidden arming switch provides improved anti-theft protection. Door/canopy interlock provides improved safety. Compatible with standard keyed mag/starter switch.

Description	Part No.	Price
Smartstart Module	11-08499	$67.50
SmartStart Module Kit - Includes: module, wiring harness, and airspeed switch	11-08502	$148.50
Accessories		
Description	Part No.	Price
Smartstart Wiring Harness	11-08501	$40.50
Airspeed Switch 40 Knot for 2 speed function	11-08665	$44.10

INTELLIGENT POWER STABILIZER

Provides aircraft bus voltage surge and sag protection for the connected electrical equipment. The IPS system allows electronic equipment such as engine monitors, EFIS and GPS's to be operational before and during engine starting. Used with aircraft engine monitors it ensures the pilot can monitor critical engine operating parameters such as oil pressure during the engine starting process. Ensures the connected electronic equipment is provided with a stabilized source of power even when the aircraft battery voltage drops significantly. Additionally provides surge protection by actively clamping the regulated output voltage. Features a panel mounted low voltage warning light which may be used to provide a pilot warning when the aircraft bus voltage falls below 12 volts.

4 amp ..... P/N 11-08495 ..... $265.50
8 amp ..... P/N 11-08496 ..... $328.50

INTELLIGENT POWER STABILIZER 24 VOLTS, 5 AMP

The Intelligent Power Stabilizer, IPS, is an electronic power converter for critical electrical equipment found in general aviation aircraft. The IPS system provides aircraft bus voltage surge and sag protection for the connected electrical equipment. The IPS system will operate over an input voltage range from 10 volts to 30 volts and provides a regulated output voltage of 24 volts. The IPS system allows electronic equipment such as engine monitors, EFIS and GPS's and radios to be operational before and during engine starting. This important feature allows the pilot to load flight plan data into the aircraft GPS prior to starting the engine, thereby saving fuel and operating expense. When used with aircraft engine monitors it ensures the pilot can monitor critical engine operating parameters such as oil pressure during the engine starting process. P/N 11-09712 ..... $292.50

INTELLIGENT LIGHTING CONTROLLER

Designed specifically to operate the lighting circuits used in homebuilt aircraft. Provides control of up to 4 lighting circuits plus dimmable control of up to 3 channels of instrument and cabin lights. The 4 lighting circuits may be used to control landing lights, taxi lights, strobe lights and navigation lights. Each channel is independently powered and controlled. Provides a wig-wag function between two of the lighting circuits. Each dimmable channel may include incandescent or LED lighting up to 1 amp. Specifications: • Input Voltage: 10-30 volts DC • Output Voltage: 4- Switched circuit rated at 10 amps each, 3 - Dimmed circuits rated 1 amp each • Dimmers: True DC:DC converter with full power filtering and regulated 2-12 volt outputs • Inputs: All switch inputs are low current closures to +voltage • Wig-Wag: 150 cycles/minute between channel 1&2; 1 minute warm-up time • Wiring: Standard 15-pin D-sub connector (male on controller) for connection to switching panel. • Enclosure: Overall dimensions 4.7" x 3.7" x 1.2"; Cast aluminum • Weight: 1.0 lb P/N 11-08497 ..... $346.50

UNIVERSAL SWITCH-SPDT AIRSPEED KIT

Universal switch airspeed kit (USW-1) includes an ASW-1 airspeed switch and a Universal Switch-SPDT controller. This combination of components allows for the switching of electrical loads up to 10 amps and up to 30 volts based on aircraft speed. The airspeed set point is factory calibrated to 100 knots, however, it may be field adjusted to switch at any speed between 55 and140 knots. Provides both a normally open and a normally closed contact for controlling any electrical load up to 10 amps. The system works with aircraft power systems from 10-30 volts. P/N 11-08498 ..... $85.50

INTEGRATED BACK-UP BATTERY SYSTEM

Combines a Ni-mh battery pack, a charger and switching logic in one convenient package. An engineered solution to enable an endurance bus for critical loads found in aircraft. It simplifies the wiring and installation of a source of back-up power by integrating all of the key elements into a single enclosure. Provides back-up power to electronic loads such as EFIS, GPS, Autopilots, and engine monitor systems. Connects to the standard aircraft power bus and provides an output to critical equipment that requires back-up power. Specifications: • Input Voltage: 10-15 volts DC • Input Current: 9.75 amps max continuous • Output Voltage: 10-12 volts DC during back-up operation • Output Current: 6 amps continuous, 9 amp peak for radio transmissions • Enclosure: Cast aluminum,4.74" x 3.13" x 2.17" • Weight: 2.5 lbs

Description	Part No.	Price
TCW IBBS	11-08503	$337.50
Accessories	Part No.	Price
TCW IBBS Wiring Harness with CPC Connector	11-08504	$76.50
TCW IBBS mating CPC connector for field wiring.	11-08505	$15.30
TCW IBBS Charger	11-09444	$94.50

TCW SAFETY-TRIM SERVO CONTROLLER

An electronic speed control system for standard electric trim servos found on many homebuilt aircraft. It replaces other speed controllers and relay modules with an electronic solution that resolves issues such as run-away trim and failure to operate conditions. Features: Very simple wiring, no extra parts needed for pilot and co-pilot trim switches • Designed for standard electric trim servos, such as the Ray Allen T2 & T3 series • Short circuit proof, reverse polarity protected • 1 axis, 2 axis models available • For Experimental aircraft only NOT TSO'd • Made in USA -- patented Specifications: • Input voltage: 10-30 volts DC • Output voltage: User adjustable 6-12 volts DC 1 amp maximum • Enclosure: Overall dimensions 5.7" x 2.5" x 1.5" • Weight: 6oz.

Description	Part No.	Price
Safety-Trim Single Axis Servo Controller	11-08506	$166.50
Safety-Trim Single Axis, 2 Speed Servo Controller	11-08529	$220.50
Safety-Trim Dual Axis Servo Controller	11-08530	$256.50
Safety-Trim Dual Axis, 2 Speed Servo Controller	11-08531	$310.50
Accessories		
Description	Part No.	Price
Safety-trim 8 ft wiring harness for single axis controller	11-08532	$58.50
Safety-trim 8 ft wiring harness for dual axis controller	11-08533	$76.50
Airspeed Switch 100 Knot for triggering 2 speed function	11-08534	$44.10

TCW CONTROL VALVE SERVO KIT

Fully proportional linear actuator servo for valves and dampers: Ideal for: Heater flapper doors, Oil cooler control, Alternate air door, Ventilation dampers

P/N 11-11298 ..... $189.00

TCW CONTROL VALVE SERVO BUTTERFLY VALVE

Butterfly Valve for oil coolers works with the TCW Control Valve Servo Kit.

P/N 11-11299 ..... $69.75

INTELLIGENT FLAP CONTROLLER

Designed specifically to operate DC motor actuators, particularly the Van's Aircraft series of Flap Actuators used in RV type homebuilt aircraft. Connects to the standard up-off-(down) switches commonly used to control flap operation and directly drives a Van's flap actuator. Vfe protection by sensing airspeed and preventing flap deployment above a set airspeed. Allows for Pilot and Co-pilot flap switches and resolves the possible conflicts if the switches are operated in opposite directions. Requires NO sensor and is fully compatible with Safety-Trim servo controllers. Specifications: • Input voltage: 10-30 volts DC, reverse polarity protected • Output voltage: Overload protected, 2 amp continuous, 5 amp peak • Inputs: Flap switch inputs are closures to ground Pilot and Co-pilot switches separately wire to IFC controller Air speed switch is a closure to ground • Output: Time limited flap up voltage limited to 15 seconds • Wiring: Standar 15-pin D-sub connector (male on controller) pre-made wiring harness available • Enclosure: Overall dimenions: 5.7" x 2.5 x 1.5" • Weight: 4oz

Description	Part No.	Price
Flap Control	11-08493	$202.50
Flap Control Harness	11-08494	$58.50
Airspeed Switch 100 Knot for triggering 2 speed function	11-08534	$44.10

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SEE WWW.AIRCRAFTSPRUCE.COM FOR SPECIFICATIONS ON TCW PRODUCTS.

AIRCRAFT SPRUCE WEST
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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

IGNITION SWITCHES – E.I. COMMANDER

ACS KEYED IGNITION SWITCHES

11-03169

MFG BY ACS PRODUCTS CO.

These fine quality switches are being used in many aircraft. They provide "on" and "off" electrical control of both magnetos on single engine aircraft. The key-operated switches mount from rear of panel in 7/8" dia. hole. Available with or without starter position.
Experimental aircraft only or 337 Form required for Production aircraft Made in the U.S.A.

A-510-5 Without Starter Position., Supplied with switch plate and two keys. (diode not required) ..... P/N 11-03169 ..... $124.75
A-510-2 With Starter Position., Supplied with switch plate two keys. (diode included) ..... P/N 11-03170 ..... $137.85

ACS IGNITION SWITCH AND LOCK SETS

MODEL NO. A-510-5K, Includes ignition switch without starter position, two aircraft locks (one door and one baggage lock)* and two keys mated to ignition switch and locks. (Diode not required) ..... P/N 11-03171 ..... $148.75

Part No. 11-03668

MODEL NO. A-510-2K, Includes ignition switch with starter position, two aircraft locks (one door and one baggage lock)* two keys mated to ignition switch and locks . (diode included) ..... P/N 11-03172 ..... $168.85
* Baggage lock may be modified to second door lock if preferred.

Part No. 11-03667

ACS IGNITION SWITCH PLATES

Plate without start - A-2255-A1 ..... P/N 11-03668 ..... $1.75
Plate With start - A-2255-A ..... P/N 11-03667 ..... $1.75

ACS DOOR AND BAGGAGE LOCK SETS

The door and baggage locks furnished with the ignition switches above are also available separately. Set of two locks (one door and one baggage lock) furnished with one key mated to both locks. The baggage lock may be used as second door lock if preferred. ..... P/N 11-01600 ..... $39.50
ACS Single Sided Banlk Key uncut without boot ..... P/N 11-03175 ..... $3.95
ACS Double Sided Blank Key uncut with black boot ..... P/N 05-03666 ..... $5.50
ACS Cut Key with boot (specify key #) ..... P/N 05-04103 ..... $7.95

ACS LEVER TYPE IGNITION SWITCH

A-510-1 Lever Type - Twist-Knob Without Starter Position. (diode not required) ..... P/N 11-03176 ..... $146.95

ACS STARTER SOLENOID DIODE ASSEMBLY

This is required for all new A-510-2 and A-510-2K ignition switches for compliance with ACS Service Bulletin SB92-01.
Diode Assembly for Starter Solenoid with one or Two Coil Contacts
P/N 16050-2 ..... $7.80

ACS IGNITION SWITCH SERVICE KIT

Consists of replacement internal switch contacts, lubricant, diode assembly, and terminal board as required for compliance with ACS Ignition Switch Service Bulletin SB92-01. Kit A-3650-2 contains diode assembly for starter solenoids with one or two coil contacts.
Kit No. A-3650-2 ..... $16.85

BENDIX IGNITION SWITCHES

MODEL NO. 10-357290-1, Without Starter Position. Includes two keys. Furnished with Switch Plate $287.95
MODEL NO. 10-357200-1, With Starter Position. Includes two keys. Furnished with Switch Plate $336.00
MODEL NO. 10-357210-1, With push to start feature. Includes two keys. Furnished with Switch Plate $527.00

10-126676

10-51127

BENDIX SWITCH PLATES -

Without Starter Position ..... Switch Plate No. 10-51127 ..... $3.95
With Starter Position ..... Switch Plate No .10-126676 ..... $4.85

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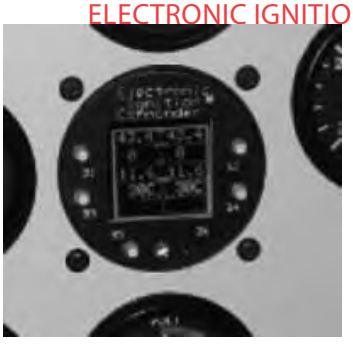
ELECTRONIC IGNITION COMMANDER



The Electronic Ignition Commander provides information and control solutions for experimental aircraft powered by Lycoming and Continental aircraft engines WHICH UTILIZE THE P-MAG ELECTRONIC IGNITION. 2 1/4" Standard Instrument Display.

Features: • Continuous verification of timing mark synchronization and a Preflight screen that reports the timing synchronization and condition of the ignition harnesses and spark plugs. • Monitor E/P-mag operation. • Three user definable timing map shifts in addition to the default A & B curves. • Useful for running at high altitudes, auto fuel, or when it is desirable to use a different than standard timing curve. • Dimmable screen for night flight. • Sunlight readable Organic LED display with no viewing angle restrictions. • Configurable tachometer with Hobbs meter function. • Pilot adjustable RED line with multiple YELLOW RPM Ranges. • Configurable LED warning light when running in YELLOW restricted ranges. • Standard tachometer display with optional Manifold Pressure. • Remote update capability allows you to update you EICommander from any computer.

2-1/4" Standard Instrument ..... P/N 11-10041 ..... $600.00

BENDIX STARTING VIBRATORS

Part Number	Description	Used with Ignition System	Price
10-176487-121	12V DC	S-200, S-600, S-700	$395.00
10-357487-241	24V DC	S-200, S-600, S-700	$754.00
10-176487-122	12V DC	S-1200	$395.00
10-357487-242	24V DC	S-1200	$644.00
10-176485-121	12V DC W/ Relay	S-200, S-600, S-700	$1,496.00
10-176485-241	24V DC W/ Relay	S-200, S-600, S-700	$1,579.00
10-176485-242	24V DC W/ Relay	S-1200	$1,668.00

KLIXON 7270-5 CIRCUIT BREAKERS

Klixon 7270 series circuit breakers were designed to utilize less space behind the panel while protecting wire and cable in aircraft and ground support equipment on 120 VAC, 400 Hz or 30 VDC systems. Inherently resistant to shock and vibration, the Klixon disc element is capable of calibration within close tolerances throughout the service life of the breaker. Features: Trip–free operation, Snap–acting thermal element, Small size, Light weight, MIL-C-5809 qualified, High interrupting capacity, Typical use: Aircraft and ground support equipment. Specifications: Vibration: 10G minimum, 50–500 Hz (other vibration levels available). Mechanical Shock: 30G. Acceleration: 10G. Weight: 39 grams maximum (7270-1 and 7271-8). Interrupt Current: 4,000 amps at 30 VDC;3,500 amps at 120 VAC, 400 Hz. Endurance: 5,000 cycles: 120 VAC. 400 Hz, inductive;5,000 cycles: 120 VAC 400 Hz, resistive;5,000 cycles: 30 VDC, inductive;2,500 cycles: 30 VDC, resistive;5,000 cycles: Mechanical, no load.

Description	Current Rating	Part No.	Price
7270-5-3	3 amps	11-08344	$261.95
7270-5-5	5 amps	11-08345	$181.75
7270-5-7.5	7.5 amps	11-08346	$179.75
7270-5-10	10 amps	11-08347	$148.90
7270-5-15	15 amps	11-08348	$182.75
7270-5-20	20 amps	11-08349	$181.75
7270-5-25	25 amps	11-08350	$180.75
7270-5-30	30 amps	11-08351	$180.75
7270-5-35	35 amps	11-08352	$181.90

KLIXON 7274-2 CIRCUIT BREAKERS

Klixon 7274 series are small, lightweight, low amperage devices that are specifically designed to protect aircraft/aerospace cable and components in airborne vehicles and equipment. The commercial grade version is the Klixon 7277 series. The 7274 features a trip–free, indicating reset button and is available in standard ratings from ½ to 20 amps. A "wiping action" contact design assures low voltage drop, faster trip time and high reliability in low voltage applications. They are available in standard ratings from ½ to 20 amps. A water resistant panel seal designed to fit over the push button actuator is available for applications that require this type of protection. Features: Uses minimum space, Light weight, Trip–free, MIL-C-5809 qualified, Low amp, High vibration resistance, Typical use: Military airborne vehicle and equipment protection. Specifications: MS#: MS26574-1.5. Vibration: 10G minimum, 50–500 Hz (other vibration levels available). Mechanical Shock: 35G. Acceleration: 10G. Weight: 7274-2 (MS 26574): 28 grams maximum; 7274-4 (MS 26574 A): 28 grams maximum; 7274-11 (MS 22073): 33 grams maximum; 7274-69 (MS 22073V): 33 grams; 7274-70 (MS 26474L): 33 grams. Interrupt Current: 0.50–5 amps: unlimited at 28 VDC; 7.50–15 amps: 2,000 amps at 28 VDC; 0.50–1.50 amps: unlimited at 120 VAC, 400 Hz; 2–5 amps: 800 amps at 120 VAC, 400 Hz; 7.50–20 amps: 500 amps at 120 VAC, 400 Hz. Endurance: 2,500 cycles: 120 VAC, 400 Hz inductive; 5,000 cycles: 120 VAC, 400 Hz resistive; 2,500 cycles: 30 VDC inductive; 5,000 cycles: 30 VDC resistive; 10,000 cycles: Mechanical, no load

Description	Current Rating	Part No.	Price
7274-1	1.0 amps	7274-2-1	$17.50
7274-2-1.5	1.5 amps	11-08353	$17.50
7274-2-2	2 amps	11-08354	$17.50
7274-2-2.5	2.5 amps	11-08355	$17.50
7274-2-3	3 amps	11-08356	$16.95
7274-2-4	4 amps	11-08357	$17.50
7274-2-5	5 amps	11-08358	$17.50
7274-2-7.5	7.5 amps	11-08359	$17.50
7274-2-10	10 amps	11-08360	$17.50
7274-2-15	15 amps	11-08361	$16.95
7274-2-20	20 amps	11-08362	$16.95

KLIXON 3TC7 CIRCUIT BREAKER

A lightweight, high performance, non–ambient temperature compensated circuit breaker. The series features a trip–free design that prevents the circuit breaker from being closed manually on overload. Features: Miniature size, Light weight, Trip–free design, Current rating: 5 amps, AS58091 qualified (MS25244), High vibration resistance, Typical use: Aircraft, avionics and electrical systems. Specifications: MS25244-5. Voltage Drop: 0.25. Vibration: 10G. Mechanical Shock: 30G at peak. Acceleration: 10G. Weight: 38.9g. Operating Altitude: 65,000 ft

Description	Current Rating	Part No.	Price
3TC7-5	5 amps	11-08374	$48.50
3TC7-7.5	7.5 amps	11-08375	$48.50
3TC7-10	10 amps	11-08376	$48.80
3TC7-15	15 amps	11-08377	$48.50
3TC7-20	20 amps	11-08378	$48.50
3TC7-25	25 amps	11-08379	$48.50
3TC7-30	30 amps	11-08380	$48.50
3TC7-35	35 amps	11-08381	$48.50

KLIXON 2TC2 CIRCUIT BREAKER

Their light weight and small size make them especially well suited for aircraft, avionics and electronic systems. The Klixon trademark has set the standard for aerospace circuit breakers and the TC series offers the endurance and reliability required by exacting military specifications. The 2TC series breaker ratings are coordinated so any rating will trip before another rating twice its capacity in the event of a fault. of up to 6,000 amps let–thru current. This results in improved overall equipment performance since only the smallest faulted circuit is interrupted, while larger circuits remain operational. Ambient compensated circuit breakers let designers specify smaller gauge wire where the circuit breaker and wiring are exposed to different ambient temperatures. They are especially suited for application where ambient temperature exceeds the 160°F (71°C) maximum of non–ambient compensated thermal circuit breakers. The TC series may be applied where operating temperatures are as high as 250°F (121°C) with no derating of the circuit breaker. This eliminates the need for cooling air and allows substantial weight, space, and cost savings. The complete line of TC series circuit breakers is trip–free. The circuit breaker cannot be maintained closed during an overload even with the actuator button held closed. For its miniature size, the 2TC series offers unusually high current interrupting capacity. Overloads can be safely interrupted without affecting calibration or operating performance in the standard 2TC series for: • Overloads up to 6,000 amps at 28 VDC • Overloads of 2,000–3,500 amps at 120 VAC, 400 Hz. Features: Miniature size, Light weight, Trip–free design, High vibration resistance, High interrupting capacity, Coordinated ratings, AS58091 qualified (Also: Military Approvals, FAA PMA), Typical end use: Aircraft power distribution systems Specifications: Vibration 10G minimum, 50–500 Hz (other vibration levels available) Mechanical Shock 50G. Acceleration 10G

Description	Current Rating	Part No.	Price
2TC2-1	1 amps	11-08382	$16.90
2TC2-2	2 amps	11-08383	$16.90
2TC2-2-1/2	2.5 amps	11-08384	$16.90
2TC2-3	3 amps	11-08385	$16.90
2TC2-4	4 amps	11-08386	$16.90
2TC2-5	5 amps	11-08387	$16.90
2TC2-7.5	7.5 amps	11-08388	$16.90
2TC2-10	10 amps	11-08390	$16.90
2TC2-15	15 amps	11-08394	$16.90
2TC2-20	20 amps	11-08395	$16.90
2TC2-25	25 amps	11-08396	$16.90

KLIXON 6752100-100 CIRCUIT BREAKERS

Klixon 6752-100 series thermal–magnetic circuit breakers are designed and manufactured to meet stringent military standards with the reliability of the 6752 design. The 6752-100 is similar to the 6752-12 in size, and includes current ratings ranging from 50 to 100 amps.

The higher interrupting capacity, vibration resistance and longer cycling life of the 6752-100 series exceed previous military standards. In addition, the 6752-100 series provide ambient compensation, fault coordination of all ratings an option for auxiliary circuits.

The 6752-100 series circuit breakers maintain their performance capabilities by means of a thermal compensator in the temperature range of -40°C to 70°C.

A deionizing grid and magnetic assist enable the 6752-100 series to successfully interrupt four fault currents of 6,000 amperes — two at sea level and two at 60,000 feet — on either a 120 VAC, 400 Hz system or a 30 VDC system.

Features: Proven reliability and performance of the 6752 series circuit breaker, Trip–free design, Circuit protection unaffected by temperature fluctuations MIL-C-5809 qualified, Ambient compensated, High vibration resistance, High interrupting capacity: 6,000 amps, Typical use: Military, Specifications: Vibration: 10G, 50–2,000 Hz (other vibration levels available). Mechanical Shock: 30G. Acceleration: 10G. Weight: 113.6 gram (0.25 pound) maximum. Interrupt Current: 120VAC, 400 Hz: 3,500 amps; 28 VDC: 6,000 amps. Endurance: 5,000 cycles: 120 VAC, 400 Hz inductive;5,000 cycles: 120 VAC, 400 Hz resistive; 2,500 cycles: 28 VDC, 400 Hz inductive; 5,000 cycles: 28 VDC, 400 Hz resistive; 5,000 cycles: Mechanical, no load

Description	Current Rating	Part No.	Price
6752100-50	50 amps	11-08397	$168.85
6752100-60	60 amps	11-08398	$171.75
2752100-70	70 amps	11-08399	$168.75
6752100-75	75 amps	11-08400	$174.75
6752100-80	80 amps	11-08401	$174.75
6752100-90	90 amps	11-08402	$171.75
6752100-100	100 amps	11-08403	$167.75

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KLIXON 7270 & 7271 CIRCUIT BREAKERS

The Klixon 7270/7271 series circuit breakers were designed to utilize less behind panel space while protecting wire and cable in aircraft and ground support equipment on either 120 VAC, 400 Hz or 30 VDC systems. The units are available with neck mounting (7270-1 and 7271-8) or standard cover plate (7270-7 and 7271-3). In each of these Klixon circuit breakers, the bi-metallic element assures uniform current distribution throughout its responsive area. This design reduces current density at the critical areas, resulting in an element having a much higher interrupting capability than conventional design. Inherently resistant to shock and vibration, the Klixon disc element is capable of precise calibration settings and will retain the initial calibration within close tolerances throughout the service life of the breaker. Both circuit breakers have conventional actuator action; i.e., the toggle actuator on the 7270 moves to the OFF position for trip indication and the button the 7271 pops out. A standard black button with a white collar is used.

FEATURES: • Trip-free • Snap-acting Thermal Element • Simplicity of Design • Lightweight • High Rupture Capacity - 3500 Amps, 120 VAC, 400 Hz 4000 Amps, 30 VDC • Small Size

Part No.	Price
7270-1-3	$128.75
7270-1-5	$134.50
7270-1-7.5	$131.75
7270-1-10	$129.85
7270-1-15	$125.75
7270-1-20	$131.75
7270-1-25	$128.75
7270-1-30	$131.75
7270-1-35	$131.75
7270-7-3	$195.75
7270-7-5	$167.75
7270-7-7.5	$131.95

Part No.	Price
7270-7-10	$157.75
7270-7-15	$169.75
7270-7-20	$166.95
7270-7-25	$179.99
7270-7-30	$158.75
7270-7-35	$198.75
7271-3-3	$128.75
7271-3-5	$130.75
7271-3-7.5	$127.75
7271-3-10	$129.99
7271-3-15	$120.75
7271-3-20	$129.99

Part No.	Price
7271-3-25	$129.99
7271-3-35	$131.75
7271-8-3	$119.75
7271-8-5	$119.75
7271-8-71/2	$118.75
7271-8-10	$113.99
7271-8-15	$119.75
7271-8-20	$114.85
7271-8-25	$115.75
7271-8-30	$115.75
7271-8-35	$115.75

The last dash no. in the Part Number is the Amperage rating

KLIXON 7277 CIRCUIT BREAKERS

The 7277 series circuit breakers is physically and electrically identical to the 7274-2 style circuit breaker, with the exception that the 7277 series has wider calibration limits. Originally developed as an alternative to slow blow fuses, the trip free 7277 is used extensively as primary electrical circuit protection on general aviation aircraft. The wider calibration limits of the 7277 has also resulted in applications including protection for data processing and telecommunications equipment, computers, flight simulators, construction, material handling and other industrial electronic equipment.

FEATURES: The 7277 series is designed for applications that do not require the tighter performance characteristics and approvals of our military circuit breakers. • Small size • Light Weight • Inexpensive Auxiliary switch 7277-1 Only Longer Push Buttons 7277-5 Only

Temp.	Min Ult	Max Ult	Trip Time - Seconds		
°C	Traip	Trip	200%	500%	1000%
+25	110%	150%	2-35	.15-1.75	.028-.8

* Performance characteristics and dimensions are equivalent to 7274
Calibration: 1/2 - 20 amps*

Part No.	Price
7277-5-1	$29.50
7277-5-2	$29.50
7277-5-3	$29.50
7277-5-4	$28.90
7277-5-7.5	$29.50
7277-5-10	$29.50
7277-5-15	$29.50
7277-1-1	$29.80
7277-1-2	$37.65

Part No.	Price
7277-1-3	$29.85
7277-1-4	$30.50
7277-1-7.5	$30.50
7277-1-10	$29.95
7277-1-15	$30.50
7277-2-1/2	$86.75
7277-2-3/4	$17.90
7277-2-1	$17.90
7277-2-1.5	$17.90

Part No.	Price
7277-2-2	$17.90
7277-2-2.5	$21.65
7277-2-3	$17.90
7277-2-4	$17.90
7277-2-5	$17.90
7277-2-7.5	$17.90
7277-2-10	$17.90
7277-2-15	$17.90
7277-2-20	$17.90

ELECTRICAL PLUG CONNECTORS

Make your panel a "plug and play" panel with these heavy-duty electrical connectors. The connectors are designed for either panel mount or free hanging. Connectors are available in 4, 6, 9, 12, 18, 24, and 36 pin configurations. Choose the pins and sockets based on wire size. The pins and sockets are top quality and are gold/nickel plated. The plugs are sold in pairs and include both the plug and the connector.

Connectors	Part No.	Configuration	Price
SPT015/16	11-02147	4 pin	$8.95
SPT152/153	11-02148	6 pin	$10.45
SPT039/40	11-07356	9 pin	$11.75
SPT017/18	11-02149	12 pin	$11.85
SPT442/43	11-02150	18 pin	$12.95
SPT019/20	11-07357	36 pin	$15.90
Pins	Part No.	Wire Gauge Size	Price
SPT103-1	11-02153	24/20	$1.14
SPT099-1	11-02154	18/16	$1.20
Sockets	Part No.	Wire Gauge Size	Price
SPT105-1	11-02155	24/20	$1.45
SPT101-4	11-02156	18/16	$1.65

SEAL-ALL CRIMP TOOL - Crimp tool works with all Seal-All Terminals and seals. Its compact, low-cost parallel jaw design eliminates terminal rocking. P/N 11-06592 ..... $37.95

ALL-ELECTRONIC CIRCUIT BREAKERS

This circuit breaker has no mechanical parts, except for the reset switch. The power switching and control components are completely solid state. It has the added benefit of over- voltage and under-voltage protection. It will turn off if the input voltage foes too high, protecting valuable avionics or other equipment. NOT FAA APPROVED. For experimental aircraft only.

Model No.	Amps	Volt	Part No.	Price
ECB-28-01	1	28	11-01156	$76.50
ECB-28-02	2	28	11-01157	$76.50
ECB-28-05	5	28	11-08703	$76.50

STATIC DISCHARGERS

ESD-1 STATIC WICK - Length: (including mounting base) 7.65 inches. (discharger element) 4.75 inches. Weight: Less than 4.5 grams. Airspeed: To 150 knots. Altitude: To 20,000 feet msl. Temperature: +85°C to -55°C, MIL-STD0202C, Method 102A, Condition D. Solvents: No physical changes after one hour immersion in aviation gasoline, jet fuel or hydraulic fluids. Equivalent to Cessna P/N C592001-0201. Note: This is Non-Certified Version. Fully Qualified to MIL-D-9129D P/N 11-10574 ..... $15.90

EDS-3 STATIC WICK - Non-Certified. 7.65 inches. Weight: Less than 5.5 grams. Airspeed to 50,000 feet msl. +85°C to -55°C, MIL-STD-202C, Method 102A, Condition D. Tension: 50 pound pull longitudinal from plastic end to metal shank. No physical changes after one hour immersion in aviation gasoline, jet fuel or hydraulic fluids. P/N 11-10681 ..... $22.75

STATIC WICK

Comes with 2 holes to rivet to trainline edge and plain wire extension. Eligible For Installation: Beech Baron 58, Cessna 402, Eurocopter: BK117, BK117 C-2 P/N 11-04154 ..... $53.75

NULL FIELD TRAILING DISCHARGER

For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: (2) #8-32 flat head screws. Length: 10-9/32". Wt: .78 oz. P/N 11-16320 ..... $74.85

MICROPOINT TRAILING DISCHARGER

For general aviation aircraft (speeds below 300 mph). Mounting: (2) #4-40 screws, 100% countersunk. Length:8.75" Weight: 0.17 oz. P/N 11-16630 ..... $59.75

MICROPOINT TRAILING DISCHARGER (FLEXIBLE)

For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: 15401, 15488, 15660-1, or 16195 screw retainer. Length: 7-5/8" Wt: 0.53 oz. P/N 11-16606 ..... $59.75

NULL FIELD TIP DISCHARGER

For general aviation & business class aircraft. FAA/PMA, MIL-9129D. Mounting: (2) #8-32 flat head screws. Length: 7-15/32". Wt: 0.53 oz. P/N 11-16325 ..... $74.85

STATIC WICK WITH CARBON POINT

17770 Trailing Discharger: Mounting: Fits Chelton Retainer or DG p/n 540095. For Commercial & Business Class Aircraft. FAA PMA, MIL-9129D. Noise Quieting: 40+ db. Length: 7-7/8" Weight: 0.15 oz. P/N 11-11504 ..... $68.75

EL

TYCO CIRCUIT BREAKERS

These bi-metallic single pole breakers weigh less than 2oz. and especially suitable for homebuilt aircraft. Used as original equipment in Beech, Cessna and Piper aircraft. Max. operating voltages: 32 VDC & 250 VAC (to 400 Hz).

W23 SERIES

White band around body of reset button becomes visible if breaker trips. Has heater wire for fast tripping. 8-32 screw terminals.

W31 SERIES

These are combination single pole switches and circuit breakers. Has a plain steel toggle w/ rating inscribed on tip. 8-32 screw terminals.

W58 SERIES

Recessed reset button has red band around it for visible trip indication. 6-32 screw terminals.

P&B P/N	AMP Rating	Aircraft Application			Prices Ea.
		Beech	Cessna	Piper	
W23X1A1G1	1			111-201-105	$31.85
W23X1A1G2	2			111-202-105	$31.50
W23X1A1G3	3			111-203-105	$29.50
W23X1A1G4	4			111-204-105	$54.75
W23X1A1G5	5	CB-2305A	S-1232-5	454656	$21.75
W23X1A1G7.5	7.5	CB-2307A			$21.75
W23X1A1G10	10	CB-2310A		454657	$21.75
W23X1A1G15	15	CB-2315A		454658	$20.85
W23X1A1G20	20	CB-2320A		454659	$21.75
W23X1A1G25	25	CB-2325A		454660	$21.75
W23X1A1G30	30	CB-2330A		454661	$21.75
W23X1A1G35	35	CB-2335A		454663	$21.75
W23X1A1G40	40	CB-2340A		454665	$21.75
W23X1A1G50	50	CB-2350A		454662	$21.75
W31X2M1G5	5				$24.85
W31X2M1G10	10				$24.85
W31X2M1G15	15				$24.85
W31X2M1G20	20				$24.85
W31X2M1G25	25				$24.85
W31X2M1G30	30				$24.85
W31X2M1G35	35				$24.85
W31X2M1G40	40				$24.85
W31X2M1G50	50				$24.85
W58XC4C12A1	1	431-201-101	S-1360-1A,-1L		$6.75
W58XC4C12A2	2	431-202-101	S-1360-2A,-2L		$8.90
W58XC4C12A3	3	431-203-101	S-1360-3A,-3L		$6.75
W58XC4C12A4	4	431-204-101	S-1360-4A,-4L		$11.80
W58XC4C12A5	5	435-205-101	S-1360-5,-5L	454668	$5.50
W58XC4C12A7	7	435-207-101	S-1360-7,-7L		$6.75
W58XC4C12A10	10	435-210-101	S-1360-10,-10L	454669	$5.50
W58XC4C12A15	15	435-215-101	S-1360-15,-15L	454670	$6.90
W58XC4C12A20	20	435-220-101	S-1360-20,-202		$6.85
W58XC4C12A30	30	435-230-101	S-1360-30,-302		$6.85

TYCO ROCKER TYPE CIRCUIT BREAKER

W33S2N1Q series breakers are 2 pole rocker actuated. Pole 1 is switch only, pole 2 is series trip overload sensing. These breakers are non-lighted with white rocker. W33S4B1Q series breakers are also 2-pole rocker actuated. Pole 1 is switch only, pole 2 is series trip overload sensing. These breakers feature 20 amp max. switch & amber plastic rockers.

Item / Description	Amps	Part No.	Price
W33S4B1O-5 – Amber 24VDC	5	11-01887	$35.95
W33S4B1O-10 – Amber 120VAC	10	11-01888	$41.90
W33S4B1O-15 – Amber 120VAC	15	11-01889	$27.75
W33S4B1O-20 – Amber 120VAC	20	11-01976	$33.25
W33S1N1O-5 – Black	5	11-01977	$28.90
W33S1N1O-10 – Black	10	11-01978	$34.40
W33S1N1O-15 – Black	15	11-01979	$28.90
W33S1N1O-20 – Black	20	11-01980	$32.95
W33S2N1O-5 – White	5	11-01981	$37.85
W33S2N1O-10 – White	10	11-01890	$29.90
W33S2N1O-20 – White	20	11-01983	$29.90

FUSE HOLDERS

These fuseholders are non-indicating, plate mounted. The body is molded black phenolic. Knob grips fuse and pulls it from holder when knob is removed. Spring provides contact pressure on ends of fuse. For use with fuse size 1/4" x 1-1/4". Type HKP. P/N 11-13400 ..... $1.87

Nylon Twist-Lock in-line fuseholder. Supplied with 8" loop of 14-gauge wire and 1 spring to accommodate AGC fuses. Simple "twist-lock" allows easy fuse removal & replacement. P/N 11-04010 ..... $3.35

Bayonet knob in-line fuseholder. Supplied with 8" loop of 14-gauge wire and 1 spring to accommodate AGC fuses. Simple "twist-lock" allows easy fuse removal and replacement. P/N 11-01359 ..... $3.35

KLIXON 7274-11.75 CIRCUIT BREAKER

Klixon 7274 series are small, lightweight, low amperage devices that are specifically designed to protect aircraft/aerospace cable and components in airborne vehicles and equipment. The commercial grade version of this circuit breaker is the Klixon 7277 series. The 7274 features a trip–free, indicating reset button and is available in standard ratings from ½ to 20 amps. They are available in standard ratings from ½ to 20 amps.

Description	Amps	Part No.	Price	Description	Amps	Part No.	Price
7274-11-1	1	11-08364	$17.90	7274-11-5	5	11-08369	$17.90
7274-11-2	2	11-08365	$17.90	7274-11-7.5	7.5	11-08370	$17.90
7274-11-2.5	2.5	11-08366	$17.90	7274-11-10	10	11-08371	$17.90
7274-11-3	3	11-08367	$17.90	7274-11-15	15	11-08372	$17.90
7274-11-4	4	11-08368	$17.70	7274-11-20	20	11-08373	$17.90

KLIXON CIRCUIT BREAKERS

Feature a bi-metallic snap-acting disc as the sensing element. Widely used in production and military aircraft. The most popular models are illustrated. Models PSM and PSM-N are available in the following ampere ratings: 2, 3, 5, 10, 15, 20, 25, 35. When ordering specify if neck-mounting style is wanted by placing "N" after ampere rating. Example: PSM-10N (P/N 11-04244) ..... $93.75 Ea. For weatherproof circuit breakers in ratings from 50 to 150 amperes, order Model PDLM. Example: PDLM-50 (P/N 11-04241) ..... $128.75 ea.

60 AMP CIRCUIT BREAKERS FOR ALTERNATORS

These heavy duty circuit breakers are ideal for use with aircraft alternators and other applications using high amperage. 10-32 screw terminals. Size: 1-3/8"d x 1-3/8"h x 1/2"w. 60 Amp P/N 11-02191 ..... $16.65

70 AMP CIRCUIT BREAKERS FOR ALTERNATORS

These heavy duty 70 AMP circuit breakers are ideal for use with aircraft alternators and other applications using high amperage. 10-32 screw terminals. 1 3/8" D x 1 3/8" H x 1/2" W. P/N 11-05652 ..... $19.50

ELECTRONIC CIRCUIT BREAKERS

These circuit breakers have no mechanical parts, except for the reset switch. The power switching and control components are completely solid state. They have added benefit of overvoltage and undervoltage protection. Will turn off if the input voltage goes too high, protecting valuable avionics or other equipment. The circuit breakers operate differently than conventional ones in the following ways: If the circuit breaker 'trips', the switch will remain in the up or on position, but a red LED will illuminate indicating the condition. To reset the circuit breaker, the switch is set to off, then back to on. Removing power from the circuit breaker via a master switch and then restoring power will perform the same function. If a short or overcurrent condition exists at the output, the circuit breaker will continue to trip off after a reset. The electronic circuit breaker is a 3-terminal device. In addition to the usual 2 terminals, a ground reference is required for the electronics to operate and as a reference for the overvoltage & undervoltage protection. The 14V circuit breakers will shutdown with an overvoltage of 16V & undervoltage of 10V. The 28V will shutdown with an overvoltage of 33V & undervoltage of 20V. Available in 14V & 28V versions, with the following current levels: 1A, 2A, 5A, 10A. Not FAA Approved. For experimental aircraft only.

Model No.	Amps	Volts	Part No.	Price
ECB-28-01	1	28	11-01156	$76.50
ECB-28-02	2	28	11-01157	$76.50
ECB-28-10	10	28	11-01159	$76.50
ECB-28-05	5	28	11-08703	$76.50

FUSES

AGC-type fuses are glass-enclosed with a single fuse element. Fast acting to protect sensitive instruments and radios. Fuse dimensions 1/4" dia. x 1-1/4" long.

Part No.	Amp Rating	Price Each	Part No.	Ampere Rating	Price Each
11-03743	1	$0.29	11-03745	15	$0.22
11-03746	2	$0.24	11-03747	20	$0.48
11-03749	3	$0.48	11-03748	25	$0.48
11-03753	5	$0.38	11-03750	30	$0.48
11-03754	7	$0.48	11-03751	35	$0.48
11-03744	10	$0.38			

EL

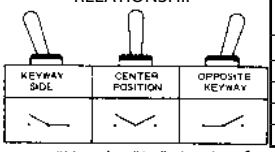
ULTRA-MINIATURE TOGGLE SWITCHES

Ultra-miniature switches are rated at 6 amps at 125V AC and 4 amps at 28V DC. Solid silver contacts. Terminals are gold flashed to inhibit oxidation and to provide easier soldering. Case material is green diallyl phthalate resin. Bushing thread size: 1/4-40, usable in panel thickness up to 1/4". Micro Switch Co. have discontinued the manufacture of the 8A and 8H type switches, so switches by alternate manufacturers will be furnished. In most instances, Alco switches will be supplied. Switches furnished complete with locking ring and attaching hardware.

Alco Sw. Part No.	Micro Sw. Part No.	Contact	Toggle Circuit*	Price Each
MTA-106D	8A1011	SPST	01	$10.90
MTA-106E	8A1021	SPDT	02	$12.55
MTA-106G	8A1041	SPDT	04	$15.85
MTA-206N	8A2011	DPST	01	$13.50
MTA-206P	8A2021	DPDT	02	$11.75
MTA-206S	8A2041	DPDT	04	$22.25
JMT-226	8A2061	DPST	06	$22.50
MTA-306D	8A3011	3PDT	01	$26.70
MTA-406N	8A4011	4PDT	01	$26.50

* See Toggle Circuit Table

LEVER/CIRCUIT RELATIONSHIP



TOGGLE CIRCUIT TABLE

Toggle Circuit	Circuitry*		
	One Side	Center	Other Side
01	On	None	On
02	On	Off	On
04	(On)	Off	(On)
05	On	Off	(On)
06	On	None	(On)

*Use the "01" circuitry for On-Off switch. In hook-up, use center terminal & one side terminal. Leave other side terminal blank.

The operating sequence above is repeated in multipole devices. Each pole has double-throw circuitry and consists of three terminals which exit at the bottom of the switch case. The keyway is a helpful reference when you are applying a switch with the momentary (ON) circuit at one of the extreme lever positions.

TWIN CESSNA SWITCH COVERS

Are your switch covers faded by the sun or just looking grimy? These replacement switch covers fit on nearly every typical switch in Cessna Twins. Switch cover sets are available for 300 series twins (4 red, 3 black, and 18 white switches) and 400 series twins (4 red, 3 black, & 23 white switches). Also available are sets of 30 mini-switch covers for audio panels, prop sync, fuel transfer pumps, DME, etc.

300 Series.....P/N 11-22210.....$29.95
400 Series.....P/N 11-22220.....$29.95
Mini Switch Package.....P/N 11-22230.....$14.85

TOGGLE SWITCH COVERS

Dress up the appearance of your panel and color code your toggle switches with high quality vinyl covers that do not have a nipple at the end of the cover. Available in various colors.

Standard Size

Red.....11-00815.....$1.35
White.....11-00816.....$1.35
Yellow.....11-01698.....$1.35
Green.....11-00817.....$1.35
Blue.....11-00819.....$1.35
Black.....11-02823.....$1.35

Mini Size

Red.....11-00820.....$1.35
White.....11-00821.....$1.35

SUBMINIATURE PUSHBUTTON SWITCH

This sub-miniature push button switch, with one-piece bushing and case construction, and hex nut. It has a relatively high current carrying capacity (3 amps at 125V AC) and a life expectancy of 10,000 operations at rated current. Momentary type SPDT switch, ideal for use as a mike switch on control wheel. Furnished with . 205" dia. black push button. Body is .354" dia. x .650" long. Mounts in 1/4" dia. hole. P/N 11-03909.....$15.95

CIRCUIT BREAKER SAFETY LOCKS

Skylox™ is a unique product that will provide safety to your aircraft ground service crews. The circuit breaker safety lock is easy to use and is an innovative safety solution, all at a very low price. Simple to use. Just squeeze and place over an open circuit breaker to prevent accidental closing of breaker circuits being serviced.

Regular round Skylox™ for standard size breakers and Skylox™ L for larger sizes. Hexagonal shape easily differentiates between the two sizes. Add Skytags™ for added safety. Red with white letters and all white backs for adding notes or special instructions. NOTICE! Skylox™ are designed for use by ground maintenance crews during ground maintenance procedures only! Skylox™ are NOT to be used during flight operations.

Danger.....P/N 11-07737.....$2.95
Large.....P/N 11-07734.....$4.65
Warning.....P/N 11-07738.....$2.95
Standard....P/N 11-07736.....$4.35

MS25224 SWITCHGUARDS

Prevents inadvertent operation of the switch. Switch can be operated only when the spring-loaded guard is lifted up. Returning guard to the down position forces the switch lever to the off position. Single-hole type for neck-mount switches such as AN3021 and AN3027. 3-hole type for panel-mounted switches such as AN3023. Color: Red.

MS25224-1 (one hole).....$11.50 Ea.
MS25224-2 (3 holes).....$19.85 Ea.

KLIXON SWITCH GUARDS

Spring Loaded Switch Guards. Klixon switch guards can be used with 2 or 3 position switches. Covers are molded out of Thermoset molding materials. Guard covers are spring loaded to close.

Description	Pos.	Color	Code	Part No.	Price
Phenolic	2	Red	2	11-04228	$19.85
Metal	2	Green	4	11-06222	$36.60
Phenolic	3	Red	9	11-06223	$14.80
Phenolic	2	Red	10	11-03917	$11.50
Phenolic	2	Red	11	11-06225	$21.65

CESSNA SPLIT MASTER SWITCH

This versatile split red master switch has been used in virtually all single engine Cessna models since 1970 and can be used in most light aircraft with single alternator systems. Left rocker normally used for alternator and right half for battery. Order mount separately.

Red Switch.....P/N 11-15900.....$36.50
Beige Switch.....P/N 11-05733.....$38.50
Mount.....P/N 11-15910.....$1.80

TOGGLE SWITCHES

Toggle switches are available with 2 or 3 operating positions, one or three hole mounting and a variety of circuitry and electrical ratings. Contacts are made of solid silver. Wide usage is found in aircraft, mobile, marine, electronic and industrial applications. Available in full "AN" standard size and Ultra Miniature 1/2" size. The leading manufacturers of toggle switches are Micro Switch, Alcoswitch, Cutler Hammer, and JBT (now Cutler Hammer). Orders will be filled with switches of manufacturer whose product is available in local stock.

AN No.	MS No.	Mfgrs. P/N	Size	Contact	Toggle Circuit *	Price
AN3021-1	MS35058-21	JBT - MS No.	1/2 Miniature	SPDT	1*	$16.50
AN3021-2	MS35058-22	JBT - MS No.	1/2 Miniature	SPST	2*	$11.50
AN3021-3	MS35058-23	JBT - MS No.	1/2 Miniature	SPDT	3*	$15.50
AN3027-1	MS35059-21	JBT - MS No.	Full Standard	DPDT	1*	$33.50
AN3027-2	MS35059-22	JBT - MS No.	Full Standard	DPST	2*	$16.50
AN3027-3	MS35059-23	JBT - MS No.	Full Standard	DPDT	3*	$30.70
AN3027-7	MS35059-27	JSBT-MS No.	Full Standard	DPDT	5*	$24.95
AN3027-4	MS35059-24	JBT - MS No.	Full Standard	DPST	7	$25.75

* See Toggle Circuit Table

TOGGLE CIRCUIT CODE (*)	Circuitry with Toggle at:		
	UP	CENTER	DOWN
1	On	Off	On
2	On	None	Off
3	On	None	On
4	On	Off	On**
5	On*	Off	On**
6	Off	None	On*
7	On	Off	None

TOGGLE CIRCUIT TABLE

*Available toggle lever positions & circuits

**Momentary contact - when the toggle lever is placed in a momentary position and then released, the toggle lever automatically returns to a neutral position.

PUSH BUTTON SWITCH

A quality momentary SPST switch, perfect as a starter button, Comes with a special boot that keeps out dust and weather.

P/N SPB01.....$5.40

MINIATURE MOMENTARY PUSHBUTTON SWITCH

Normally open. Found in many Piper aircraft. Color: Black.

#8631ZBD2.....P/N 11-01899.....$6.65

EL

OTTO SWITCHES & PISTOL GRIPS

T7 COMMERCIAL TOGGLE SWITCHES

T7 commercial toggle switch, waterproof bushing seal switches up to 16 amps 15/32-32 thread mount. Includes mounting hardware.

SPECIFICATIONS

Electrical: (at 28VDC or 115VAC, 60/400 Hz.)		
Load	Amperes	Life (Nominal)
Resistive	16	25,000
Inductive	10	25,000
Motor	1/2 HP	25,000

No. of Poles	OTTO No.	Circuit	Our P/N	Price ea.
1	T7-131A1	on-off	11-00755	$13.85
1	T7-131B1	on-on	11-00756	$13.85
1	T7-131C1	mom-off	11-00757	$13.85
1	T7-131D1	mom-on	11-00758	$13.85
1	T7-131E1	mom-of-mom	11-00759	$13.85
1	T7-131F1	on-off-on	11-00760	$13.85
1	T7-131G1	mom-off-on	11-00761	$13.85
2	T7-231A1	on-off	11-00762	$16.50
2	T7-231B1	on-on	11-00763	$17.50
2	T7-231C1	mom-off	11-00764	$19.50
2	T7-231D1	mom-on	11-00765	$16.50
2	T7-231E1	mom-off-mom	11-00766	$15.95
2	T7-231F1	on-off-on	11-00767	$15.90
2	T7-231G1	mom-off-on	11-00768	$17.50

Note: MOM designates Momentary On.

T3 MINIATURE TOGGLE SWITCHES

Military MS27718 qualified. High reliability, rugged. Solder turret for wire attachment. 303 stainless toggle, 15/32" bushing version has a waterproof seal. Specifications Electrical: (at 28VDC or 115VAC, 60/400 Hz.)

Load	Amps	Life (full load)
Resistive	5	30,000
Inductive/Motor	2	30,000

Load	Amps	Life (full load)
Lamp	1	30,000
Mechanical Life	n/a	100,000

No. of Poles	MIL No.	OTTO No.	Circuit	Our P/N	Price ea.
1	MS27718-21-1	T3-11111	on-off-on	11-00772	$29.50
1	MS27718-22-1	T3-11121	off-on	11-00773	$31.85
1	MS27718-23-1	T3-11131	on-on	11-00774	$29.50
1	MS27718-26-1	T3-11141	mom-on	11-00775	$25.50
1	MS27718-27-1	T3-11151	mom-off-mom	11-00776	$31.50
1	MS27718-31-1	T3-11161	mom-off-on	11-00777	$34.50
2	MS27719-21-1	T3-11211	on-off-on	11-00778	$25.50
2	MS27719-22-1	T3-11221	off-on	11-00779	$29.60
2	MS27719-23-1	T3-11231	on-on	11-00780	$31.50
2	MS27719-27-1	T3-11251	mom-off-mom	11-00782	$32.50
2	MS27719-31-1	T3-11261	mom-off-on	11-00783	$35.50

Note: MOM designates Momentary On.

P5 ON-OFF ALTERNATE ACTION SWITCH

Push and the P5 series switch holds "on" push again and the P5 switch turns "off". Positive tactile feedback is featured so the operator is clearly aware the switch mode has been executed. The button returns to the original position after each actuation.

To guard against front panel splash and dirt, the P5 series is sealed at the button with OTTO's patented rolling sleeve principle.The terminals are sealed with epoxy, providing a seal against flux during wiring and behind panel dirt and moisture. The combination of sealing provides smooth operation over a wide temperature range. Watertight sealing to 1meter (IP68) pressure is also available.

Load	Amps	Life (full load)
Resistive	10	25,000
Inductive	5	25,000

Load	Amps	Life (full load)
Motor	3	25,000
Lamp	1	25,000

Switch	Part No.	Price
Press Fit-red	11-00796	$19.90
Press Fit-black	11-00797	$14.85
Press Fit-white	11-00798	$17.80

Switch	Part No.	Price
Thread Mount Red	11-00769	$17.75
Thread Mount Black	11-00770	$17.75
Thread Mount White	11-00771	$17.55

OTTO PISTOL GRIPS

Otto Controls has been making the switches used in a majority of military and commercial flight grips manufactured for the last 40 years. Otto has evolved from a switch supplier into a major gri supplier with flight grips in numerous military and commercial aircraft. These rugged grips are the same as our military qualified grips but without the expensive threaded connector. Grips have a 1.15"ID which can be adapted to a 3/4" or 7/8" joystick with separate sleeves sold below.

Grip Kit	Otto Part No.	2-position Trigger	4-Way Trim Switch	Push-Button Switch	Our Part No.	Price Each
B8	G2-0048	1	1	3	11-00751	$657.00
Cobra	G2-0049	1	1	4	11-00752	$706.00
T4-0204 4-WAY SWITCH FOR B8 - Four way trim with a large hat style button. Fits into the trim position of the G2-0048 and G2-0049 flight grip kits. Can handle up to a 1 amp inductive load at 28VDC.					11-07956	$208.95

Grip/Joystick Sleeve			
Joystick O.D.	Part No.	Our Part No.	Price
3/4" shaft	302379	11-00753	$36.75
7/8" shaft	302380	11-00754	$57.65

P1 MOMENTARY SWITCHES

MIL qualified. Dustproof, snap action, solder terminals, rugged reliable construction.

SPECIFICATIONS

Electrical: (at 28VDC or 115VAC, 60/400 Hz.)		
Load	Amperes	Life (Nominal)
Resistive	10	25,000 cycles
Inductive/Motor	5	25,000 cycles
Lamp	3	25,000 cycles

PRESS FIT				
MIL No.	Otto No.	Button Color	Our Part No.	Price
MS25089-1AL	P1-12121	Red	11-00745	$15.50
MS25089-1A	P1-12122	Black	11-00746	$15.50
MS25089-1AW	P1-12129	White	11-00747	$16.50

THREADED BEZEL				
MIL No.	Otto No.	Button Color	Our Part No.	Price
MS25089-1CR	P1-32121	Red	11-00748	$15.50
MS25089-1C	P1-32122	Black	11-00749	$15.50
MS25089-1CW	P1-32129	White	11-00750	$16.99

T3 1/4-40 UNSEALED BUSHING TOGGLE SWITCHES

No. of Poles	MIL No.	OTTO No.	Circuit	Our Part Number	Price each
1	MS27716-21-1	T3-21111	on-off-on	11-00784	$22.50
1	MS27716-22-1	T3-21121	off-on	11-00785	$19.80
1	MS27716-23-1	T3-21131	on-on	11-00786	$20.50
1	MS27716-26-1	T3-21141	mom-on	11-00787	$23.95
1	MS27716-27-1	T3-21151	mom-off-mom	11-00788	$23.75
1	MS27716-31-1	T3-21161	mom-off-on	11-00789	$21.50
2	MS27717-21-1	T3-21211	on-off-on	11-00790	$21.50
2	MS27717-22-1	T3-21221	off-on	11-00791	$19.95
2	MS27717-23-1	T3-21231	on-on	11-00792	$21.55
2	MS27717-26-1	T3-21241	mom-on	11-00793	$17.70
2	MS27717-27-1	T3-21251	mom-off-mom	11-00794	$23.50
2	MS27717-31-1	T3-21261	mom-off-on	11-00795	$22.50

Note: MOM designates Momentary On.

EL

• SILVER SWITCH CONTACTS (MOST)

SWITCHES & INDICATOR LIGHTS

• .25" TAB TERMINAL (UNLESS SHOWN)

Commercial 12 VDC Illuminated & Non-Illuminated Toggle, Rocker, Push-Button, Pull Switches...
Incandecent & L.E.D. Indicator Lights...Switch Guards...Lever Covers

LEVER SWITCHES
20 AMP SILVER CONTACTS

Non-Illuminated	Single Pole	Price
On-Off	11-103	$4.45
On-On	11-107	$4.80
On-Off-On	11-123	$4.70
( )=MOMENTARY		

Illuminated	Red	Green	Amber	Blue	Clear
11/16" Lever	11-115	11-116	11-117	- - -	- - -
$6.90 Ea.					

DASH LIGHTS

Replaceable Lamp					
Red	Green	Amber	Blue	MTG. HOLE	Price
17-410	17-411	17-412	17-413	1/2"	$4.95
Replacement bulb.....P/N BA7-12.....$0.97					
Jumbo					
17-420	17-421	17-432	17-423	3/4"nut	$6.75
17-440	17-441	17-442	17-443	1"nut	$15.95
Non-Replaceable Lamp - *4" Wire Leads					
*17-165	*17-466	*17-467	--	1/2"	*$4.95
17-210	17-211	17-212	--	9/32"	$7.85

LEGEND LIGHTS

Illuminated words.
Dimensions: 7/8" x 11/16" x 1-3/8"
Mounting Hole: .629" Diameter (16 mm)

Color	Part No.	Price	Color	Part No.	Price
Red	11-06000	$16.55	Orange	11-06050	$16.55
Green	11-06060	$15.99	Yellow	11-06055	$18.50
Blue	11-06065	$19.50	Clear	11-06070	$14.95

REPLACEMENT BULBS

12 Volt ..... P/N 31-963.1 ..... $2.24
24 Volt ..... P/N 31-963.2 ..... $5.35
NOTE: Order labeling (words) separately from list below.

LEGEND LIGHT LABELS

Description	Part No.	Price	Description	Part No.	Price
Alarm	17-538	$0.55	Hi Oil Pressure	17-625	$0.55
Auto-Pilot	17-710	$0.55	Hi Oil Temp	17-518	$0.45
AUX Lights	17-501	$0.55	Interior Lights	17-679	$0.45
AUX Rank	17-606	$0.55	Lock	17-711	$0.40
Battery	17-536	$0.55	Loran	17-716	$0.35
Carb Heat	17-712	$0.45	Low Fuel	17-512	$0.55
Caution	17-714	$0.55	Mags	17-715	$0.35
Danger	17-540	$0.55	Aux Brake Light	17-507	$0.40
De-ice	17-713	$0.35	Oil Filter	17-609	$0.50
Flaps Up	17-730	$0.55	Pitot Heat	17-709	$0.55
Flashing Lights	17-560	$0.45	Radio	17-717	$0.45
Fuel Pumps	17-587	$0.55	Strobe Lights	17-631	$0.45
Gear Down	17-718	$0.45	Wing Lights	17-614	$0.45

MS25041 PRESS-TO-TEST INDICATOR

Miniature press-to-test indicator with built-in bulb testing device. Adjustable dimmer. Uses #330 (12V) or #327 (24V) bulb. Bulbs NOT included, order separately.

Clear ..... 11-04226 ..... $28.95
Green ..... 11-03911 ..... $28.75
Blue..... 11-04227 ..... $28.75
Red..... 11-03910..... $29.50
Amber..... 11-03912..... $28.99

ROCKER SWITCHES
SILVER CONTACTS

Non-Illuminated	Single Pole	Price	Double Pole	Price
On-Off	14-100	$1.75	14-200	$4.60
Off-(On)	14-101	$4.75		
On-On	14-102	$3.65	14-210	$5.85
On-Off-On	14-103	$2.95	14-220	$8.50
(On)-Off-(On)	14-104	$4.70	14-225	$7.95

Illuminated Single Pole (20 AMP, OnOff-OFF)				
Red	Green	Amber	Blue	Price
14-305	14-306	14-307	14-308	$5.75

DUAL IGNITION TETHERED KILL SWITCH

Kills both ignition systems at once. Extra strong, coiled, self-retracting lanyard. Black matte finish for attractive appearance. Mounts in a 1-1/2" diameter hole. Overall dimensions of switch housing are 2-3/4 " x 2" and requires 1-1/2" behind panel. Dual ignition switch provides two completely isolated circuits to prevent feedback from one ignition to the other.
P/N 08-07633 ..... $38.00

PUSH BUTTON

Off-(On), 5 AMP
Mounting Hole: 1/2"
Aluminum Guard..... P/N 15-112 ..... $8.55

Push On-Push Off, 16 AMP
Mounting Hole: 1"
Red Button ..... P/N 15-132 ..... $7.50
Black Button..... P/N 15-133 ..... $7.50

Off-(On), 40 AMP, Sealed
Mounting Hole: 5/8"
Screw Terminal..... P/N 15-100 ..... $6.75

PULL SWITCHES

Pull On/Push Off, 75 AMP
Chromed.....P/N 16-140 .....$9.75 ea.

METAL LEVER TOGGLE SWITCHES

- .25" Tab Terminal
- 20 AMP at 12/24VDC
- 15 AMP at 125VAC
- 1/2" panel hole size.

Operation	Single Pole	Price	Double Pole	Price
Off-On	*12-100	$4.35	12-200	$6.50
Off-(On)	*12-101	$5.80	12-201	$6.85
On-On	*12-102	$6.75	12-202	$6.60
On-Off-On	12-103	$5.40	12-203	- - -
(On)-Off-(On)	12-104	$7.45	12-204	$12.75
( )=Momentary				

SWITCH LEVER COVERS

Fits most metal switches with 15/32" bushing

Black Neoprene - Hex Nut
P/N 19-516 .....$1.65

BUSS BARS

These MS25226 series buss bars are used as replacement bars for MS27212 board assemblies.

Part No.	Hole Size	# of Holes	Length	Our Part No.	Price
MS25226-10-4	3/16	4	2 5/8"	11-04676	$13.75
MS25226-10-8	3/16	8	5 5/8"	03-00133	$23.50
MS25226-10-16	3/16	16	11 5/8"	03-00131	$17.50
MS25226-4-8	1/4	8	5 3/4"	03-00134	$6.65
MS25226-8-4	1/2	4	5 1/8"	03-00135	$17.25

EL

UNSHIELDED WIRE MIL-W-22759/16

MIL-W-22759/16. Standard tin-plated copper conductor and is insulated with extruded Tefzel (ethylene/tetrafluorbethylene) which has a maximum temperature rating of 150°C. This wire is rated for 600 volts.

COLOR: WHITE					
Wire Gauge	Wt./1000 Ft. Lbs.	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	2.4	11-14524	$0.22	$18.70	$165.00
22	4.2	11-14522	$0.22	$18.70	$165.00
20	6.0	11-14520	$0.37	$31.45	$277.50
18*	8.6	11-14518	$0.39	$33.15	$292.50
16*	10.7	11-14516	$0.43	$36.55	$322.50
14	16.7	11-14514	$0.69	$58.65	$517.50
12	25.0	11-14512	$0.79	$67.15	$592.50
10	40.1	11-14510	$1.46	$124.10	$1,095.00
8	66.6	11-14508	$2.24	$190.40	$1,680.00
6	104.6	11-14506	$3.35	$284.75	$2,512.50
4	160.1	11-14504	$4.35	$369.75	$3,262.50
2	244.1	11-14502	$6.50	$552.50	$4,875.00
0	381.3	11-14501	$11.95	$1,015.75	$8,962.50
00	485.8	11-14500	$12.50	$1,062.50	$9,375.00

COLOR: BLACK					COLOR: BLUE				
Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)	Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	11-06254	$0.26	$22.10	$195.00	24	11-07790	$0.23	$19.55	$172.50
22	11-06257	$0.29	$24.65	$217.50	22	11-07791	$0.25	$21.25	$187.50
20	11-06260	$0.37	$31.45	$277.50	20	11-07792	$0.34	$28.90	$255.00
18	11-01596	$0.39	$33.15	$292.50	18	11-01599	$0.39	$33.15	$292.50
16	11-01601	$0.43	$36.55	$322.50	16	11-01604	$0.43	$36.55	$322.50
14	11-07788	$0.75	$63.75	$562.50	14	11-07793	$0.68	$57.80	$510.00
12	11-07789	$1.12	$95.20	$840.00	12	11-07794	$0.87	$73.95	$652.50

COLOR: GREEN					COLOR: RED				
Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)	Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	11-07795	$0.24	$20.40	$180.00	24	11-06253	$0.25	$21.25	$187.50
22	11-07796	$0.27	$22.95	$202.50	22	11-06256	$0.20	$17.00	$150.00
20	11-07797	$0.32	$27.20	$240.00	20	11-06259	$0.37	$31.45	$277.50
18	11-07798	$0.38	$32.30	$285.00	18	11-01597	$0.49	$41.65	$367.50
16	11-07799	$0.43	$36.55	$322.50	16	11-01602	$0.43	$36.55	$322.50
14	11-07801	$0.63	$53.55	$472.50	14	11-07806	$0.72	$61.20	$540.00
12	11-07802	$0.87	$73.95	$652.50	12	11-07807	$1.13	$96.05	$847.50

COLOR: YELLOW					*STRIPED WIRE				
Wire Gauge	Part No.	Price per ft.	Price (100ft)	Price (1000ft)	Wire	Part No.	Price per ft.	Price (100ft)	Price (1000ft)
24	11-06252	$0.24	$20.40	$180.00	18 - white w/ blk stripe	11-15601	$0.50	$42.50	$375.00
22	11-06255	$0.31	$26.35	$232.50	18 - white w/ red stripe	11-15607	$0.48	$40.80	$360.00
20	11-06258	$0.34	$28.90	$255.00	16 - white w/ blk stripe	11-15501	$0.51	$43.35	$382.50
18	11-06261	$0.37	$31.45	$277.50	16 - white w/ red stripe	11-15507	$0.54	$45.90	$405.00
16	11-01603	$0.43	$36.55	$322.50	16 - white w/ grn stripe	11-19522	$0.39	$33.15	$292.50
14	11-07804	$0.72	$61.20	$540.00	22- White w/blk stripe	11-11982	$0.20	$17.00	$150.00
12	11-07805	$1.12	$95.20	$840.00	22 - white w/ red stripe	11-11983	$0.20	$17.00	$150.00
					22 - white w/ grn stripe	11-11981	$0.20	$17.00	$150.00
					22 - white w/ yel stripe	11-11984	$0.20	$17.00	$150.00
					22- white w/ blue stripe	11-11985	$0.20	$17.00	$150.00

SHIELDED WIRE MIL-C-27500

MIL-C-27500 and replaces MIL-C-7078/3. It incorporates MIL-W-22759/18 basic wire and features a Tefzel insulation, a shield of tin-plated copper braid and a jacket of Tefzel. It is temperature rated to 150°C & voltage rated at 600V. Top quality wire to military specifications.

Wire Gauge	Wt./1000 Ft. Lbs.	Part No.	Price Per Foot	Price 100 Ft.
22	10.8	11-14422	$0.89	$75.65
20	13.1	11-14420	$0.77	$65.45
18	16.5	11-14418	$1.38	$117.30
16	19.3	11-14416	$0.96	$81.60
14	26.2	11-14414	$1.47	$124.95
12	36.0	11-14412	$1.98	$168.30
8*	88.6	11-14408	$5.75	$488.75

15% Discount on 100ft. (Per Part No.)
* 8 Gauge shielded wire is used in converting generator systems to alternators. Conforms to MIL-C-27500.

Description	Part No.	Price Per Foot
2-Conductor Shielded Wire - 22 Gauge	11-05650	$0.99
3-Conductor Shielded Wire - 22 Gauge	11-05651	$1.17
4-Conductor Shielded Wire - 22 Gauge	11-07773	$1.63
5-Conductor Shielded Wire - 22 Gauge	11-06580	$2.42
6-Conductor Shielded Wire - 22 Gauge	11-07774	$2.66
8-Conductor Shielded Wire - 22 Gauge	11-09782	$2.90
9 Conductor Shilded Wire - 22 Gauge	11-12535	$3.50

Note: For 406 Mhz ELT installations: • Use 11-05651 3 conductor for the Kannad AF Compact • Use 11-07773 4 conductor for the Artex ME406 & 11-07774 for Artex ME406 with GPS interface.

COAXIAL CABLE

RG 400 - Standard cable for radio installations. Double shielded stranded conductor, MIL-DTL-17 spec. Approved for certified aircraft.
P/N 11-09202.....$3.75

RG 142 - Double shielded solid conductor, MIL-C-17 spec. Approved for certified aircraft. PN 11-00043.....$3.95

RG 58A/U - Standard cable for experimental avionics installations. Single shielded stranded conductor, jacket type – PVC. For experimental aircraft only.
PN 11-03920.....$0.55

RG 58C/U - Standard cable for experimental avionics installations. Single shielded stranded conductor, jacket type – Non-PVC. For experimental aircraft only.
PN 11-04258.....$0.58

THIN WALL HEAT-SHRINKABLE TUBING

This is a general purpose heat shrinkable tubing with a wide scope of applications including harnessing, wire bundling, strain reliefs or any application where components or cables must be insulated or packaged. Material is an irradiated, thermally stabilized, modified polyolefin which is vastly superior to thermoplastic type materials. Flexible & flame retardant. Shrinkable by any hot air source such as an electric hair dryer or any heating device delivering at least 250°F. One person can complete installation in seconds. No need for special skills. Meets spec. MIL-I-23053B. Standard length - 4 ft. Min. purchase 4 ft. per size. Sold only in full 4 ft. lengths.

Expanded Size	Expanded I.D.	Recovered I.D.	Nominal Wall	Part No.	Price / 4 ft. Piece
1/16"	.063	.031	.017	11-00700	$1.83
3/32"	.093	.046	.020	11-00800	$1.46
1/8"	.125	.062	.020	11-00900	$1.89
3/16"	.187	.093	.020	11-01000	$2.25
1/4"	.250	.125	.025	11-01100	$2.20
3/8"	.375	.187	.025	11-01200	$2.65
1/2"	.500	.250	.025	11-01300	$2.85
3/4"	.750	.375	.030	11-01400	$2.85
1"	1.000	.500	.035	11-01500	$4.25
White					
1/16	.063	.031	.017	11-09443	$1.65
1/8"	.125	.062	.020	11-04029	$2.98
1/4"	.250	.125	025	11-04028	$2.35
3/8"	.375	.187	.028	11-04030	$2.45
1/2"	.500	.250	.025	11-04027	$3.55

Discount: 25% Discount on 12 or more 4' Lengths (Per Size)
Always order the largest size which will fit snugly over the component being covered. Wall thickness will be less if recovery is restricted during shrinking.

ADHESIVE LINED HEAT-SHRINKABLE TUBING

Adhesive Lined Shrink Tubing is made of flame retardant, cross-linked, black, polyolefin with an inner coating of hot-melt adhesive and an outer layer. It has excellent physical, chemical, and electrical properties and provides electrical and mechanical protection.

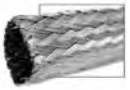
Features: • Shrink Ratio: 3:1 • Operating Temperature: -45° C to +125° C • Shrink temperature: 120° C • Inner layer glue melting temperature: 70° C -90° C • Waterproof • Meets: Mil-23053/4 Class 3, UL224 • UL Recognized • RoHS Complian3:1 ADHESIVE LINED.

Tube Size (In.)	Expanded I.D.	Recovered I.D.	Part No.	Price Per 4ft. Piece
1/8	.118"	.039"	11-11536	$1.95
3/16	0187"	.059"	11-11537	$2.34
1/4	.236"	.078"	11-11538	$2.65
3/8	.254"	.118"	11-11539	$3.90
1/2	.472"	.157"	11-11540	$3.95
3/4	.708"	.236"	11-11541	$5.40
1	.945"	.315"	11-11542	$8.95

IGNITION SHIELDING BRAID

Tinned copper tubular braid. Very flexible multi-strand braid. Excellent way to shield spark plug wires to reduce radio frequency interference (RFI). Fits over standard spark plug wire. Use 1/2" heat shrink to secure the ends.
Shielding Braid per foot .....P/N 11-02463..... $0.77
Heat Shrink Tubing, 1/2", 4 ft. length .....P/N 11-01300..... $2.85

TINNED COPPER BRAID



Used for static shielding on short lengths of wire or cable and for flexible bonding connections and ground straps. Made of extra flexible tinned copper wire. Rolled flat for spooling.

P/N	Nominal Flat Width	Current *Capacity Amps.	Wt./100 Ft. Lbs.	Price	
				Per Ft.	100 Ft.
858	1/8"	16	0.7	$0.39	$33.15
863	1/4"	32	1.5	$0.45	$38.25
864	3/8"	46	2.5	$0.94	$79.90
868	1/2"	53	3.3	$0.99	$84.15
865	5/8"	53	3.4	$0.99	$84.15

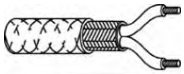
EXPANDABLE ICO-FLEX™ XPF SLEEVING

ICO-FLEX™ XPF is flame retardant & light weight, self-fitting, monofilament sleevings designed to encapsulate and protect cable bundles and wire assemblies. These expandable sleevings adjust to irregular surfaces and contours, providing abrasion resistance and protection with a minimum of bulk and weight. Black.

Nominal ID In/mm	Bundle Size Range Minimum - Maximum In/mm	Part No.	Price/ Ft.
.125 / 3.18	.094 - 0.125 / 2.38 - 3.18	11-12352	$0.19
.250 / 6.35	.125-.0375 / 3.18-9.53	11-04275	$0.35
.375 / 9.53	.250 - 0.625 / 6.35 - 15.88	11-03899	$0.40
.500 / 12.70	.250-0.750 / 6.35-19.05	11-04274	$0.65
.750 / 19.05	.500-1.250 / 12.70-31.75	11-12353	$0.90
1.250 / 31.75	.750-1.500 / 19.05-38.10	11-12354	$1.08
1.750 / 44.45	1.25-2.500 / 31.75-63.50	11-12356	$1.40
2.000 / 50.80	1.500-3.000 / 38.10-76.20	11-12357	$3.38

EL

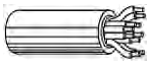
SHIELDED TEFZEL WIRE



This hook-up wire is standard in the aviation industry for installation of electronics equipment. Sold in 1' increments and spooled as a continuous length.

16G 2 CON..... P/N 11-04473.....$1.62
18G 2 CON..... P/N 11-04474.....$1.66
18G 3 CON..... P/N 11-04475.....$1.90
24G 1 CON..... P/N 11-04476.....$0.47
24G 2 CON..... P/N 11-04477.....$0.84
24G 3 CON..... P/N 11-04478.....$1.17

10 CONDUCTOR GRAY CODE TEFZEL WIRE



Excellent for carrying gray code information from the encoder to other devices that take gray code input. Instead of running individual 24AWG wirs and running them in a bundle, use this handy all in one, color coded, 10 conductor cable. Sold in 1' increments. P/N 11-04479.....$4.60

BATTERY CABLE

6-gauge multi-strand copper core cable. Meets SAE Spec J1127-SGT. Price is per foot.

Black.....P/N 11-03942.....$1.50
Red.....P/N 11-03943.....$1.27
Lug (6 Gauge).....P/N 11-05110.....$0.52

GPL RED BATTERY CABLE

Description	Part No.	Price
GPL Battery Cable 4 Ga / 5 ft Red	15-08030	$19.08
GPL Battery Cable 4 Ga / 26 Inch Red	15-08035	$14.12

4 CONDUCTOR UNSHIELDED WIRE 18 AWG

The cable can be cut to length, jacket removed and conductors stripped to custom specifications. Awg Size: 18 Thickness: .016" Nominal O.D: .032" Suitable for EIA RS-232 applications P/N 11-08280.....$1.74 /ft.

SOLDERING SLEEVES

One-step, heat-shrinkable wire and cable interconnection device. Create strong, soldered connections. Consist of a heat-shrinkable sleeve and a premeasured, fluxed solder band. When heated, the tubing shrinks and the solder melts, making reliable, insulated terminations.

.125"SM..... P/N 11-04480 .....$0.80
.200"MD..... P/N 11-04481 .....$0.79
.300"LG..... P/N 11-04482 .....$1.45

SOLDERING SLEEVES

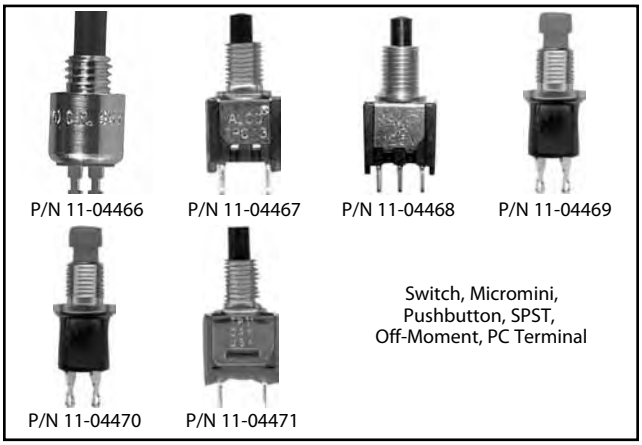
Termination sleeves consist of a heat-shrinkable, transparent, polyvinylidene fluoride sleeve with an inner, pre-fluxed, solder preform and two thermoplastic sealing inserts. When heat is applied, the solder melts and flows to provide a superior connection between the ground lead and the shield. At the same time, the two thermoplastic sealing inserts melt and the outer sleeve shrinks to provide an environmentally protected termination.

.125 ..... P/N 11-07902.....$0.48
1/4"..... P/N 11-07903.....$0.49
.300 ..... P/N 11-07905.....$0.72

MU-METAL MAGNETIC SHIELDING

Provides shielding when placed around electronic equipment proir to instalation. 4"x4 mil. Sold by the inch. P/N 11-04483.....$3.85/inch

MOMENTARY PUSH-BUTTON SWITCHES



SPST, Normally Open, Black ..... P/N 11-04467 ..... $19.75
SPDT, Momentary, Black..... P/N 11-04468 ..... $15.85
1/4" Threads, Normally Open, Red ..... P/N 11-04469 ..... $5.75
1/4" Threads, Normally Open, Black..... P/N 11-04470 ..... $5.35
SPDT, Momentary, Black..... P/N 11-04471 ..... $5.50

HEAT SHRINK BUTT SPLICES

Heat-Shrinkable crimp butt splices completely insulate and protect electrical connections from water, condensation, salt and corrosion. Provides strain relief and protects against wire pull-out and vibration in the most rugged environments. Qualified to MIL-S-81824/1.

BLUE

AWG: 20-16 -- I.D. dimensions (mm/in) Crimp barrel size range 779-2680(CMA) 0.39-1.34(mm) Sold by the Piece

Side 1	
Sealing Insert	Max. no. of wires
2.79(.110)	2
Side 2	
Sealing Insert	Max. no. of wires
2.79(.110)	2

Blue (Tin-plated) ..... P/N 11-04427 ..... $1.15
Blue (Nickel-plated) ..... P/N 11-04428 ..... $4.55

Side 1	
Sealing Insert	Max no. of wires
4.32(.170)	2
Side 2	
Sealing Insert	Max no. of wires
4.32(.170)	2

RED

AWG: 26-20 -- I.D. dimensions (mm/in)Crimp barrel size range 1900-6755(CMA) 0.95-3.37(mm) Sold by the Piece

Red (Tin-plated) ..... P/N 11-04425 ..... $1.17
Red (Nickel-plated) ..... P/N 11-04426 ..... $3.45

Side 1	
Sealing Insert	Max no. of wires
4.32(.170)	2
Side 2	
Sealing Insert	Max no. of wires
4.32(.170)	2

YELLOW

AWG: 16-12 -- I.D. dimensions (mm/in) Crimp barrel size range 1900-6755(CMA) 0.95-3.37(mm) Sold by the Piece

Yellow (Tin-plated)..... P/N 11-04429..... $1.55
Yellow (Nickel-plated) ..... P/N 11-04430..... $5.95

MALE SUB-D CRIMP PIN

20/24G Crimp Pin. Pins/Sockets.

P/N 11-00139..... $0.45

FEMALE SUB-D CRIMP SOCKET

Subminiature D Pins/Sockets for MIL-C-24308 and MIL-C-39029.

P/N 11-11877..... $0.60

SINGLE CONDUCTOR 1/8 INCH SOLDER SLEEVE WITH PIGTAIL

Perfect for single conductor shielded cable and great for terminating "P Leads".

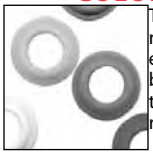
P/N 11-12363..... $0.75

WIRE SPOOLS

Chipboard tube & top wire spools, complete with metal spool plugs that have pre-stamped drive holes and locking anchors for a long lasting use.

Tube 2"L x 3"ID, End 7"OD x 3/4" Drive Hole
P/N 11-11507..... $1.95
Tube 6"L x 3"ID, End 7"OD x 3/4" Drive Hole
P/N 11-11508..... $2.15

COLOR CODED CIRCUIT BREAKER CAPS



These color coded caps can easily be installed and removed from Klixon and similar type circuit breakers. Colored caps are used to "flag" designated circuit breakers for flight check and other purposes. In addition, they greatly improve grip. Won't shake loose and rattle like others can.

White.....P/N 11-04455.....$2.35 Orange.....P/N 11-04456.....$2.35
Red.....P/N 11-04457.....$2.35 Blue.....P/N 11-04458.....$2.35
Yellow.....P/N 11-04459.....$2.35 Black.....P/N 11-04460.....$2.35
Gray.....P/N 11-04461.....$2.35 Green.....P/N 11-04462.....$2.35
Discount: 10% Discount on 6 or more of the same Part number.

CIRCUIT BREAKER LOCKS

Circuit Breaker Safety Locks - With & Without Tags. Prevents the inadvertent closing of circuit breakers connected to equipment that is under repair or removed from the aircraft. Easily installed and removed from Klixon and similar type circuit breakers. Safety locks come both with and without tags. All locks are red, tags are red with white lettering. Tags measure 2"x3/4".

No Tag..... P/N 11-04463 ..... $4.80
Remove Before Flight..... P/N 11-04464 ..... $11.75
Inoperative ..... P/N 11-04465 ..... $12.50

EL

BNC COAXIAL ANTENNA CONNECTORS

Male..... P/N 11-03992 ..... $2.85
Female..... P/N 11-03993 ..... $3.50

TNC FEMALE CRIMP RG142

TNC Female Crimp RG142
P/N 11-08641.....$14.80

BNC CONNECTOR RIGHT ANGLE BNC MALE TO FEMALE

Male to Female .....P/N 11-04454.....$5.95

BNC CONNECTOR RG58

Male, Right angle, dual crimp.
P/N 11-04444.....$49.50

MALE BNC TO SMA FEMALE ADAPTER

Male BNC/SMA Female adapter. Configuration: Straight Connector 1: BNC Male. Connector 2: SMA Female.
P/N 11-10463.....$14.85

BNC FEMALE BULKHEAD DUAL CRIMP

RG58 ..... P/N 11-04445 .....$15.85

BNC RF MALE CONNECTOR - RIGHT ANGLE

• Connector - RF • Plug • Housing Gender = Plug • Terminate To Coaxial Cable • Coaxial Cable Termination Type = Crimp P/N 11-08415.....$48.85

BNC STRAIGHT ADAPTERS - PLUG/PLUG 50 OHMS

RF/Coaxial Adapter. Dimensions: a 1.25"; b .562". Connector Type: Intra-Series Coaxial. Convert From: BNC Plug. Convert To: BNC Plug P/N 11-08416..... $5.50

BNC STRAIGHT ADAPTERS - JACK/JACK 50 OHM

RF/Coaxial Adapter. Connector Type: Intra-Series Coaxial. Convert From: BNC Jack. Convert To: BNC Jack
P/N 11-08417..... $6.85

TNC CONNECTOR AMP MALE, DUAL CRIMP RG58

P/N 11-04446 .....$38.75

EL

TNC CONNECTOR AMP MALE, DUAL CRIMP RG142-400

P/N 11-04447 .....$27.65

TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG58

P/N 11-04449.....$45.80

TNC CONNECTOR AMP RIGHT ANGLE, MALE, DUAL CRIMP RG142-400

P/N 11-04450 .....$51.75

AMP RIGHT ANGLE DUAL CRIMP TOOL

P/N 11-10006 ..... $148.75

TNC CONNECTOR RIGHT ANGLE SOLDER/ SCREW RG58

P/N 11-04452.....$144.75

TNC CONNECTOR FEMALE, DUAL CRIMP RG58

P/N 11-04453 ..... $65.75

LITTLE BLUE CRIMPER

The Daniels AFM8 is designed for most of the miniature and sub-miniature connector types that are so widely used in all types of electronic systems. Originally developed for the Air Force, the AFM8 meets the need for a miniature tool accommodating wire sizes 20 thru 32 AWG. The cycle controlled precision ratchet assures consistently accurate crimps every time. The tool has a built-in eight step selector knob for ease in dialing the correct crimp depth setting for the wire being used. P/N 11-04443..... $319.00

K13-1 Low Density Pin Positioner For Little Blue Crimper
P/N 11-12211.....$53.75

K42 High Density Pin Positioner For Little Blue Crimper
P/N 11-12212.....$53.75

DMC Crimp Tool Turret Head Assembly
P/N 11-12197..... $104.95

DMC Crimp Tool Universal Head Assembly
P/N 11-12198.....$78.75

BIG BLUE CRIMPER

The Daniels AF8 has virtually limitless application within the specified wire range of 12 thru 26 AWG. Over 1,000 turret heads or positioners are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The eight impression crimp, which is standard in the AF8, assures absolute maximum tensile strength with almost every closed barrel contact. The precision ratchet controls cycling on the tool in both directions of handle movement. This assures the same, accurate crimp every time. It's like having a quality control inspector at every work station.
P/N 11-04442 .....$316.00

HAND INSERTION TOOL

This inexpensive, manual tool is lightweight and easy to use in the placement and/or removal of a terminal in a housing.
P/N 11-04439.....$67.99

MATE-N-LOK INSERTION PIN & SOCKET TOOL

Insertion tool for grounding blocks and locking connectors. The AMP insertion tool for MATE-N-LOK pins. Contact sizes 20-24 AWG. P/N 11-04437 .....$38.50

MATE-N-LOK EXTRACTION PIN & SOCKET TOOL

Insertion tool for grounding blocks and locking connectors. The AMP insertion tool for MATE-N-LOK pins. Contact sizes 20-24 AWG.
P/N 11-04438.....$19.50

PIN & SOCKET TOOL W/ INTERCHANGEABLE TIPS

This insertion & extraction tool consists of a handle, a cap, six insertion/ extraction tips, a plug, and a .050-in. hex wrench. The handle of the tool provides storage for the tips, plug and hex wrench. Each tip is color coded according to specific type and wire size.
P/N 11-04436.....$31.75

PIN INSERTION & EXTRACTION TOOL

The insertion of contacts during assembly or replacement during repair is quick and easy with the appropriate tools. The tools have to fit the contacts and the connectors if assembly and repair are to be carried out correctly. This tool is also absolutely necessary to use for extracting a proken pin for replacement or moving a misplaced pin for relocation. Insert and extract all your connector pins & sockets with this premium tool. It will work with both standard and high-density pins.

16 AWG Blue/White..... P/N 11-04431..... $15.95
20 AWG Red/White..... P/N 11-04432..... $15.50
24-20AWG Red/White..... P/N 11-04433..... $12.75
22 AWG Green/White ..... P/N 11-04434..... $14.95
22-28AWG Green/White ..... P/N 11-04435..... $7.50

QUICK DISCONNECT FEMALE PANEL MOUNT COUPLING

1 / 4 Hose Barb Valved Panel Mount Coupling Body.
P/N 11-04068.....$12.50

QUICK DISCONNECT FEMALE - IN LINE

1 / 4 Hose Barb Non - Valved In - Line Coupling Body
P/N 11-04066..... $4.95

QUICK DISCONNECT INSERT

For 1/4" ID tubing. Used with 11-04066 Quick Disconnect In-line or 05-01984 Quick Disconnect Panel Mount.
P/N 11-04067..... $1.85

ELECTRICAL TERMINALS

KOROSEAL LACING

Excellent lacing material. Permanently flexible. Resists oxidation, impervious to petroleum products. Holds tension on knots indefinitely. Perfect for holding wire bundles, tubing, etc. Rectangular cross-section 3/32"x 5/32".

P/N 11-12200.....$0.63/Ft.

BREYDEN POLYESTER LACING TAPES

Flat braided tape manufactured from 100% high tenacity, continuous filament polyester fiber. This product conforms to the requirements of MIL-T-43435B; Type II, Size 3, Finish C. The tape is uniformly impregnated with a synthetic elastomer coating to improve knot holding and tying characteristics. Ideal for spot tying. 500 yd. rolls.

Width: .085" (±10%); Thickness: .014" (±.003"); Tensile Strength: 50 Lb. (min.); Elongation: 40% (max.)

Natural.....P/N 11-02012.....$19.50
Black.....P/N 11-02013.....$21.65

BREYDEN NYLON LACING TAPES

Flat braided tape manufactured from 100% high tenacity, continuous filament nylon yarn. This tape is impregnated with a specially formulated microcrystalline, fungicidal wax. Conforms to the requirements of A-A-52080-B-3. Recommended for continuous lacing. 500 yd. rolls. Width: .077" (min.) / .094" (max.); Thickness: .011" (min.) / .017" (max.); Tensile Strength: 50 Lb. (min.); Wax Content: 15-32%; Elongation: 40% (max.)

Natural.....P/N 11-12170.....$21.50
Black.....P/N 11-12160.....$26.50

MS25181 NYLON SPLICES

Butt-type, self insulated.

Part No.	Wire Range	Price
320559	22-18	$0.72
320562	16-14	$0.76
320570	12-10	$1.45

AMP® BATTERY TERMINALS

Terminals may be crimped or soldered.

P/N	AWG Size	Amps	Stud Size	Price ea
33461	8	35	1/4"	$0.64
33466	6	50	5/16"	$0.88
33470	4	70	5/16"	$1.65
321600	2	90	3/8"	$1.97
321867	1/0	125	5/16"	$3.70
321868	1/0	125	3/8"	$2.84

COPPER EYELET BATTERY LUG

6 GA Copper Eyelets 1/4" Stud.

P/N 11-05110.....$0.52

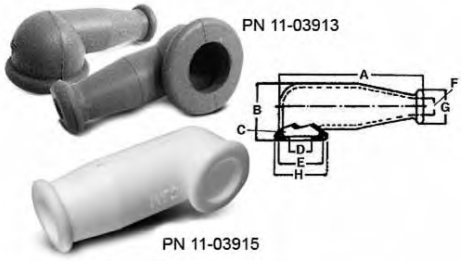
RING AND SPADE TONGUE TERMINALS

Specifications: Wire Range (mm [AWG]): 0.30-1.40² [22-16], Wire/Cable Size (CMA): 509 – 3,260 Tongue Material Thickness (mm [in]): 0.84 [0.033], Voltage (VAC): 300

Ring Tongue Term 320572 5/16.....P/N 11-09313.....$0.45
Ring Tongue Term 320573 3/8.....P/N 11-09314.....$0.55
Ring Tongue Term 328975 1/2".....P/N 11-09315.....$1.26

MS25171 ELECTRICAL TERMINAL NIPPLES

Right angle nipples made of silicone rubber (MIL-R-5847, Class II, Grade 50).



Part No.	Dimension								Dash No.	Price Each
	A	B	C	D	E	F	G	H		
11-03913	1.38	.56	.06	.40	.63	.16	.41	.76	-1S Red	$1.22
11-04837	1.38	.56	.06	.40	.63	.16	.41	.76	-1S Black	$1.22
11-03914	2.50	1.00	.06	.56	.82	.31	.56	.95	-2S White	$1.18
11-08287	2.50	1.00	.06	.56	.82	.31	.56	.95	-2S Black	$1.69
11-03915	2.50	1.00	.06	.56	.82	.43	.68	.95	-3S White	$1.18
11-03916	2.50	1.00	.06	.56	.82	.56	.82	.95	-4S White	$1.15

LIQUID ELECTRICAL TAPE

Protects connections with applicator brush protects electrical connections and terminals against corrosion. Ideal for battery switches, instrument panel terminations, bilge pumps and electrical connections. Dielectric, resists moisture by filling in wire nuts and butt connector ends. The water-based formula is environmentally friendly, non toxic, non-flammable, odor free, will not harden in container, and easy to clean up with water.

4oz. Bottle P/N 09-42565.....$14.50

AMP® SOLDERLESS TERMINALS & SPLICES

AMP's solderless electrical terminals and splices meet and exceed today's requirements for reliable terminals in applications ranging from control circuits to heavy duty power wiring. A limited number of sizes and types of terminals and tools are featured in this catalog. Information and pricing on unlisted items furnished on request.

RING TONGUE, NON-INSULATED TERMINALS

The barrel and tongue of these terminals are fabricated of the finest electrolytic copper and electro-tinned for optimum performance. The seam is brazed for uniform metal strength around the entire barrel area.

Part No.	AWG Size	Stud Size	Price
34104	22-16	4	$0.17
34105	22-16	6	$0.19
34108	22-16	8	$0.28
34109	22-16	10	$0.29
34113	22-16	1/4	$0.24
321684	16-14	6	$0.23
34122	16-14	8	$0.26
34123	16-14	10	$0.19
34124	16-14	1/4	$0.19
32994	12-10	8	$0.32
33457	12-10	10	$0.19
35772	12-10	1/4	$0.26
35135	12-10	1/2	$0.57

RING TONGUE, VINYL INSULATED TERMINALS

Each insulated terminal consists of a tin plated copper body, a tin plated copper wire support sleeve and a color-coded insulation sleeve.

Part No.	AWG Size	Stud Size	Price
31880	22-16 Red	4	$0.40
31885	22-16	6	$0.23
31890	22-16	8	$0.29
36154	22-16	10	$0.29
31894	22-16	1/4	$0.43
32442	16-14 Blue	6	$0.27
31902	16-14	8	$0.25
31903	16-14	10	$0.24
31906	16-14	1/4	$0.32
35149	12-10 Yellow	6	$0.65
35108	12-10	8	$0.38
35109	12-10	10	$0.39
35110	12-10	1/4	$0.38
35112	12-10	3/8	$0.74

KNIFE DISCONNECTS

Nylon InsulatedTwo Required Per Assembly.

32446 ..... 22-16 ..... Red ..... $0.62 ea.
32448 ..... 16-14 ..... Blue ..... $0.63 ea.

BUTT TYPE SPLICES

PLASTI-GRIP

34070 ..... 22-16 ..... Red ..... $0.33 ea.
34071 ..... 16-14 ..... Blue ..... $0.27 ea.
34072 ..... 12-10 ..... Yellow ..... $0.42 ea.

Discount: Less 20% on 100 pieces (per P/N)

AMP TERMINAL KITS

Terminal & Splice Kit ..... P/N 11-50000 ..... $85.00
Above w/15 Drawer Cabinet ..... P/N 11-50005 ..... $125.95
Above w/Cabinet and 604252-1 tool ..... P/N 11-50010 ..... $145.95

FOR KIT COMPONENTS VISIT
www.aircraftspruce.com
OR CALL OUR SALES TEAM AT: 1-877-4-SPRUCE

PIDG FASTON RECEPTACLES BY AMP

*Style A:
No dimple w/wire stop.
**Style B: Dimple w/wire stop.
Less 20% on 100 pcs. (per P/N)

Part #	Tab Width	AWG	Tab Thk.	Price
640903-1**	0.250"	22-18	.032	$0.29
640905-1**		16-14	.032	$0.37
42844-1**		14-12	.032	$0.42
11-00808**		12-10	.032	$0.57
640909-1**	0.205"	22-18	.020	$0.32
640911-1**		22-18	.032	$0.31
640913-1**		16-14	.020	$0.31
640915-1**		16-14	.032	$0.36
640917-1**	0.187"	22-18	.020	$0.35
640919-1**		16-14	.020	$0.32
61048-1**	.110"	22-18	.016	$0.58
61060-1**		22-18	.020	$0.30
60894-1**		22-18	.032	$0.32
640923-1*		22-18	.020	$0.37
640925-1*		22-18	.032	$0.38
640929-1*		16-14	.020	$0.37

WIRE PIDG CAPS

16-14G closed barrel end splice.

Color	Part No.	Price
Blue	11-11842	$0.64
Yellow	11-11843	$0.99
Red	11-11841	$0.32

EL

SEAL-ALL CONNECTORS

Seal-All Connectors are an environmentally sealed connection system developed to withstand exposure to extreme temperatures, moisture and harsh engine compartment fluids and chemicals with unfaltering performance. It consists of mating heat stabilized polyamide housings, male and female "pin and socket" terminals and self-lubricating silicone connector and cable seals. Seal-All connector configurations are available for one to six wires. -40 C to 125 C temperature range. Now you can have the same superior Plug/Connector that is used in vehicle OEM manufacturing.
Below are sold as the shell only. Terminal connector kits are not included. Order seperately.

SEAL-ALL CONNECTORS
(MALE AND FEMALE SHELLS ONLY)

SINGLECONDUCTORKIT
MANF P/N - WHT1C

P/N 11-06581.....$3.85

DOUBLECONDUCTORKIT
MANF P/N - WHT2C

P/N 11-06582.....$4.50

TRIPLE CONDUCTOR KIT
MANF P/N - WHT3C

P/N 11-06583 .....$4.75

4 CONDUCTOR KIT
MANF P/N - WHT4C

P/N 11-06584 .....$5.65

4 CONDUCTOR KIT
MANF P/N WHT4CSQ

P/N 11-06585.....$5.95

5 CONDUCTOR KIT
MANF P/N - WHT5C

P/N 11-06586 ..... $11.75

6 CONDUCTOR KIT
MANF P/N - WHT6C

P/N 11-06587.....$7.85

EL

VINYL TUBING

Clear PVC tubing for cable protection. Commonly called "spaghetti". Meets Spec. MIL-I-63ID.

AWG Size	I.D.	Wire Wall	Size	Part No.	Price/Ft.	100 Ft.
9	.118	.020	20-22	11-02200	$0.18	$14.40
7	.148	.020	16-18	11-02300	$0.28	$22.40
5	.186	.020	12-14	11-02400	$0.19	$15.20
2	.263	.020	8-10	11-02500	$0.24	$19.20
5/16	.312	.025	6	11-02600	$0.35	$28.00
3/8	.375	.025	4	11-02700	$0.38	$30.40

PREMIUM VINYL TUBING

This premium vinyl tubing is recommended for use in extremely cold temperatures where tubing can be prone to becoming stiff and brittle. Manufactured to Spec. MIL-I-7444B, this tubing can be coiled and bent easily and will retain some flexibility even in extreme temperatures. Sold in 50 ft. and 100 ft. coils in the sizes listed below.

AWG Size	Wire Size	I.D. (In.)	Wall (In.)	50 Ft. Coil		100 Ft. Coil	
				Part No.	Price	Part No.	Price
9	20-22	.118	.020	11-16195	$13.50	11-16190	$27.75
7	16-18	.148	.020	11-16175	$14.75	11-16170	$29.90
5	12-14	.186	.020	11-16155	$17.25	11-16150	$35.25
2	8-10	.263	.020	11-16125	$23.00	11-16120	$46.55
5/16	6	.312	.025	11-16165	$25.25	11-16160	$51.25

TERMINAL CONNECTOR KITS FOR SEAL-ALL CONNECTORS

Terminal Kits (includes 6 each-male, female terminals and 12 seals). Will work with all Seal-All Shells. Note-the male terminal pin goes into the female shell.
24-22 Ga Wire MANF P/N - WHT2422.....P/N 11-06588 .....$8.95
20-18 Ga Wire MANF P/N - WHT2018.....P/N 11-06589 .....$9.50
16-14 Ga Wire MANF P/N WHT1614.....P/N 11-06590 .....$8.95

SEAL-ALL HEAVY DUTY CONNECTOR

Heavy Duty Connector-42 amps continuous maximum current rating. For 12-10 gauge wire.
Complete 2 conductor kit
P/N 11-06591 ..... $16.95

SEAL-ALL CRIMP TOOL

Crimp tool works with all Seal-All terminals and seals. Its compact, low-cost parallel jaw design eliminates terminal rocking.
Seal-All Crimp Tool ..... P/N 11-06592 ..... $37.95

PROFESSIONAL SEAL-ALL CRIMPER

Crimps Seal-All terminals and seals in one cycle. Features two double Cavities, an orientation block and a ratchet mechanism to ensure that each crimp cycle is completed. Factory calibrated to be used only with Seal-All terminals and seals. Wire range 20-14.
Pro Seal-All Crimper
P/N 11-06593 .....$134.95

SEAL-ALL TERMINAL RELEASE TOOL

A must have tool for working with Seal-All shells and terminals. Designed to depress Seal-All rentention barbs to allow terminal removal from shells.
Seal-All Tool
P/N 11-06594.....$8.60

AVIONICS CONNECTORS

Descriptions	Part No.	Price
9 Pin Female D Connector / Crimp	11-12149	$1.10
9 Pin Male D Connector / Crimp	11-12150	$0.86
37 Pin Female D Connector / Crimp	11-12151	$1.75
37 Pin Male D Connector / Crimp	11-12152	$2.35
25 Pin Female D Connector / Crimp	11-12153	$1.10
9 Pin D Connector Cable Clamp	11-12154	$1.85
37 Pin D Connector Clamp Cable	11-12155	$2.79
15 Pin Male Crimp Sub-d Connector	11-11892	$1.16
25 Pin Male Crimp Sub-d Connector	11-11893	$1.09
25 Pin D Connector Cable Clamp	11-11894	$1.88
SMA Male Crimp RG58	11-12173	$21.25
Dual SMA Male Crimp RG142-400	11-12172	$16.95
15 Pin Female Crimp Style-d Connect	11-11878	$1.09
15 Pin Sub-d Cable Clamp Housing	11-11879	$2.14
34 Pin Grounding Block	11-01297	$49.65
Female Sub-d Pin 20-24 Gauge Crimp Socket	11-11877	$0.60
Female Screw Lock For Sub-d Connector	11-11896	$1.42

AMP® FLEXI-BLOCK MODULAR TERMINAL BLOCK SYSTEM

Assemble terminal blocks to custom requirements in seconds:
1. Pull out the number of block assemblies required from dispenser box. 2. Cut the track with hacksaw or cutting tool two spaces longer than unit. Slip the block assembly into the track 3. Insert end stops and assembly is complete.
USER'S KIT - Consists of 25 pcs Flexi-Block terminal block, 12 end stops and (2) 12" pcs. of track. Complete kit.

P/N 601883-1 .....$69.00

PROFESSIONAL KIT - No. 6 kit consists of 100 ea. P/N 604101-1 block assemblies, 25 ea. of P/N 604111-1 end stops & 2 ea. P/N 601805-1 track 3 ft. long. Complete kit. P/N 601804-8 ..... $251.95

COPPER BUS BAR - 0.125" x .5" Wide

P/N 03-40890 .....$3.80/ft

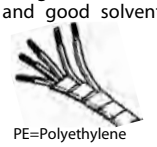
AMP® SPIRAP SPIRAL PLASTIC TUBING

Spiral plastic tubing is a fast and economical way to bundle wires and harnesses. It is designed to protect wire insulation for the life of the circuit even under severe vibration. Spirap tubing obtains its gripping ability from the memory of the plastic. When 1/4" diameter Spirap is wrapped around a 3/4" diameter wire bundle, the Spirap tubing tries to return to is original 1/4" diameter size, effectively gripping the wire bundle. Flame retardant polyethylene. Color—white. Bundle diameter range: 3/16" to 2". Discount: 20% less on orders of 100 feet

White ..... P/N 500004-1 ..... $2.00/ft.
Black..... P/N 11-08320 ..... $1.57/ft.

SPIRAL WRAP WIRE PROTECTORS

Permits flexible routing of cable harness while forming a neat, protective bundle. It twists on easily and quickly and allows lead-outs at any point. When installed, it may be gapped for greater economy and flexibility or it may be butted tightly for maximum abrasion resistance, insulation protection and greater rigidity. Nylon type-for use in wider temperature ranges with high resistance to abrasion and good solvent resistance.



PE=Polyethylene
NY=Nylon

Part No.	Size	Max. Dia.	Price/ft.
11-12318 (PE)	1/8"	1/2"	$0.68
11-12316 (PE)	3/16"	1-1/2"	$0.74
11-12314 (NY)	1/4"	2"	$1.08
11-12338 (NY)	3/8"	3"	$1.95
11-12312 (NY)	1/2"	4"	$2.89
11-12334 (PE)	3/4"	6"	$2.15
11-12311 (PE)	1"	8"	$2.50

STA-KON ELECTRICAL TERMINALS

Color-coded MS25036 nylon ring w/self-insulated grip. 20% Discount on 100

Wire Range: 22-18		
P/N	Bolt Hole	Price
11-03864	4	$0.78
11-03865	6	$0.82
11-03866	8	$0.82
11-03862	10	$0.78
11-03863	1/4	$1.20
Wire Range: 16-14		
11-04093	4	$0.55
11-03869	6	$0.79

Wire Range: 16-14 Cont.		
P/N	Bolt Hole	Price
RB14-8	8	$0.74
RB14-10	10	$0.93
RB14-14	1/4	$0.83
Wire Range: 12-10		
RC10-6	6	$0.92
RC10-8	8	$0.75
RC10-10	10	$0.98
RC10-14	1/4	$0.97
RC10-38	3/8	$0.98

COBRA® RUBBER MOUNTS

Part No.	Size	Color	Qty.	Price
11-02470	3/4"	Black	100	$15.50
11-02472	3/4"	Natural	100	$14.85
11-02474	1"	Black	100	$19.75
11-02476	1"	Natural	100	$21.50

COBRA® ACRYLIC MOUNTS

Part No.	Size	Color	Qty.	Price
11-02478	3/4"	Black	100ct	$15.60
11-02479	3/4"	Natural	100ct	$14.65
11-02481	3/4"	Natural	1000ct	$15.00
11-02482	1"	Black	100ct	$24.85
11-02484	1"	Natural	100ct	$23.95

STANDARD CINCH AND TRIM GUN

C-200 Wraps ties from 18 to 50 lbs with auto tension setting & a rugged die cast aluminum body. Applies traditional ties as well as low profile ties.

P/N 11-02468.....$39.75

CABLE TIES

This all nylon cable tie is designed to hold cables securely. Bundling strength military requirements. Installs in just seconds.

Part No.	Cat. #	L	Price
11-04230	L-4-18	4"	$0.03
11-04039	MS3367-5-9	5"	$0.03
11-04229	L-7-50	7"	$0.03
11-04058	L-14-50	14"	$0.08

CABLE TIE ASSORTMENT PACK

Includes: MS3367-5-9 Cable Ties 5"(15), Cable Ties MS3367-4-9(15), Cable Ties MS3367-1-9(20), Cable TiesMS3367-29(5)

P/N 11-03768.....$1.90

TYTON HORIZONTAL IDENTIFICATION CABLE TIES

Length: 8"; Strength: 50 lbs. ..... P/N 11-12360..... $0.71

TYTON VERTICAL IDENTIFICATION CABLE TIES

Length: 4"; Strength: 18 lbs.
P/N 11-12365 ..... $0.39

TYTON MOUNTING CABLE TIES

Length: 4"; Strength: 18 lbs. ..... P/N 11-12350 ..... $0.58
Length: 8"; Strength: 50 lbs. ..... P/N 11-12355 ..... $0.47

ADHESIVE AND SCREW CABLE TIE MOUNTS

Part No.	Strength	Mounting	Price/50
11-01017	18 to 30 lbs.	#4 Screw	$39.50
11-03854	18 to 50 lbs.	#8 Screw	$46.50
11-03855	18 to 150 lbs.	#8 Screw	$47.75

CRADLE CABLE TIE MOUNTS

Part No.	Strength	Mounting	Price/50
11-03987	18 lbs.	#6 Screw	$22.85
11-03988	18 lbs	#8 Screw	$21.75
11-03989	18 to 50 lbs.	#8 Screw	$28.50
11-03990	18 to 50 lbs.	#10 Screw	$29.50
11-03991	18 to 120 lbs.	1.4" Screw	$31.25

NYLON BULKHEAD SEALS

Nylon Bulkhead seals are used when electrical harnesses or tubing is passed through bulkheads in pressurized and non-pressurized aircraft.

Bulkhead Seal, Square, 1-1/8" Hole ..... P/N 11-04059 ..... $12.65
Bulkhead Seal, Elliptical, 3/4" Hole ..... P/N 11-04061 ..... $12.50
Bulkhead Seal, Elliptical, 1/2" Hole ..... P/N 11-04060 ..... $11.70
Bulkhead Seal, Square, 1-3/8" Hole ..... P/N 11-04062 ..... $22.50

COBRA® CABLE TIES

With a contoured locking head, the Cobra configuration is safer, more flexible and stronger than existing cable ties. Safer because the (often barbed) stub is now deflected into a pocket at the rear of the head. More flexible because the flat lock section curves to the bundle contour and stronger because the Cobra uses an inline geometry, eliminating the stress points of traditional cable ties. Bundles down to 3/8" diameter and meets new AS 3361 specs. Features pick-proof underside lock & all rounded edges.

Color	Qty.	Tensil	Length/Width	Part No.	Price
UV Black	100	50 Lbs.	7.5" x .178"	11-01883	$5.45
UV Black	1000	50 Lbs.	7.5" x .178"	11-01884	$53.80
Natural	100	50 Lbs.	7.5" x .178"	11-01885	$4.35
Natural	1000	50 Lbs.	7.5" x .178"	11-01886	$39.85
UV Black	100	50 Lbs.	11"	11-08033	$9.50
UV Black	100	50 Lbs.	14"	11-08034	$10.85
Black	-	120 Lbs.	14" x .178"	11-02416	$17.50
Natural	-	120 Lbs.	14" x .178"	11-02417	$15.95
Black	-	18 Lbs.	4" x .178"	11-02464	$1.95
Natural	-	18 Lbs.	4" x .178"	11-02466	$1.85
Natural	-	18 Lbs.	4" x .178"	11-02467	$14.75

COBRA® CABLE TIE KITS

STANDARD - Kit includes: 100 low profile blk Cobra® ties , the rugged Cinch&Trim application gun and an instruction manual. Gun applies traditional as well as low profile ties.

Black 7.5" Ties .....P/N 11-06319 .....$44.85
Natural 7.5" Ties .P/N 11-06320 .....$44.95

HEAVY DUTY - Kit includes: heavy duty Cinch & Trim application gun , qty. 25 Cobra® low profile 14 inch 120 lb ties blk . and an instruction manual. Gun applies traditional as well as low profile ties.

Black 14" Ties .....P/N 11-04729 .....$49.85
Natural 14" Ties ..P/N 11-04730 .....$49.75

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BOGERT CABLES

BOGERT'S LOW LOSS COPPER CABLE KITS

Benefits:
- Starting performance improved, both hot & cold
- Eliminates nearly all voltage drop between battery & starter
- Starter current draw reduced
- Faster cranking, crank longer on the same battery
- Prolonged battery and starter life
- Less stress on battery & starter system
- Helps assure confidence in passengers
- Reduces the personal frustration and irritation factor
- Exceeds Piper Service Bulletins SB836 and SB836a

Contents:
- STC & AML Copy
- Sample log book entry
- Sample 337 sample entries
- Formula for figuring weight & balance, & C.G. Change
- Easy to follow instructions
- Schematic listing part numbers for all cables in the kit
- Flexible 1 gauge M22759, cut to length & assembled
- Cut to the correct length
- Assembled with 'slim-head' style terminals
- Insulated with shrink tubing

Aircraft Application		Part No.	Our Price	Aircraft Application		Part No.	Our Price
PA-12		11-00247	$288.95	PA-28-235	Cherokee	11-15150	$389.00
PA-16		11-00248	$213.95	PA-28-236	Dakota	11-15152	$387.00
PA-18	Super Cub	11-15102	$287.95	PA-30	Twin Comanche	11-15154	$563.00
PA-20	Pacer	11-15104	$288.95	PA-31-300	Navajo	11-15156	$613.00
PA-22	Tripacer/Colt	11-15106	$205.95	PA-31-310	Navajo	11-15158	$613.00
PA-23-150/160	Apache	11-15108	$640.00	PA31-325	Navajo	11-15160	$613.00
PA-23-250	Aztec (4&6 place)	11-15110	$617.00	PA-31-350	Navajo	11-15162	$643.00
PA-24-180/250	Comanche (Battery AFT)	11-15112	$384.00	PA-31P	Navajo	11-15164	$643.00
PA-24-260	Comanche (battery fwd of firewall)	11-15114	$360.00	PA-31T1	Cheyenne I	11-15168	$1,258.00
PA-31T	Cheyenne	11-15166	$1,258.00	PA-32R-301T	----------	11-15184	$343.00
PA-24-260	Comanche (AFT)	11-15116	$226.95	PA-32-260/300	Cherokee Six	11-15170	$320.00
PA-24-400	Comanche	11-15118	$305.95	PA-32R-300	Lance	11-15172	$305.00
PA-25-235/260	Pawnee	11-15120	$382.00	PA-32RT-300	Lance	11-15174	$296.95
PA-25-235/260	Pawnee (SN25-7556153 & up)	11-15122	$358.00	PA-32RT-300T	Lance	11-15176	$296.95
PA-28-140	Cherokee	11-15124	$339.00	PA-32-301	----------	11-15178	$322.00
PA-28-150/160	Cherokee	11-15126	$388.00	PA-32R-301	----------	11-15180	$296.95
PA-28-151	Warrier	11-15128	$348.00	PA-32-301T	Turbo Saratoga	11-15182	$487.00
PA-28-161	Warrier II	11-15130	$353.00	PA-34-200	Seneca I	11-15186	$733.00
PA-28-180	Cherokee	11-15132	$387.00	PA-34-200T	Seneca II	11-15188	$678.00
PA-28R-180	Arrow	11-15134	$388.00	PA-34-220T	Seneca III	11-15190	$678.00
PA-28-181	Archer II	11-15136	$389.00	PA-36-285		11-00250	$315.00
PA-28R-200	Arrow II	11-15138	$387.00	PA-36-300		11-00251	$315.00
PA-28R-201	Arrow III	11-15140	$389.00	PA-36-375		11-00252	$422.00
PA-28R-201T	Turbo Arrow III	11-15142	$380.00	PA-38-112	Tomahawk	11-15192	$221.95
PA-28RT-201	Arrow IV	11-15144	$314.00	PA-39 C/R		11-00253	$583.00
PA-28RT-201T	Turbo Arrow IV	11-15146	$380.00	PA-44-180	Seminole	11-15194	$831.00
PA-28-201T	Turbo Dakota	11-15148	$380.00	PA-44-180T	Turbo Seminole	11-15196	$831.00

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CESSNA – BEECHCRAFT – BELLANCA – GRUMMAN – LUSCOMBE – MOONEY – STINSON – COMMANDER – SWIFT

Aircraft Application	ParT No.	Our Price
Cessna 150 A, B, C	11-00273	$239.95
Cessna 150 D, E, F, G, H`	11-00274	$164.85
Cessna 150 J, K, L, M	11-00275	$189.75
Cessna 152 no APU	11-00276	$221.95
Cessna 152 with APU	11-00277	$308.00
Cessna 170 A	11-00278	$221.95
Cessna 170 B	11-00279	$221.95
Cessna 172 A	11-00280	$254.95
Cessna 172 B, C	11-00281	$287.95
Cessna 172 D, E (rear), F	11-00282	$214.95
Cessna 172 G, H	11-00283	$213.95
Cessna 172 I, K, L, M	11-00284	$279.95
Cessna 172N	11-00285	$287.95
Cessna 172P	11-00286	$279.95
Cessna 175 A, B, C	11-00287	$295.95
Cessna 177 B	11-00288	$398.00
Cessna 177 RG	11-00289	$402.00
Cessna 180	11-00290	$307.00
Cessna 180 A, B, C, D, E	11-00291	$339.00
Cessna 180 J	11-00292	$293.95
Cessna 180 K	11-00293	$307.00
Cessna 182 1956 model	11-00294	$354.00
Cessna 182 A	11-00295	$381.00
Cessna 182 J	11-00296	$347.00
Cessna 182 E, F, G, H, J, K, L, M, N, P, Q	11-00297	$430.00
Cessna 185 E & A185E	11-00298	$381.00
Cessna A185F 12 VOLT	11-00299	$379.00
Cessna A185F 24 VOLT	11-02211	$380.00

Aircraft Application	ParT No.	Our Price
Cessna U206 C-G	11-00301	$262.95
Cessna 210 D	11-00302	$214.95
Cessna 210 E	11-00303	$279.95
Cessna T210 F	11-00304	$246.95
Cessna 210 K, T210K	11-00307	$295.95
Cessna 210 N, T210N	11-00306	$271.95
Beechcraft BE-35-C33	11-00254	$272.95
Beechcraft BE-V35	11-00255	$262.95
Beechcraft BE-C35	11-00256	$262.95
Beechcraft BE-S35	11-00257	$262.95
Bellanca BL-14-19-2	11-00258	$355.00
Bellanca BL-14-19-3	11-00259	$347.00
Bellanca BL-17-30	11-00260	$347.00
Bellanca BL-17-30A	11-00261	$276.95
Bellanca/Champion 7GCBA, 7ECA	11-00262	$339.00
Bellanca/Champion 7GCAA, 7KCAB	11-00263	$338.00
Bellanca/Champion 8KCAB	11-00264	$338.00
Bellanca/Champion 7GCB	11-00265	$248.95
Bellanca/Champion 7GCBC	11-00266	$339.00
Grumman GRUM-AA5, 5A, 5B	11-00267	$189.75
Grumman GRUM-AA-1A, 1B, 1C	11-00268	$189.75
Luscombe LU-8E	11-00269	$256.95
Mooney MO-M20C	11-00270	$245.95
Mooney MO-M20F	11-00271	$298.95
Stinson STI-108 1, 2, 3	11-00272	$212.95
Rockwell Commander RW-112	11-00308	$519.00
Rockwell Commander RW-114	11-00309	$557.00
Swift GC-1A, 1B	11-00311	$230.95

K-SUN LABEL SHOP BEE3 PLUS PRINTER

The K-Sun LABELShop® BEE3+® is the professional's choice for heat-shrink tube identification and general custom labeling of wires, cables, panels, terminals, face plates, tools and equipment. The BEE3+ offers 10 different heat-shrink tube sizes and colors!

Includes:
- K-Sun LABELShop® BEE3+™ Printer with Rubber Base Bumper Guard
- AC or DC Adapter
- Black hard plastic case
- (1)1/2" black on white tape
- (1)1/2" black on white heat-shrink tube cartridge
- Nylon wrist strap
- 6 "AA" Batteries
- Tape liner cutter tool
- Owner's manual

Specifications
- Printer Dimensions: 7.4"(wide) x 2.3"(high) x 8.8"(deep).
- Printer Weight: 1.23 Lbs.
- Printer Construction: High Impact Plastic with Rubber Base Guard.

P/N 11-10505 ..... $249.95

LANDING STRIP LIGHT KITS

P/N 11-07953

P/N 11-07954

P/N 11-07952

P/N 11-07955

An "airfield in a suitcase" solution. A fast-deployed, 40 light kit of our Landing Strip Light. Used for expeditionary, improvised or temporary airfields. Suitable for a 4,000' runway, if placed at typical 200' intervals (max.). Order multiple kits for longer runways. Operators Liability- The system has been designed to be operated under normal visual meteorological conditions for night flying by a pilot with normal vision. The system is utilized at the operator's discretion and risk. The suppliers accept no liability whatsoever whether implied or explicit for any incidents/accidents that may incur. The operator must ensure that trained personnel operate the system and are made fully aware of aviation safety and that the runway remains clear of animals, pedestrians and obstructions at all times during landings and takeoffs. Only competent and currently night rated pilots may use this system. Use by student pilots training for night rating is prohibited.

Landing Strip Light Kit - 40 light basic kit, packed in a Pelican 1660 wheeled equipment case for ease of storage, handling, and set up. 180 lb. (82 kg) per kit.

Description	Part No.	Price
Landing Strip Light Kit with 40 Lights	11-07953	$4,248.00
Landing Strip Light Kit Jr. with 10 Lights	11-07954	$850.00
Landing Strip/Runway Light - Not available for sale to European Union at this time, not RoHS compliant.	11-07952	$112.00
Multifunction Strobe - Flashing or Steady! Use steady mode as a backup light or area light. Turn on the light. If it is not in the mode you want, quickly turn it off/on to change modes.	11-07955	$575.00

RUNWAY LIGHT KITS

2200FT STRIP KIT- Runway Light, 2200 FT. Strip kit, includes: 10 white lamps and 4 green, threshold lamps. The shield has a baked on finish equipped with high illuminating lens. Includes 6" attach pigtail. Operates on standard 115V and uses standard 14 gauge wire.

P/N 05-05199..... $745.00

3200FT STRIP KIT - 3200 Ft. Runway Strip Kit, includes 18 White lamps and 4 Green lamps 10 Watts, Operates on standard 115V, Equipped with long life outdoor bulb, Uses No. 8 or No. 10 standard underground cable(Check w/State & Local building codes), Uses standard 1" wood or steel stake, Maker cone has high luster baked-on finish, High illuminated optical lens, Equipped with 6" pigtail, Constructed of lifetime aluminum components, Preassembled-Strip kits ready for hookup.

P/N 05-05198.....$1,162.00

THRESHOLD KIT - Threshold dual red/green assembly. Designed for threshold installations requiring this type of configuration. Includes 6 red/green lamps and 6" attach pigtail. The shield has a baked on finish equipped with high illuminating lens. Operates on standard 115V and uses standard 14 gauge wire. P/N 05-05201..... $369.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR REPLACEMENT LAMPS & PARTS

FPS PLUS - FLAP POSITIONING SYSTEM

The FPS-Plus is a full service, automatic, flap positioning system. This system operates similar to the "Cessna type flap systems" that many pilots were trained in. The pilot can easily go from one flap position to another with one quick press of the flap button. All flap stop positions (from 0 to 10, your choice) are easily, user programmable. This system is also fairly simple to retrofit it to your "already flying" aircraft.

The Plus feature of this system, allows you to program an elevator trim position for each flap position. Your elevator trim will be automatically adjusted, for every different flap setting that you choose. NO more manual tweaking of the elevator trim is needed for every different flight configuration.

The pilot can now pay more attention to the actual "flying the aircraft", rather than tweaking the correct amount of elevator trim for every different flight configuration. Flying is made much more enjoyable. If you desire to retract the flaps fully, all you have to do, is press the "flap up" button for more than 1 second. The flaps will be automatically retracted to their full up position. The elevator trim is also automatically adjusted to your cruise trim position.

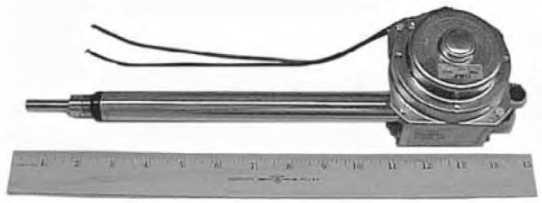
Features: • Full Automatic Flap Positioning with or without "Automatic Elevator Trim Compensation" • Step and Proportional Modes • Designed for +12v and +24v Systems • Compatible with Most Motors and Indicators • Setup is Fully User Programmable • No Limit Switches to Install

Specifications: • The system will operate on +12Vdc or +24Vdc systems. • Maximum amperage for each motor, 10A. • Dimensions (overall) 3" x 5.75" x 1.25" • Footprint 3 x 5.75" • Mounting 2 holes in bottom flanges, 0.156" dia, 5.375" apart • Weight < 4oz.

FPS-Plus Reflex Operation -All features of this system are exactly the same as our FPS-Plus. The exception is, when you press the Flap Up Button for more than a second, it returns the flaps to the zero degree position, not "full up". This is an advantage when initiating a "go-around" and "touch and goes". It is also an advantage when your flaps are in any down position, and you want to return the flaps to the "take-off" position.

FPS-PLUS with Elev. Trim..... P/N 11-02980 ..... $269.00
FPS-PLUS without Elev. Trim..... P/N 11-02981 ..... $189.00
FPS - PLUS REFLEX ..... P/N 11-06440 ..... $284.00

FLAP LINEAR ACTUATOR AS USED ON LANCAIR ES, LANCAIR 300 & 360



The FL1 (FL1-24) ACTUATOR offers a unique standard of performance, durability and reliability. The compact design incorporates wellproven part, like the high efficiency ball screw, a sturdy gear box assembly and fitted with compact high quality DC motor. DC motors are available in both 12 & 24 volt. All to give the best performance with unsurpassed operational life. The actuator is self-locking within the dynamic load range. The actuator is manufactured with the capacity of 1500 N maximum dynamic load and 2200 N is static. The stroke is 150 mm and with speed of 10-15 mm per second.

12 volt actuator.....P/N 05-66223.....$987.00
24 volt actuator.....P/N 05-66224.....$1,094.00

The FL2 LIMIT SWITCH and CONTROLLING UNIT makes it possible to set the actuator for the desires stroke length. It also protects the actuator from running against the mechanical end stops, thereby avoiding damage. It is durable and can be used in most environments. It includes the aluminum profile tube, in which is mounted the protection tube of the actuator. Two limit switch units are attached to the profile tube and can be adjusted to any position. The magnet rod is attached to the end of the adjustment tube and runs in a groove in the profile tube. When the magnet, which is attached to the free end of the rod, approaches the switch unit, the latter is activated. The switches are connected to the control unit, from which the relays disconnect the power to the motor. Dimensions: Overall Length: 210 mm, Extended 360 mm. Width: 86 mm, Motor Diameter: 140mm. P/N 05-66225..... $215.50

FL1A CLEVIS ATTACHMENT – Galvanized clevis head and journal fitting with a quick coupling. It allows simple and rapid attachment of actuator P/N 05-66226.....$32.50

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POSITION LIGHTS AND ANTI-COLLISION LIGHT DISTRIBUTION PATTERNS REQUIREMENTS

An approved anti-collision strobe light system must project light 360° around the aircraft's vertical axis. One or more strobe lights can be used.

An approved anti-collision strobe light system must project light + or - 30° above and below the horizontal plane of the aircraft. One or more strobe lights can be used. The + or - 75° projected light is required since July 18, 1977.

LOCATIONS ON THE AIRCRAFT FOR ANTI-COLLISION STROBE LIGHTS, TO COMPLY TO THE LIGHT PATTERN REQUIREMENTS

VERTICAL FIN
One anti-collision strobe light mounted on the vertical fin will meet the minimum requirements on most aircraft. A half red and half white lens is recommended.

WING TIP
Two wing tip strobe lights that protrude beyond the wing tip.

ENCLOSED WING TIP
Enclosed wing tip anti-collision strobe lights, require a third strobe light on the tail or vertical fin, to fill in the required light envelope. This is an approved anti-collision system.

FUSELAGE
In a fuselage mounted anti-collision strobe light system, a minimum of two strobe lights are necessary to get the required vertical coverage. This is an approved anti-collision system.

ANTI-COLLISION AND POSITION LIGHT REQUIREMENTS, LOCATIONS, & DISTRIBUTION PATTERNS

All aircraft must have an approved anti-collision light and position light system for nighttime operations. The position lights consist of an Aviation Red on the left side, an Aviation Green on the right and an Aviation White taillight (REF. FAR 23.1389).
The anti-collision lighting system is required under FAR PART 91.205(c).
There are different requirements affecting different aircraft. These aircraft are categorized by the date of application for type certificate. Home built aircraft are determined by the date of issuance of the Experimental Operating Limitations.
The different categories are as follows:
Aircraft for which type certificate was applied for after
April 1, 1957 to August 10, 1971:
These anti-collision systems must produce a minimum of 100 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 30° above and below the horizontal plane (REF. FAR 23.1401).
Aircraft for which type certificate was applied for after August 11, 1971 to July 18, 1977:
These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 30° above and below the horizontal plane (REF. FAR 23.1401).
Aircraft for which type certificate was applied for after July 18, 1977:
These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 75° above and below the horizontal plane (REF. FAR 23.1401).
Note: The position lights must be wired independently of anti-collision lights.

INSTALLATION LOCATIONS

WING TIP:
The major difference in systems is the location of the strobe power supplies which can be mounted locally, one in each wing tip, or a single power supply can be mounted in the fuselage. Installation time can be greatly reduced if done in conjunction with an annual or one hundred-hour inspection. Properly installed power supplies and cabling are necessary for the safe operation of Whelen or any light systems.
FUSELAGE:
Fuselage mounted units can be either self-contained with the power supply and lighthead as one unit, or remote lightheads run off a separate power supply. To meet the field of coverage, one must be on the top of the fuselage and one on the bottom.
VERTICAL FIN:
Finally, if applicable, a single anti-collision light can be mounted on the vertical stabilizer. It can be either a self-contained or remote lighthead depending on the aircraft.

HOME BUILT & KIT AIRCRAFT

For Aircraft with Standard Wing Tips – The most widely used system on the market, this provides all of the components for anti-collision and position lights without the need for a taillight. The power supply is mounted in the fuselage and shielded cable is run to the strobe lights. The following is recommended:

Quantity	Model #	Part #	Description
1 each	HDACF	01-0770028-05	Power supply
1 each	A600PG14	01-0790006-00	Wing tip strobe/position/taillight, 14 VDC
1 each	A600PR14	01-0790006-02	Wing tip strobe/position/taillight, 14 VDC
Note: Model 9034001 and 9034002 can replace Model A600 for a LED solution			
1 each	HD60	01-0750206-00	Installation package

For Aircraft with Enclosed Wing Tip Fairings – If the position and strobe lights are mounted under a clear fairing, a third tail strobe is required. The following is recommended:

Quantity	Model #	Part #	Description
1 each	HDACF	01-0770028-05	Power supply
1 each	A650PG14	01-0770054-00	Wing tip strobe/position light, 14 VDC
1 each	A650PR14	01-0770054-02	Wing tip strobe/position light, 14 VDC
Note: Model 7111001 and 7111002 can replace Model A650 for a LED solution			
1 each	A500AV14	01-0770024-00	Tail position/strobe light assembly
1 each	HDT390	01-0750205-00	Installation package

For Aircraft with Enclosed Wing Tip Fairings & Wing Tip Mounted Power Supplies – If position and strobe lights are mounted under a clear fairing, the need for a third tail strobe is required. The following is recommended:

Quantity	Model #	Part #	Description
2 each	A490ATSC	01-0770062-03	Power supply
1 each	A650PG14	01-0770054-00	Wing tip strobe/position/taillight, 14 VDC
1 each	A650PR14	01-0770054-02	Wing tip strobe/position/taillight, 14 VDC
Note: Model 7111001 and 7111002 can replace Model A650 for a LED solution			
1 each	A500AV14	01-0770024-00	Tail position/strobe light assembly, 14 VDC
3 each	HS5	01-0750215-00	Installation package

For strobe system recommendations for certified aircraft and for Whelen/ Aeroflash/ Grimes/ Cessna cross reference lists please visit our website
WWW.AIRCRAFTSPRUCE.COM

WHELEN AVIATION LIGHTING

WHELEN ORION 600 SERIES WINGTIP POSITION / ANTI-COLLISION LED LIGHTS

ORION600 Series of FAA/TSO approved LED aviation lighting. Incorporating the latest state of the art LED Technology available in an all-inclusive package, the ORION600 series eliminates the need for external flasher boxes. Flush mountable for a wide variety of applications with minimal integration and easily retrofitable to the Whelen legacy strobe products. The ORION600 series is quite simply the brightest form of LED Anti-collision and Position lighting available.

Model ORION600 Position/Anti-Collision Lighthead All LED self-contained wingtip mounted Position/Anti-Collision system. Eliminates the need for external power supplies and reduces current draw and provides thousands of hours of operation. FAA TSO-C96c Class II / TSO-C30c Type II & III.

Whelen #	Model #	Color	Voltage	Part #	Price
01-0771733-01	OR6001G	Green	12V	11-11365	$474.00
01-0771733-02	OR6001R	Red	12V	11-11366	$474.00
01-0771733-11	OR6002G	Green	24V	11-11367	$475.00
01-0771733-12	OR6002R	Red	24V	11-11368	$475.00

WHELEN ORION™650 SERIES LIGHTING

Whelen Engineering is proud to introduce the NEW ORION650 Series of FAA/TSO approved LED aviation lighting. Incorporating the latest state-of-the-art LED Technology available in an all-inclusive package, the ORION650 series eliminates the need for external flasher boxes. Flush mountable for a wide variety of applications with minimal integration and easily retrofitable to the Whelen legacy strobe products. The ORION650 series is quite simply the brightest form of LED Anti-collision and Position lighting available. Features: • All LED self-contained wingtip mounted Position/Anti-Collision system. • Fully FAA/TSO-C96a & TSO-C30c Approved • FAR SPEC Certified • Replaceable hard coated polycarbonate lens to maintain maximum light output • Aerodynamic design without sacrificing light output • Exceeds FAA minimum intensity requirements for maximum visibility and increased safety of flight • Enviornmentally tested and certified to RTCA/D0-160G standards. FAA TSO-C96a Class III/TSO-C30c Type II.

Model No..	Description	Part No.	Price
OR6501G	Wingtip PTA Green, 12V	11-11966	$433.00
OR6501R	Wingtip PTA Red, 12V	11-11967	$433.00
OR6502G	Wingtip PTA Green, 28V	11-11968	$492.00
OR6502R	Wingtip PTA Red, 28V	11-11969	$429.00

WHELEN ORION™ 650E SERIES LIGHTING

All LED self-contained wingtip mounted Position/Anti-Collision system. Eliminates the need for external power supplies and reduces current draw and provides thousands of hours of operation.

• Fully FAA/TSO-C96a & TSO-C30c Approved

FAR SPEC Certified • Exceeds FAA minimum intensity requirements for maximum visibility and increased safety of flight • Enviornmentally tested and certified to RTCA/D0-160G standards.

Model No..	Description	Part No.	Price
OR6501GE	Embedded PTA Green, 12V	11-11971	$433.00
OR6501RE	Embedded PTA Red, 12V	11-11972	$433.00
OR6502GE	Embedded PTA Green, 28V	11-11973	$433.00
OR6502RE	Embedded PTA Red, 28V	11-11974	$433.00

WHELEN ORION™ 500 SERIES LIGHTING

All LED self-contained wingtip mounted Position/Anti-Collision system. Eliminates the need for external power supplies and reduces current draw and provides thousands of hours of operation.

• Fully FAA/TSO-C96a & TSO-C30c Approved • FAR SPEC Certified • Replaceable hard coated polycarbonate lens to maintain maximum light output • Aerodynamic design without saacrificing light output • Exceeds FAA minimum intensity requirements for maximum visibility and increased safety of flight • Enviornmentally tested and certified to RTCA/D0-160G standards.

Model No..	Description	Part No.	Price
OR5001V	Tail PTA Light White, 12V	11-11975	$389.00
OR5002V	Tail PTA Light White 28 V	11-11977	$397.00

WHELEN PARMETHEUS LED REPLACEMENT LANDING LIGHTS

Parmetheus PAR36/46 LED lights are a drop-in replacement for outdated Halogen lamps. PMA Approved, lightweight, low-current and moisture resistant, they provide stable light output for thousands of operating hours. LED lighting is the ideal technology for aviation applications. Whelen LED lights are time and field-tested for reliability and long-life performance under the tough conditions required by Fire, Emergency, DOT and Law Enforcement professionals around the world. PMA Approved

Features:

- Direct replacement for outdated PAR36 Halogen and HID lamps.
- First commercially available PAR36 LED for Aviation applications.
- Stable light output for thousands of trouble-free operating hours.
- Available in Landing and Taxi versions.
- Convenient "Drop In" design for ease of installation: Power wiring attaches to brass screw terminals; Weight is virtually identical to previous PAR36 lamps; Assembly design includes clocking notch.
- Three year warranty, Made in the U.S.A

Specifications:

- Model: PLED2L
- Type: Landing (Spot Light, 10 degree)
- Amps: .6
- Volts: 28 VDC
- Size: 4.28" Round x 1.75" Face to Screw terminal

LED PAR 36 Landing Light 28V.....P/N 11-08292 .....$228.95
LED PAR 36 Taxi Light 28V .....P/N 11-08293 .....$228.95
LED PAR 36 Landing Light 14V.....P/N 11-08294 .....$228.95
LED PAR 36 Taxi Light 14V .....P/N 11-08295 .....$228.95
LED PAR 46 Landing Light 14V.....P/N 11-09523 .....$298.95
LED PAR 46 Landing Light 28V.....P/N 11-09524 .....$337.00

WHELEN PARMETHEUS PLUS REPLACEMENT LANDING LIGHTS

Parmetheus Plus PAR36/46 LED lights are a drop-in replacement for outdated Halogen PMA pending. Lightweight, low-current and moisture resistant, they provide stable light output for thousands of operating hours. These PAR 36 LED lights are 40% brighter output than the original Parmetheus Series assemblies, and the PAR 46 are 80% brighter. LED lighting is the ideal technology for aviation applications. Whelen LED lights are time and field-tested for reliability and long-life performance under the tough conditions required by Fire, Emergency, DOT and Law Enforcement professionals around the world. STC-PMA Pending.

Description	Part No.	Price
PAR 36 14V Landing	11-12976	$240.95
PAR 36 14V Taxi	11-12977	$240.95
PAR 36 28V Landing	11-12978	$240.95
PAR 36 28V Taxi	11-12979	$240.95
PAR 46 14V Landing	11-12980	$309.00
PAR 46 28V Landing	11-12981	$309.00

MICROBURST SERIES LIGHTING FROM WHELEN

LED Wingtip and Tail Lighting for Experimental and Light Sport Aircraft. MB3(Red or Green) .21 lbs., .45 amp (avg). Forward facing Wingtip Nav, with CometFlash 180° LED-Strobe and rear facing white Nav. MB2(Red or Green) .20 lbs., .40 amp (avg). Forward facing Wingtip Nav with MB2G Green CometFlash 180° LED-Strobe. MB1WT White, .15 lbs, .35 amp (avg). Nav taillight with CometFlash 180° LED-Strobe. Utilizes same mounting as all (A500/A555 Style).

Description	Part No.	Price
MicroBurst I MB1WT Single Taillight	11-08472	$199.00
MicroBurst III Kit MB3K 1 MB3R (R) and 1 MB3G (G)	11-08473	$428.00
MicroBurst II Kit MB2K 1 MB2R (R) and 1 MB2G (G)	11-08474	$299.95
MicroBurst II with Taillight Kit MB2KWT 1 MB2R (R) and 1 MB2G (G) plus 1 MB1WT Taillight	11-08475	$498.00

71685 RECOGNITION/LANDING LIGHT

71685 Series LED Recognition/Landing light assembly. Dimensions H x W x D: 2.07" (53mm) x 3.64" (93mm) x Depth: 0.979" (25mm)

14V ..... P/N 11-11189 .....$124.75
28V ..... P/N 11-11190 .....$117.75

EL

7108051

MODEL 71080 SERIES LED BEACON FOR ROTORCRAFT, (150 EFF. CD) (14 VDC & 28 VDC)

71080 series LED beacons are FAA TSO compliant self-contained LED anti-collision lights (Ref. Class I - 150 effective candlepower). They are designed to replace a range of products. Refer to models and descriptions below. ELECTRICAL: Models ending: 8001, 8004, 8005, 8014, 8015, 8020, 8051, 8055: 12" Flying Leads. Models ending: 8007, 8017, 8008, 8018: MS3102R10SL-3P Connector

MECHANICAL: Models: 8004, 8014, 8008, 8018are designed to replace existing beacons utilizing a 5-Hole mounting pattern on a 4.656 diameter bolt circle (Whelen 70285 series/7090501 series or 70900 with A440 adapter).

Models: 8005, 8015, 8007, 8017are 3 ¾" opening designed to fit inside an A440 mounting adapter, mounting holes to fit in place of rotating beacons, Whelen Model HRCFA, or 7090004, -05 series LED beacons

SPECIFICATIONS: • Current: 0.87 amps average, 3.0 amps peak • Weight: 0.65 lbs. (295gm) (8001 & 8051) • Lens: Clear polycarbonate • Dimensions: 2.6" (66mm) diameter, exposed height, 3.74" (95mm) (8001 & 8051)

Model #	Approvals	Description	Part #	Price
7108001	FAA TSO-C96a Class I (150 ecp)	LED red, 28 VDC Rotocraft (no adapter)	11-06173	$547.00
7108001		LED red, 28 VDC & Mt.	11-06174	$567.00
7108051		LED red, 14 VDC & Mt.	11-07656	$699.00
7108004		LED red, 28 VDC & 5-Hole mount	11-07687	$643.00
7108014		Same as 8004, lower Mt	11-07688	$643.00
7108055		LED Red, 14 VDC, 3.75" adapter	11-09909	$618.00
7108005		LED red, 28 VDC, 3.75" adapter	11-07689	$637.00
7108015		same as 8005, lower Mt	11-07690	$665.00
7108007		LED red, 28 VDC, 3.75" adapter	11-07691	$665.00
7108017		same as 8007, lower Mt.	11-07692	$665.00
7108008		LED red, 28 VDC & 5 hole mount	11-07693	$629.00
7108018		same as 8008, lower Mt.	11-07694	$665.00

MODEL 90520 SERIES LED FLASHING BEACON (RED & WHITE LEDS)

9052051

90520 series LED beacons are FAA TSO compliant self-contained LED anti-collision lights (Ref. Class I - 100 effective candlepower). They are designed to replace strobe lightheads as small as the A470A with available models to replace HR self-contained beacons (HRCFA) or our legacy 70900 LED beacon. Mounting plate included with assembly. Refer to models and descriptions below.

ELECTRICAL: Models ending: 2001, 2004, 2005, 2014, 2015, 2051, 2055: 12" Flying Leads. Models ending: 2007, 2017, 2008, 2018: MS3102R10SL-3P Connector

MECHANICAL: Models: 2004, 2014, 2008, 2018 are designed to replace existing beacons utilizing a 5 Hole mounting pattern on 4.656 diameter bolt circle (Whelen 70285 series / 7090501 series or 70900 with A440 adapter). Models: 2005, 2015, 2007, 2017 are 3 ¾" opening designed to fit inside an A440 mounting adapter, mounting holes to fit in place of rotating beacons, Whelen model HRCFA, or 7090004, -05 series LED beacons

SPECIFICATIONS: • Current: 0.67 amps Average, 3.0 amps Peak • Weight: 0.65 lbs. (295gm) (-01 & -51) • Lens: Clear polycarbonate • Dimensions: 2.6" (66mm) Diameter, Exposed Height, 3.74" (95mm) (-01 & 51)

Model #	Approvals Pend.	Description	Part No.	Price
9052001	FAA TSO-C96a Class I	LED red/white, 28 VDC & mount	11-07615	$567.00
9052051		LED red/white, 14 VDC & mount	11-07616	$538.00
9052004		LED red/white, 28 VDC & 5 hole mount	11-07617	$593.00
9052014		LED red/white, 28 VDC & 5 lower mount	11-07618	$543.00
9052005		LED red/white, 28 VDC, 3.75" adapter	11-07619	$618.00
9052055		LED Red/White, 14 VDC 3.75" adapter	11-09908	$609.00
9052015		same as 9052005, lower mount	11-07620	$637.00
9052007		LED red/white, 28 VDC, 3.75" adapter	11-07621	$597.00
9052017		same as 9052007, lower mount	11-07622	$620.00
9052008		LED red/white, 28 VDC & 5 hole mount	11-07623	$543.00
9052018		LED red/white, 28 VDC & 5 lower mount	11-07624	$543.00

MODEL 71055 SERIES LED BEACON

71055 series beacons are FAA TSO compliant self-contained LED anti-collision lights. They are designed to replace existing quartz halogen flasher beacons installed as original equipment on single engine Cessna's from 1967 and later (contact factory for details). They can also replace remote mounted strobe lights (ref. Whelen A470 series) allowing for removal of the strobe power supply. Internal mounting plate provided with choice of mounting holes to retrofit most existing mounting patterns. STC SA615EA approved. SPECIFICATIONS: • Power Consumption: 01-0771055-00 - 1.2 amps Avg. / 11-04542 - 0.6 amps Avg. • LED Color: Aviation RED • Lens: Clear Polycarbonate • Weight: 0.52 lbs. (236gm) • Exposed Height: 3.09" (78mm) • Exposed Diameter: 2.60" (66mm) FAA TSO-C96a Class III

Model #	Description	Part #	Price
7105500	LED beacon 14 VDC, red	11-04541	$498.00
7105501	LED beacon 28 VDC, red	11-04542	$498.00
38-0250885-00	Replacemnt Lens Gasket	11-10407	$7.80

NOTE: All non-FAA approved Whelen parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

MODEL 90088 SERIES LED ANTI-COLLISION LIGHT

90088 series is a self-contained LED anti-collision beacon. It's solid-state circuitry and LED light source obsolete the "old style" mechanical oscillating beacons as well as the Whelen 90044 series quartz halogen flashing beacons. Benefits include no moving parts, no EMI/RFI, no inrush current spikes and crisp on/off cycles. There are several models available to provide compatibility with existing mounting patterns and profiles, thus eliminating the need to alter the aircraft. SPECIFICATIONS: • Power Consumption: 0.45 amps @ 28 VDC • LED Color: Aviation RED • Weight: 1.8 lbs (816gm) (unless otherwise noted) • Exposed Height: 2.70" (69mm) • Lens Color: Clear glass • Replaces: Whelen: 90044 Series and Grimes: G9950-( ), 40-0100-( ), 30-2140-( ), 40-0117-( ), 40-0127-( ), 30-2647-( ) To determine the model required for replacement, the following information is needed: upper or lower mounting, number of mounting holes (5 or 8), weight & position installed. Beacons installed on the rudder. Top replacement on Gulfstream II & III require a 9008812 in conjunction with the optional 16 hole mounting plate, P/N 06-170618-00. FAA TSO-C96a Class III

Model #	Description	Part #	Price
9008811	Lower, 5 hole, standard assembly, cable pigtail	11-05004	$1,093.00
9008812	Upper, 5 hole, standard assembly, cable pigtail	11-05005	$1,093.00
9008813	Upper, 5 hole, 2.25 lbs. rudder mount (Citations)	11-07629	$1,086.00
9008814	Upper, 5 hole, 2.25 lbs. cable pigtail (Beech Barons)	11-07630	$1,086.00
9008815	Lower, 5 hole, (MS27508E10A-5P connector)	11-07631	$1,086.00
9008816	Upper, 5 hole, (MS27508E10A-5P connector)	11-07632	$1,086.00
9008817	Lower, 5 hole, 2 drain holes (Hawker 800)	11-07633	$1,086.00
9008818	Upper, 8 hole, 1.9 lbs, cable pigtail	11-07634	$1,086.00
9008819	Lower, 8 hole, 1.9 lbs, cable pigtail	11-07635	$1,096.00

MODEL 90350 SERIES SELF-CONTAINED LED GROUND RECOGNITION LIGHT ASSEMBLY

90350 series is a self-contained all LED ground recognition light assembly. The design is intended to provide a solution to the needs for ground recognition lighting on a wide variety of aircraft. All current source and flasher circuitry is contained within the base plate. Unit is flush mounted to aircraft surface eliminating the need for large cutouts in the aircraft structure. Item ships with flying leads. SPECIFICATIONS: • Power Consumption: 0.28 amps Avg. @ 28 VDC • LED Colors: Aviation Red • Lens: Aviation Red, Polycarbonate • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.48" (38mm) • Exposed Width: 1.64" (42mm) • Exposed Length: 4.61" (117mm)

Model #	Description	Part #	Price
9035000	Red, 28 VDC	11-06172	$279.95

MODEL HRCFA SERIES

HRCFA series is a self-contained CometFlash® strobe anti-collision light. The unique polycarbonate optic lens and reflector design re-directs stray light rays into the horizontal plane to provide maximum 360° of uniform light coverage. Available in three different lens colors, aviation red, aviation white and split aviation red/white and in radio-shielded configurations. FAA approved as a direct replacement for any rotating beacon that uses a 3-3/4" (95mm) dia. mounting hole. Can be installed in the vertical fin or the fuselage. Fuselage installation requires the A440 mounting adapter. Operates between 10 to 30 VDC. SPECIFICATIONS: • Weight: 1.5 lbs. (680gm) • Height: 7.25" (184mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
HRCFAR	FAA/PMA	Std. assy, red lens	11-16214	$449.00
HRCFAW	FAA/PMA	Std. assy, white lens	11-16212	$438.00
HRCFAS	FAA/PMA	Std assy, split red/white	11-16216	$438.00
HRCFADR	FAA/PMA	Radio-shielded, red lens	11-07625	$559.00
HRCFADW	FAA/PMA	Radio-shielded, white lens	11-07626	$568.00
HRCFADS	FAA/PMA	Radio-shielded, split red/white	11-07627	$565.00

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WHELEN MODEL 90044 SERIES

5-Hole

90044 series self-contained, 150 watt, quartz halogen flashing anti-collision light. Factory installed on Lear 31, Falcon 900 and Cessna Citation X. It is also a direct replacement for oscillating beacons on most corporate aircraft.
SPECIFICATIONS: • Weight: 1.6 lbs. (726gm) to 2.5 lbs. (1134gm) • Height: 5.5" (140mm) • Power Consumption: 3.25 amps @ 28 VDC • Replaces: G9950-( ), 40-0100-( ), 30-2140-( ), 40-0117-( ), 40-0127-( ), 30-2647-( )
To determine model required for replacement, the following information is needed: Lens color (red or white), upper or lower mounting location, number of mounting holes (5, 8, or 9), weight and position installed. Beacons installed on the rudder.Top replacement on GII and GIII require 9004401 or 9004402 in conjunction with the 16 hole mounting plate, P/N 06-170618-00.

Model #	Approvals	Remarks	Lens	Mount	Base	Part #	Price
9004401	FAA TSO-C96a	Std. Assy	red	upper	5 hole	11-03293	$832.00
9004402	FAA TSO-C96a	Std. Assy	white	upper	5 hole	90044-02	$910.00
9004403	FAA TSO-C96a	Std. Assy	red	lower	5 hole	90044-03	$910.00
9004404	FAA TSO-C96a	Std. Assy	white	lower	5 hole	90044-04	$910.00
9004417	FAA TSO-C96a	Std. Assy	red	upper	8 hole	90064-17	$910.00
9004418	FAA TSO-C96a	Std. Assy	white	upper	8 hole	90044-18	$910.00
9004419	FAA TSO-C96a	Std. Assy	red	lower	8 hole	90044-19	$910.00
9004420	FAA TSO-C96a	Std. Assy	white	lower	8 hole	90044-20	$910.00
9004435	FAA TSO-C96a	2.50 lbs. (Westwind)	red	upper	8 hole	90044-35	$910.00
9004457	FAA TSO-C96a	2.25 lbs., cable pigtail (Beech Barons)	red	upper	5 hole	11-01968	$895.00

MODEL 90033 SERIES SELF-CONTAINED LIGHT ASSEMBLIES

2-Hole

90033 series self-contained, 150 watt, quartz halogen flashing anti-collision light which is factory installed on Beechcraft. It is also a direct replacement for oscillating beacons on most corporate aircraft.
SPECIFICATIONS: • Weight: 0.6 lbs.(272gm) to 0.9 lbs. (408gm) • Height: 4.4" (112mm) • Power Consumption: 5.5 amps @ 28 VDC

Model #	Approvals	Remarks	Lens	Mount	Base	Part #	Price
900331	FAA TSO-C96a	18" cable, no connector	red	lower	2 hole	90033-1	$548.00
900332	FAA TSO-C96a	18" cable, no connector	white	lower	2 hole	90033-2	$523.00

FOR ADDITIONAL 90044 AND 90033 SERIES LIGHTS PLEASE CALL OR VISIT OUR WEBSITE AT WWW.AIRCRAFT SPRUCE.COM

MODEL SACF SERIES - SACF series self-contained Comet-Flash strobe anti-collision light which utilizes the same power supply & housing as the model HRCFA. It uses an aviation white glass lens only, ideal for agricultural applications where chemicals are used. Because the lens has no optics built-in, it produces 300 effective candlepower. It uses a 3-3/4" dia. mounting hole. Fuselage installation requires the A440 mounting adapter. Operates between 10 to 30 VDC. SPECIFICATIONS: • Weight: 1.5 lbs. (680gm) • Height: 5.50" (140mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
SACF	FAA/PMA	Aviation white lens	11-03262	$579.00

MODEL A440 MOUNTING ADAPTER - A440 mounting adapter is for fuselage installations for the HRCFA series and the SACF series.

Model #	Approvals	Description	Part #	Price
A440	FAA/PMA	Mounting adapter	11-03699	$21.90

MODEL 70509 SERIES - 70509 series self-contained halogen flashing anti-collision light with the same mounting pattern as the factory installed beacon on single engine Cessna's 1967 & later. Available in three different lens colors, Aviation red, aviation white and split aviation red/white. When used in conjunction with the model 50519 mounting adapter, it can replace rotating beacons with the 3-3/4" (95mm) dia. mounting hole. Note: Not recommended for installation on helicopters or twin engine aircraft. SPECIFICATIONS: • Weight: 0.27 lbs. (122gm) • Height: 3.75" (95mm) • Diameter: 2.65" (67mm) • Power Consumption: 2.7 amps @ 14 VDC, 1.3 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
7050900	FAA TSO-C96a	14V, red lens	11-03235	$129.95
7050901	FAA TSO-C96a	14V, white lens	11-03268	$129.95
7050902	FAA TSO-C96a	14V, red/white lens	11-03231	$129.95
7050903	FAA TSO-C96a	28V, red lens	11-03276	$129.95
7050904	FAA TSO-C96a	28V, white lens	11-05108	$129.95
7050905	FAA TSO-C96a	28V, red/white lens	11-03292	$129.95
7050907	FAA TSO-C96a	28V, red lens w/ mask, Cessna single engine	11-07628	$135.95
50519001	—	option mounting adptr	11-03238	$65.75

MODEL A470A SERIES - A470A series remote strobe light assembly is compatible with all Whelen power supplies. It can be installed on the fuselage or the vertical fin. The unique polycarbonate optic lens and reflector design, re-directs stray light rays into the horizontal plane to provide the maximum 360° of uniform light coverage possible. Available in three different lens colors, aviation red, aviation white and split aviation red/white. Available in radio-shielded configurations. All assemblies require either the model H102 or H103 mounting adapter. SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Exposed Height: 3.75" (95mm) • Diameter: 2.5" (64mm)

Model #	Approvals	Description	Part No.	Price
A470AR	FAA/PMA	Standard assembly, red lens	11-03273	$138.75
A470AW	FAA/PMA	Standard assembly, white lens	11-03277	$134.99
A470AS	FAA/PMA	Std assy, split red/white lens	11-03259	$138.75
A470ADR	FAA/PMA	Radio-shielded asy, red lens	11-03714	$187.75
A470ADW	FAA/PMA	Radio-shielded assy, white lens	11-03291	$199.85
A470ADS	FAA/PMA	Radio-shielded assy, split red/white lens	11-04976	$183.75

H102
H103

MODELS H102 & H103 - Designed for the model A470A or model A450 series remote strobe lighthead assemblies. The model H102 allows flush mounting of the lighthead to the skin of the fuselage or the vertical stabilizer on later model Cessna Single engines. The H103 is designed for strobe assemblies to be installed in the standard 3-3/4" (95mm) dia. rotating beacon mounting hole.

Model #	Approvals	Description	Part No.	Price
H102	FAA/PMA	Flush mount adapter	11-03243	$11.75
H103	—	Rotating beacon mount adapter	11-03284	$65.85

MODEL A450 SERIES - A450 series remote strobe light assembly is compatible with all Whelen power supplies. It can be installed on the fuselage or the vertical fin. The Pyrex® Glass lens (clear only) makes the assembly suitable for use in severe vibration, chemical and moisture conditions (i.e. agricultural aircraft). Requires either the model H102 or model H103 mounting adapter. SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Exposed Height: 2.25" (57mm) • Diameter: 2.5" (64mm)

Model #	Approvals	Description	Part No.	Prices
A450	FAA/PMA	Standard assembly, clear lens	11-03280	$212.95
SA418-1		Gasket for A450	11-03690	$8.75

MODEL A650 SERIES - Converts W1285 position lights into a position/anti-collision system by removing the existing retainer & replacing it with the A650 assembly. Radio-shielded version available. SPECIFICATIONS: • Weight: 0.2 lbs. (91gm) • Exposed Height: 2.4" (61mm)

Model #	Approvals	Description	Part No.	Price
A650	FAA/PMA	Standard unit	11-03215	$124.80
A650D	FAA/PMA	Radio-shielded	11-07604	$176.75

MODEL A625 SERIES - Many different applications. It can be used for aircraft with tip-tanks with enclosed position lights (under a fairing), or as an add-on strobe on the wing or the tail. Available in a radio-shielded version. SPECIFICATIONS: • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.7" (43mm)

Model #	Approvals	Description	Part No.	Price
A625	FAA/PMA	Standard unit, clear lens	11-03228	$135.99
A625D	FAA/PMA	Radio-shielded, clear lens	11-03659	$159.75
A625DR	—	Radio-shielded, red lens	11-07607	$341.00
7005815	—	Radio-shld, 3/c cbl, 12" grnd braid	11-07608	$183.75
7005816	—	Radio-shld, 24" 3/c cbl, w/MS conn	11-07609	$231.95

MODEL 70821 SERIES - A remote streamlined strobe light assembly. Easily mounted on the wing tip for anti-collision or on the vertical fin for ground recognition. It is recommended for the wing tips on Cessna single engine aircraft 1970-71. It can be added as a low profile ground recognition light when mounted on the vertical fin or fuselage. A mounting adapter plate facilitates mounting. SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Exposed Height: 1.8" (46mm) • Length: 3.5 (89mm) • Width: 1.8" (46mm)

Model #	Approvals	Description	Part No.	Price
7082100	—	Standard unit, clear lens	11-03287	$236.95
7082101	—	Radio-shielded, clear lens	11-70821-01	$265.95
7082103	—	Radio-shielded, red lens	11-70821-03	$430.00

WHELEN 90028 SERIES LIGHTHEADS

90028 series wing tip strobe light used on Beech aircraft with commonality wing tip 1974 & later. It is a direct replacement for 30-0467-( ), 30-1331-( ) and the 30-1467-( ) series.
NOTE: Do not use with Cannon plug. Light assembly, 45° mounting bracket. Weight: 0.4 lbs. (181gm)• Exposed Height: 1.87" (48mm)• Length: 4.37" (111mm)• Depth: 2.25" (57mm)

P/N 11-00712 ..... $165.95

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MODEL 90340 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY (FOR COMPOSITE WINGTIP STRUCTURE) - Same as 90340

series with addition of 3 feet of braided bonded protection. SPECIFICATIONS: • LED Navigation Light Power Consumption: 0.5 amps @ 14 VDC, 0.25 amps @ 28 VDC • Weight: 0.60 lbs. (272gm) 14 VDC, 0.65 lbs. (295gm) 28 VDC • Exposed Height: 2.70" (69mm) • LED Colors: Aviation Red, Aviation Green & Aviation White 1.1 lbs. (499gm) • Lens: Clear RFI coated glass: strobe, Clear Polycarbonate: Navigation Lights

Model #	Approvals	Description	Part No.	Price
9034001	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 14V	11-05625	$433.00
9034002	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 14V	11-05626	$436.00
9034003	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 28V	11-05627	$466.00
9034004	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 28V	11-05628	$466.00
9037501	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 28V	11-06598	$675.00
9037502	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 28V	11-06599	$675.00

MODEL 71110 SERIES STROBE ANTI-COLLISION/LED POSITION LIGHT ASSEMBLY - 71110 series is a wing tip mounted strobe anti-collision/position light assembly utilizing LED's for the forward position lights. The LED's provide a significant reduction in current draw over conventional position light bulbs. The strobe light lens assembly is radio shielded for maximum EMI/RFI protection. Direct replacement (exact footprint) for the Whelen Model A650PG/PR series without replacing the current strobe power supply. Navigation light portion is wired with flying leads. SPECIFICATIONS: • LED Colors: Aviation Red, Aviation Green • LED Navigation Light Power Consumption: 0.25 amps @ 14 VDC or 28 VDC • Weight: 0.45 lbs. (204gm) 14 VDC, 0.50 lbs. (227gm) 28 VDC • Exposed Height: 2.70" (69mm) • Lens: Clear RFI coated glass: strobe, Clear Polycarbonate: Navigation Lights

Model #	Approvals	Description	Part #	Price
7111001	FAA TSO-C96a / TSO-C30c Type II	Pos Grn, 14 V	11-05630	$299.00
7111002	FAA TSO-C96a / TSO-C30c Type I	Pos red, 14 V	11-05633	$299.00
7111003	FAA TSO-C96a / TSO-C30c Type II	Pos Grn, 28 V	11-05635	$298.95
7111004	FAA TSO-C96a / TSO-C30c Type I	Pos red, 28 V	11-05636	$299.95

MODEL A500A SERIES - A500A series combination strobe/tail navigation light used when the wing tip anti-collision lights are mounted in an enclosure and can't provide 360º of strobe coverage. It is a direct replacement for the standard tail position light. Available in a radio-shielded version. Voltage (14 or 28) and mounting (horizontal or vertical) must be specified when ordering. SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Exposed Height: 1.7" (43mm) • Diameter: 1.5" (38mm) FAA/PMA, FAA TSO-C30b

Model #	Description	Part No.	Price
A500AV14	Vert mnt, 14V	11-03223	$198.85
A500AV28	Vert mnt, 28V	11-03255	$208.95
A500AH14	Horz. mnt, 14V	11-03249	$201.95
A500AH28	Horz. mnt, 28V	11-03264	$198.85
A500AVD1	Vert mnt, 14V, radio-shielded	11-03721	$273.95
A500AVD2	Vert mnt, 28V, radio-shielded	11-06407	$261.95
A500AHD1	Horz. mnt, 14V, radio-shielded	11-03717	$273.95
A500AHD2	Horz. mnt,, 28V, radio shielded	11-04281	$286.95
A500ASP2	Vert mnt, 28V, 50" cables, no Connectors	11-03720	$284.95
A500ABV1	Beech Special 14V, MS connector	11-03715	$313.00
A500ABV2	Beech Special 24V, MS connector	11-03716	$330.00

MODEL 90377 SERIES LED POSITION LIGHT ASSEMBLY - 90377 series is a wing tip mounted position light assembly utilizing LED's for both the forward & tail position lights, eliminating the need for a tail mounted position light. The LED's provide a significant reduction in current draw over conventional position light bulbs. Direct replacement (exact footprint) for the Whelen Model A675PG/PR series. Single set of flying leads operates both forward & tail nav on 28 VDC version, and one set each of flying leads for the forward & tail nav on the 14 VDC version. SPECIFICATIONS: • LED Navigation Lights Power Consumption: 0.5 amps @ 14 VDC, 0.25 amps @ 28 VDC • LED Colors: Aviation Red, Aviation Green and Aviation White • Weight: 0.35 lbs. (159gm) • Exposed Height: 1.08" (27mm) • Exposed Width: 1.87" (47mm) • Exposed Length: 5.69" (145mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
9037701	FAA TSO-C30c Types II & III	Position grn, 14 V	11-06175	$281.95
9037702	FAA TSO-C30c Types I & III	Position red, 14 V	11-06176	$281.95
9037703	FAA TSO-C30c Types II & III	Position grn, 28 V	11-06177	$271.95
9037704	FAA TSO-C30c Types I & III	Position red, 28 V	11-06178	$271.95

MODEL 71105 SERIES LED POSITION LIGHT ASSEMBLY - 71105 series are fully FAA TSO compliant forward position lights. LED's provide a significant reduction in electrical current draw over conventional light bulbs. The 71105 is our latest design and lowest priced forward position light. Direct replacement for Whelen Model W1285 series (Version STC'd on Learjet Aircraft). SPECIFICATIONS: • LED Navigation Light Power Consumption: 0.25 amps @ 14 VDC or 28 VDC • LED Colors: Aviation Red, Aviation Green • Weight: 0.20 lbs. (91gm) 14 VDC, 0.25 lbs. (113gm) 28 VDC • Exposed Height: 2.70" (69mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
7110501	FAA TSO-C30c Type II	Position grn, 14V	11-05629	$205.95
7110502	FAA TSO-C30c Type I	Position red, 14V	11-05631	$199.85
7110503	FAA TSO-C30c Type II	Position grn, 28V	11-05632	$199.75
7110504	FAA TSO-C30c Type I	Position red, 28V	11-05634	$199.75

WHELEN LED TAIL POSITION LIGHTS 71554 SERIES

Whelen 71554 Series LED Tail Position Lights are an exact footprint for Whelen Models A555A and 71011 Tail Lights.

Description	Approvals (Pending)	Part No.	Price
7155401 Horizontal Mount, 28 VDC	FAA TSO-C30c Type III	11-10682	$218.95
7155402 Vertical Mount, 28 VDC	FAA TSO-C30c Type III	11-10683	$218.95
7155403 Vertical Mount (Cessna), 28 VDC	FAA TSO-C30c Type III	11-10684	$218.95
7155411 Horizontal Mount, 14 VDC	---------	11-10568	$219.95
7155412 Vertical Mount (Cessna), 14 VDC	---------	11-10686	$218.95

MODEL 71011 SERIES LED TAIL POSITION LIGHTS - 71011 series are LED tail position lights designed to replace the existing "old style" tail lights typically seen mounted on most general aviation, corporate, and helicopter applications. They have all the advantages associated with using LED's as a light source, improved reliability, and reduced operating costs. Now offered with a 14 Volt version.

SPECIFICATIONS: • Power Consumption: 0.5 amps @ 14 VDC; 0.3 amps @ 28 VDC • LED Color: Aviation White • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.36" (35mm) • Mounting Hole Pattern: 1.75" (45mm)

Model #	Approvals	Description	Part #	Price
7101102	FAA TSO-C30c Type III	Vert 28V	11-05013	$254.95
7101103	FAA TSO-C30c Type III	Horz. 28V	11-05014	$248.95
7101112	FAA TSO-C30c Type III	Vert 14V	11-10686	$218.95
7101113	FAA TSO-C30c Type III	Horz. 14V	11-10568	$219.95

MODEL A555A SERIES - A555A series tail mounted position light which uses a 25 watt halogen lamp. The suffix "V" or "H" in the part number designates the aircraft mounting screw locations in respect to the light shield. "V" designates vertical mounting and "H" indicates horizontal mounting on the aircraft. Supplied with a 2 position "AMP" connector. Specify 14 VDC or 28 VDC. Replaces the brand "G" A2064 series.

SPECIFICATIONS: • Exposed Height: 1.4" (36mm) • Mounting Diameter: 1.06" (27mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC • Weight: 0.1 lbs. (45gm)

Model #	Approvals	Description	Part #	Price
A555AV14	FAA TSO-C30b Type III	Vert, 14 VDC	11-03256	$152.75
A555AV28	FAA TSO-C30b Type III	Vert, 28 VDC	11-03267	$155.99
A555AH14	FAA TSO-C30b Type III	Horz., 14 VDC	11-03270	$149.75
A555AH28	FAA TSO-C30b Type III	Horz., 28 VDC	11-03275	$152.75

MODEL 50626 SERIES STROBE TUBE ASSEMBLY - 50626 series strobe tube assemblies are used with the following model numbers listed in chart below:

Model #	Description	Used on	Part No.	Price
5062600	6"	Model 9011102	11-07681	$74.99
5062601	6" w/Grom	Model 9034000 - 07, 20, 21 Model 7111001 - 04	11-07682	$74.75
5062602	12.5" w/Grom	Model 9034008, 09	11-07683	$74.85
5062603	2" w/Grom	Model 9037501, 02	11-07685	$71.75

A610

A612

MODELS A610 & A612 - A610 flash tube and A612 glass lens are used for installing wing tip strobes in single engine Cessna's 1972 and later. The existing position light retainer is modified to accommodate the lens, and the flash tube is mounted directly behind. The unique magnifying design of the A612 lens increases the light intensity by two to three times in the horizontal plane. These items may be used for custom installations or as spare parts for existing light assemblies. The A612 lens is available in Aviation Red and an RFI coated version. Lenses meet material requirements of MIL-C-7989B Class B.

SPECIFICATIONS: • Drawing Number A612: 90005 • A610 Flash Tube Weight: 0.09 lbs. (41gm) • A612 Lens Weight: 0.08 lbs. (36gm)

Model #	Approvals	Description	Part No.	Price
A610	FAA/PMA	Standard unit, 6" leads	11-03213	$71.75
A610M	FAA/PMA	Molex connector, 6" leads	11-03734	$74.90
5027601	FAA/PMA	14" leads	11-07611	$68.75
5027602	FAA/PMA	12.5" leads	11-07612	$68.75
A612	FAA/PMA	Standard clear lens	11-03222	$32.75
A612D	—	Radio-shielded, clear lens	11-03735	$114.75
A612DR	—	Radio-shielded, red lens	11-07614	$257.95

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HOW TO CHOOSE A POWER SUPPLY AND ABOUT COMETFLASH®

The power supply needed depends on the application, and the mounting location. Model HDACF Series is a fuselage mounted power supply that will power two or three lights. Model A490ATSC Series is designed for installation adjacent to the strobe lighthead and will power one light assy. Model A490TCF Series is the most economical power supply when adding only one light. It mounts adjacent to the strobe lighthead assembly (not legal for light output with red strobe light). Most other Whelen power supplies are application specific, call for details. Unless otherwise noted, all power supplies are CometFlash®. A major advancement in the field of safety lighting. By pulsing the flash tube four times in rapid succession, the effective "on-time" of the strobe is increased from 2/1000 of a second to 4/10 of a second. This increases your airplane's visibility.

MODEL HDACF SERIES - HDACF series provides simultaneous flashing, alternate flashing or both. It will operate one, two or three strobe lightheads. Operating the wing tip strobes in the alternating mode will provide an accumulated 42 joules of power to each light. When in the simultaneous mode, the accumulated power to each light is 21 joules. In the three light mode, the wing tips will flash simultaneous at an accumulated 21 joules each, they alternate with a third light operating at an accumulated 42 joules. On the trigger selector outlet, a switch mounted in place of the jumper will allow wing tip outlets 2 & 3 to be turned off, while the tail outlet 1 will remain on. This power supply will operate from 10 to 30 VDC. SPECIFICATIONS: • Power Consumption: 7.0 amps @ 14 VDC; 3.5 amps @ 28 VDC • Weight: 2.1 lbs. (953gm) • Length: 5.50" (140mm) • Width: 5.0" (127mm) • Height: 2.37" (60mm)

Model #	Approvals	Part No.	Price
HDACF	FAA/PMA	11-16218	$398.00

MODEL A490ATSC SERIES - Operates one strobe lighthead. It produces an accumulated 34 joules of power and can be equipped to flash simultaneously with up to 5 other like units by connecting an 18 gauge wire between outlet 3 on the input power connector. This power supply will operate from 10 to 30 VDC. SPECIFICATIONS: • Power Consumption: 4.0 amps @ 14 VDC; 2.0 amps @ 28 VDC • Weight: 1.7 lbs. (771gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 3.06" (78mm)

Model #	Approvals	Part No.	Price
A490ATSC	FAA/PMA	11-02666	$466.00

MODEL A490TCF SERIES - Operates one strobe lighthead. It produces an accumulated 19 joules of power. It will only meet 400 CP when used with the A470A-W. This unit cannot be synchronized. Operates from 10 to 30 VDC (not approved for use with red strobe light). SPECIFICATIONS: • Power Consumption: 1.7 amps @ 14 VDC; 0.85 amps @ 28 VDC • Weight: 1.2 lbs. (544gm) • Length: 5.0" (127mm) • Width: 3.12" (79mm) • Height: 2.38" (60mm)

Model #	Approvals	Description	Part No.	Price
A490TCF	FAA/PMA	20" leads, amp connectors	11-14714	$338.00
A490TCFM	—	20" leads, Molex connectors	11-06406	$343.00
7000615	—	20" leads, no connectors	11-07600	$355.00

MODEL A490TCCF SERIES - Same as the A490TCF but has a mounting plate with additional holes that directly replaces factory installed systems on single engine Cessna's, Aero Commanders, and Grumman Americans.

Model #	Approvals	Description	Part No.	Price
A490TCCF	FAA/PMA	20" leads, amp connectors	11-02661	$337.00
7000612	—	9" output, 7" input, leads (Cessna 172)	11-04493	$351.00
7000617	—	3" output, 7" input & 4 pos. amp conn (Cessna) (182,206)	11-04494	$339.00

MODEL HDS SERIES - Produces 20 joules of energy, SingleFlash, alternating between two light assemblies. The SingleFlash allows for a low current draw. This power supply will operate from 10 to 30 VDC. SPECIFICATIONS: • Power Consumption: 4.0 amps @ 14 VDC; 2 amps @ 28 VDC • Weight: 2.0 lbs. (907gm) • Length: 5.50" (140mm) • Width: 5.0" (127mm) • Height: 2.37" (60mm)

Model #	Approvals	Part No.	Price
HDS1428	—	11-03279	$466.00

MODEL 01-0770062-05 (CIRRUS) - Operates one (1) strobe light head at 36 joules in CometFlash. It is equipped to flash simultaneously with up to 5 other like units by connecting an 18 gauge wire between outlet 3 on the input connector. SPECIFICATIONS: • Power Consumption: 1.6 amps avg. • Input Voltage: 28 VDC Nominal • Weight 1.3lbs • Length: 5.00" • Width: 3.12" • Height: 3.00"

P/N 11-08306.....$469.00

READING LIGHT - The Model A325 ML reading light will replace original equipment on 14 volt Piper aircraft. It is designed for passenger convenience and is equipped with an on/off slide switch. Specify voltage (14V or 28V).

14V..... P/N 11-03294 .....$314.00
28V..... P/N 11-03682.....$305.00

OVERHEAD CABIN LIGHT - The Model A360 is designed for recessed overhead lighting. Aluminum housing & Pyrex lens. Weight: 0.25 Lb.

14V..... P/N 11-03685 .....$145.75
28V..... P/N 11-03686 .....$145.75
Dome light assy. with switch 14V..... P/N 11-03629 .....$161.75
Dome light assy. with switch 28V..... P/N 11-12924 .....$152.40

MODEL71144'GOOSENECK'LEDLIGHTASSEMBLY - 71144 assembly features a positive off position and rheostat controlled light intensity. Models including 'side' mounted intensity control are which is designed for the S76D. 28 VDC Only. SPECIFICATIONS: • Power Consumption: 0.06 amps @ 28 VDC • LED Colors: Aviation White • Weight: 0.46 lbs. (209gm) • Black Nylon Hood: fixed in position

Model #	Approvals	Description	Part #	Price
7114416	—	16" adj map light, 28V - Wht	11-07701	$288.95
70190R12	—	16" adj map light, 28V - Red	11-07731	$319.00
70190B12	—	16" adj map light, 28V - Blue	11-07732	$360.00

A350 WHELEN POST LIGHTS - A350 and A350CN series instrument post light assemblies are designed to illuminate the instrument panel and function as instrument mounting bolts. The A350 is identical to the A350CN, but without the connector nut. SPECIFICATIONS: • Drawing Number A350: 70116 • Drawing Number A350CN: 70119 • Exposed Height: .875" (22mm) without spacer, 1.00" (25mm) with spacer • Power Consumption: 0.2 amps @6 VDC, 0.08 amps @14 VDC, & 0.04 amps • @ 28 VDC • Weight: 0.037 lbs. (17gm)

Post Light Assembly w/ nut black post
P/N 11-08133 .....$39.50
Post Light Assembly w/ nut grey post
P/N 11-01171 .....$37.95

Mfg Model#	Description	Part No.	Price
A350CN09	White, 14 VDC	11-03205	$40.50
A350CN10	Red, 14 VDC	11-03214	$39.85
A350CN15	White, 28 VDC	11-03210	$39.75
A350CN16	Red, 28 VDC	11-03653	$40.80

INSTALLATION CABLE KITS - Cable kits include all required connectors for hooking up the strobe light to the power supply only. Warning placards included. All cable is 16 gauge 3/C shielded. The cable diameter is .275" (7mm). Weight is .050 lbs. per linear foot. (Kits do not include switches or breakers)

Model #	Approvals	Description	Part #	Price
HS5	—	5' Cable kit	11-04204	$37.75
HT10	—	10' Cable kit	11-08173	$37.50
HS30	—	30' Cable kit	11-03285	$56.75
HD60	—	60' Cable kit	11-02667	$104.85
HDT390	—	90' Cable kit	11-02668	$140.75
HT	—	Install kit only	11-02669	$17.95

REPLACEMENT CONNECTORS - Replacement connector kits and assemblies for cables.

Model #	Approvals	Description	Part #	Price
A441	—	3 Position male with pins kit	11-03211	$4.95
A442	—	3 Position male with sockets kit	11-03212	$4.95
A444	—	2 Position male with pins ass'y	11-03700	$4.95
A446	—	2 Position female with sockets ass'y	11-03702	$4.95
A447	—	4 Position male with pins	11-07706	$5.35
A448	—	4 Position female with sockets	11-07707	$4.95

CRIMP TOOL - Pin and socket crimping tool.

Model #	Approvals	Description	Part #	Price
CRIMPAV	—	Pin/socket crimping tool, MILBAR #25E	11-07708	$172.75

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NOTE: All non-FAA approved Whelens parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

MODEL 71141 SERIES LED LANDING LIGHT (INTERNAL MOUNT) PAR-36 STYLE -

71141 series is a self-contained all LED landing light assembly. The design is intended to provide a solution to the needs for a taxi & landing light on a wide variety of aircraft. All current source and electronic circuitry is contained within the housing. Unit is available in several mounting configurations to retrofit existing typical PAR-36 lighting. Unit is designed to be mounted internally behind existing lens. Item ships with flying leads. Contact your OEM for installation eligibility on your aircraft. SPECIFICATIONS: • Power Consumption: 1.5 amps @ 28 VDC • Weight: 1.0 lbs. (454gm) • Exposed Diameter: 4.46" (113mm). Overall • Depth: 1.90" (48mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
7114112	—	LED landing/taxing light internal mount	11-06185	$535.00
7114122	—	LED landing/taxing light internal mount	11-06186	$563.00

MODEL 90361 SERIES LED LANDING LIGHT (EXTERNAL MOUNT) PAR-36 STYLE -

90361 series is a self-contained all LED landing light assembly. The design is intended to provide a solution to the needs for a taxi & landing light on a wide variety of aircraft. All current source and electronic circuitry is contained within the housing. Unit is available in several mounting configurations to retrofit existing typical PAR-36 lighting. Outer lens allows for mounting externally on aircraft, option of diffusion lens available upon request. Item ships with flying leads. Contact your OEM for installation eligibility on your aircraft. SPECIFICATIONS: • Power Consumption: 1.5 amps @ 28 VDC • Weight: 1.3 lbs. (590gm) • Exposed Diameter: 4.70" (119mm). Overall • Depth: 2.87" (73mm) • Lens: Clear Polycarbonate

Model #	Approvals	Description	Part #	Price
9036110	—	"U" bracket mounting	11-06181	$727.00
9036115	—	LED taxi, assy with spreader optic, 14V	11-06182	$727.00
9036120	—	"U" bracket mounting	11-06183	$632.00
9036125	—	LED taxi, assy with spreader optic, 28V	11-06184	$725.00

MODEL 71125 SERIES LED RECOGNITION LIGHT -

71125 series LED recognition light is designed to provide supplemental lighting for a wide variety of aircraft applications. Provides all of the advantages of LED's as a light source, no EMI/RFI, low current draw, low heat, long life. Perfect for vibration prone areas. Item ships with flying leads. Several different beam spreads available. Designed to replace the Whelen A775 series. Version containing integrated MS connector also available. Can be used in conjunction with 71115 Flasher control assembly. Contact your OEM for installation eligibility on your aircraft. SPECIFICATIONS: • Power Consumption: 0.9 amps @ 14 Volts, 0.45 amps @ 28 Volts • Lens: Clear polycarbonate • LED Color: Aviation White • Weight: 0.3 lbs. (136gm) • Overall Width: 3.25" (83mm) • Overall Depth: 1.25" (32mm) • Overall Height: 1.95" (50mm)

Model #	Approvals	Description	Part #	Price
7112510	—	10 degree beam pattern, 14V	11-06164	$264.95
7112511	—	20 degree beam pattern, 14V	11-06165	$292.95
7112512	—	90 degree beam pattern, 14V	11-06166	$298.95
7112513	—	30 degree beam pattern, 14V	11-07702	$385.00
7112520	—	10 degree beam pattern, 28V	11-06167	$272.95
7112521	—	20 degree beam pattern, 28V	11-06168	$264.95
7112522	—	90 degree beam pattern, 28V	11-06169	$264.95
7112523	—	30 degree beam pattern, 28V	11-07703	$279.95

MODEL A775 SERIES -

A775 series recognition light assembly which produces up to 22,000 beam candlepower using only a 35 watt lamp. SPECIFICATIONS: • Drawing Number: 70110 • Weight: 0.14 lbs. (64gm) • Width: 3.25" (83mm) • Height: 1.75" (44mm) • Depth: 2.25" (57mm) • Power Consumption: 2.5 amps @ 14 VDC, 1.25 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
7011001	FAA/PMA	Molex connector (Piper), 14V	11-07704	$45.50
7011002	FAA/PMA	Molex connector (Piper), 28V	11-07705	$44.80
A77514	—	12" leads, 14 VDC	11-03741	$54.75
A77528	—	12" leads, 28 VDC	11-03742	$59.75

A715-1 LANDING LIGHT

The Model A715-1 landing light is standard equipment on new Beechcraft, and will retrofit into older aircraft, as well. Accommodates PAR 36 sealed beam lamp. Order lamp separately (#4509 - 100W, 12V; #4594 or #4613 100W, 24V; Wt. 1/2 lb. Size: 4-3/4" dia. x 6-1/2" long x 2-1/8" deep.

P/N 11-03281 ..... $176.95

WHELEN LED STROBE SYSTEM #1

LED Navigation and White LED Tail Light with Strobe Anti-Collision Light. Whelen Strobe System #1 LED 14V Kit Includes: 1 ea. Whelen Green LED Navigation 14V 9034003 1 ea. Whelen Red LED Navigation 14V 9034004 1 ea. Whelen A413A,HDA-CF 14/28V 1 ea. Whelen HD60 Power Supply Installation Kit

14V Kit ..... P/N 11-07596 ..... $1,370.00
28v Kit ..... P/N 11-07711 ..... $1,433.00

WHELEN LED STROBE SYSTEM #2

LED Navigation and White LED Tail Light with Strobe Anti-Collision Light. Whelen Strobe System #2 LED 14V Kit Includes: 1 ea. Whelen Green LED Navigation 14V 9034001 1 ea. Whelen Red LED Navigation 14V 9034002 2 ea. Whelen A490A, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit ..... P/N 11-05646 ..... $1,817.00
28V Kit ..... P/N 11-05647 ..... $1,880.00

WHELEN LED STROBE SYSTEM #4

LED Navigation with Strobe Anti-Collision Light Whelen Strobe System #4 LED Navigation 14V Model 711 Series Kit Includes: 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 2 ea. Whelen A490A, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit ..... P/N 11-05639 ..... $1,546.00
28V Kit ..... P/N 11-05640 ..... $1,547.00

WHELEN LED STROBE SYSTEM #4A

LED Navigation with Strobe Anti-Collision Light. Whelen Strobe System #4A LED Navigation 14V Model 711 Series Kit Includes: 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 2 ea. Whelen A490T, TS, CF 14V-28V 1 ea. Whelen Power Install Info Pack

14V Kit ..... P/N 11-05641 ..... $1,290.00
28V Kit ..... P/N 11-05642 ..... $1,291.00

WHELEN LED STROBE SYSTEM #5

LED Navigation with Strobe Anti-Collision Light. Whelen Strobe System #5 LED Navigation 14V Model 711 Series Kit Includes: 1 ea. Whelen Green LED Navigation 14V 7111001 1 ea. Whelen Red LED Navigation 14V 7111002 1 ea. Whelen A413A, HDA-CF 14V/28V 1 ea. Whelen Power Supply HD60 Installation

14V Kit ..... P/N 11-05648 ..... $1,099.00
28V Kit ..... P/N 11-05649 ..... $1,100.00

STROBE SYSTEMS WITH A650 STROBES

NO. 8 TWO LIGHT SYSTEM (WITH LOCAL POWER SUPPLIES)

(2)A650 Wingtip Strobe Lights,
(2) A490A,TS,CF Power Supplies (400 Effective Candles)
HT Information Packet.

P/N 11-04600 (14-28V) $1,076.00

Same but w/A490T, CF Power Supplies.

P/N 11-04605 (14-28V) $871.00

NO. 9 TWO LIGHT SYSTEM (WITH REMOTE POWER SUPPLY)

(2) A650 Wingtip Strobe Lights
(1) A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles)

HD-60 Installation Kit ..... P/N 11-04800 (14-28V) $719.00

NO. 10 THREE LIGHT SYSTEM (WITH LOCAL POWER SUPPLIES)

(2) A650 Wingtip Strobe Lights
(1) A500 Tail Position/Strobe Light, (vertical)
(3) A490A,TS, CF Power Supplies (400 Effective Candles Wingtip Strobes, 300 Effective Candles Tail Strobe)
HT Info Packet.

Part No.	Description	Price
11-05000-14-V	A-500-Verticle - 14V	$1,683.00
11-05000-14-H	A-500-Horizontal - 14V	$1,682.00
11-05000-28-V	A-500-Verticle - 28V	$1,682.00
11-05000-28-H	A-500-Horizontal - 28V	$1,682.00
	Same Kit but with A490T,CF Power Supplies	
11-05001-14-V	A-500-Verticle - 14V	$1,374.00
11-05001-14-H	A-500-Horizontal - 14V	$1,374.00
11-05001-28-V	A-500-Verticle - 28V	$1,374.00
11-05001-28-H	A-500-Horizontal - 28V	$1,374.00

NO. 11 THREE LIGHT SYSTEM (WITH REMOTE POWER SUPPLY)

(2) A650 Wingtip Strobe Lights
(1) A500 Tail Position/Strobe Light
(1) A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles)
HD,T3-90 Installation Kit.

Part No.	Description	Price
11-05400-14-V	A-500-Verticle - 14V	$939.00
11-05400-14-H	A-500-Horizontal - 14V	$939.00
11-05400-28-V	A-500-Verticle - 28V	$939.00
11-05400-28-H	A-500-Horizontal - 28V	$939.00

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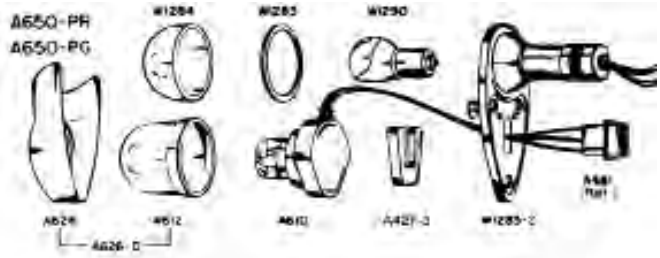
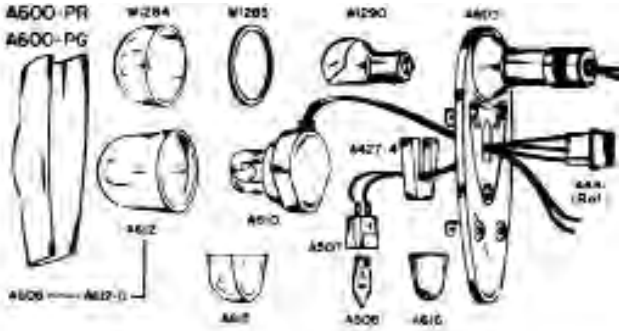
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

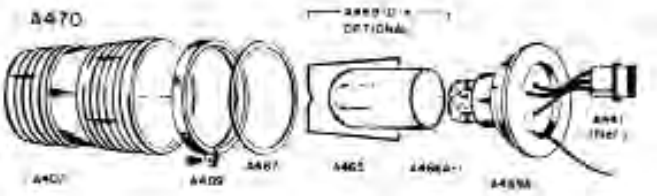
AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

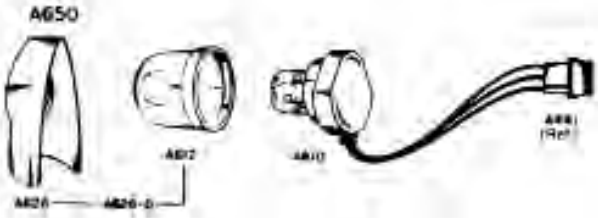
Prices Subject to Change Without Notice

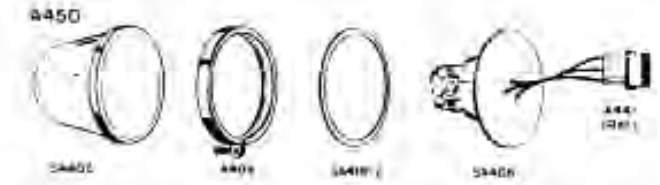
WHELEN STROBE LIGHTS

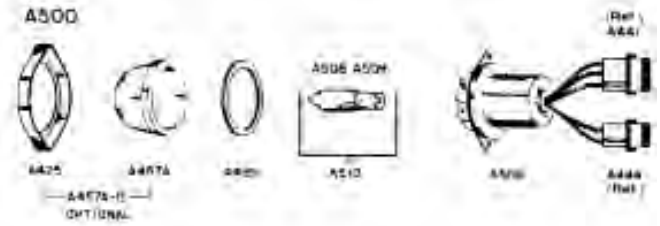


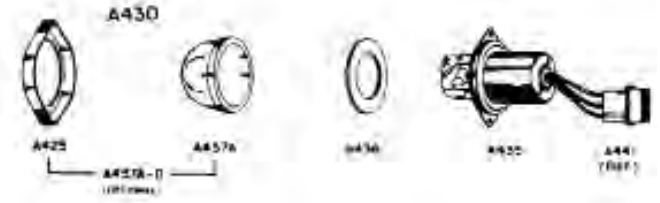


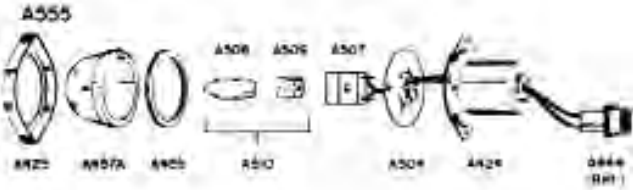


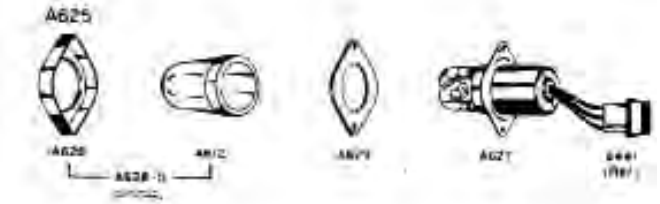


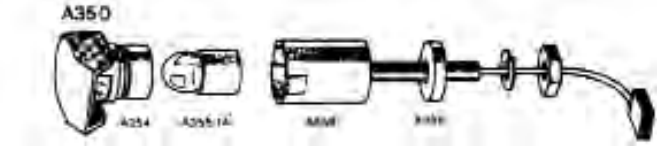












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WHELEN STROBES

STROBE SYSTEM PARTS

Model #	Description	Part No.	Price
A402R	Red Optic Lens	11-03254	$27.65
A402W	White Optic Lens	11-03271	$27.80
A402R/W	Split Red/White Optic Lens	11-03248	$32.70
A406	Flash Tube Assembly	11-03687	$83.85
A409	Clamp Ring Assembly	11-03688	$11.95
A414A, HDH, CF	HDH,CF Power Supply	11-03632	$476.00
A417-1	Interconnecting Cable	11-03658	$2.25
A421-1	Warning Decal	11-03691	$3.90
A425	Tail Strobe Lens Retainer	11-03692	$18.60
A426	Wingtip Strobe Lens Retainer	11-03233	$69.75
A427	Flash Tube Assembly	11-03219	$76.75
A427-M	Flash Tube Assembly with Molex Connector	11-03272	$77.85
A427-4	Rubber Pad Spacer	11-03693	$7.50
A428	Wingtip Strobe Lens	11-03236	$89.75
A428-C	Wingtip Strobe Radio Shielded Lens	11-03694	$78.75
A428-D	Wingtip Strobe Radio Shielded Lens plus A426 Retainer assy.	11-03290	$137.75
A469A	Strobe Tube Assembly	11-03242	$77.75
A430	Tail Strobe Head Assembly	11-03696	$139.75
A435	Flash Tube Assembly	11-03697	$83.75
A440	WRM-65 Mounting Adapter, forHR,DF & SA,DF	11-03699	$21.90
A441	AMP Connector and 3 Pins	11-03211	$4.95
A442	AMP Connector and 3 Sockets	11-03212	$4.95
M441	Molex Connector and 3 Pins for Piper Installation	11-04215	$7.50
M442	Molex Connector and 3 Sockets for Piper Installation	11-04216	$7.50
A444	AMP Connector and 2 Pins	11-03700	$4.95
M444	Molex Connector and 2 Pins for Piper Installation	11-04217	$7.50
A445	Switch Label	11-03701	$3.35
A446	AMP Connector and 2 Sockets	11-03702	$4.95
A450	Strobe Head Assembly	11-03280	$212.95
A455	Gasket	11-03703	$7.50
A457A	Tail Light Lens for A500 and A555	11-03227	$31.85
A457A-D	Radio Shielded Tail Light Lens Assembly for A500	11-03704	$95.99
A465	Spring	11-03707	$16.90
A466A-1	Radio Shielded Lens	11-03708	$75.75
A467	Gasket for A470	11-03709	$8.50
A469B	Flash Tube Assembly	11-03225	$71.85
A469D-K	Radio Shielded Kit for A469A	11-03711	$97.75

Model #	Description	Part No.	Price
A470-D	Radio Shielded Remote Strobe Head Assembly, Specify Color	11-03291	$199.85
A470-A-D-S	Strobe Head Assembly, Shielded Red/White	11-04976	$183.75
A470-D-R-SU	Radio Shielded Remote Strobe	11-03714	$187.75
A490 TC CF	14V Power Supply	11-02661	$337.00
A490 TC CF	28V Power Supply	11-06406	$343.00
A500-V-D-14	14V Radio Shielded Tail Position Strobe Light Head Assy. Vertical Mount	11-03721	$273.95
A500-V-D-28	28V Radio Shielded Tail Position Strobe Light Head Assy. Vertical Mount	11-06407	$261.95
A500-H-D-14	Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount	11-03717	$273.95
A500-H-D-28	Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount	11-06327	$280.95
A500-V-D-M-14	Radio Shielded Tail Position & Strobe Light Head Assembly Vertical Mount with Molex Connector	11-03722	$285.95
A500-V-D-M-28	Radio Shielded Tail Position & Strobe Light Head Assembly Vertical Mount with Molex Connector	11-06329	$280.95
A500-H-D-M-14	Radio Shielded Tail Position & Strobe Light Head Assembly Horizontal Mount with Molex Connector	11-03719	$285.95
A500B-V-14	Tail Position & Strobe Light Head Assembly (Beech)	11-03715	$313.00
A500B-V-28	Tail Position & Strobe Light Head Assembly (Beech)	11-03716	$330.00
A500SP-28	Tail Pos. & Strobe Assy. (Beech)	11-03720	$284.95
A502	Flash Tube & Socket Assembly	11-03723	$239.95
A506	Flash Tube & Socket Assembly	11-03274	$139.75
A506-B	Flash Tube & Socket Assembly	11-03724	$259.95
A506-M	Flash Tube & Socket Assembly	11-03725	$133.90
A506-SP	Flash Tube & Socket Assembly	11-03726	$247.95
A507	Lamp Socket Assembly for A555	11-03240	$19.50
A508-14	Halogen Lamp for A500,A555, A600	11-03216	$24.50
A508-28	Halogen Lamp for A500,A555, A600	11-03208	$23.75
A509	Lamp Shield for A500 and A555	11-03727	$9.90
A510-14	Lamp Assembly for A500 & A555	11-03728	$32.00
A510-28	Lamp Assembly for A500 & A555	11-03266	$32.50
A50828	Lamp for A500, A555, & A600	11-03208	$23.75
A512-V-28	Tail Position & Strobe Light Head Assembly (Gulfstream Commander)	11-03729	$164.95
A540	Long Mounting Adapter	11-03730	$79.75
A600-PG-D-14	Radio Shielded Wingtip Strobe Light with Forward & Tail Position Light Assembly	11-03636	$456.00
A600-PG-D-28	Radio Shielded Wingtip Strobe Light with Forward & Tail Position Light Assembly	11-03732	$446.00
A600-PG-D-M-28	Radio Shielded Wingtip Strobe Light w/ Forward & Tail PositionLight Assembly (Molex Connector)	11-03732	$446.00
A600-PR-D-M-14	Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector)	11-03638	$462.00
A600-PR-D-M-28	Radio Shielded Wingtip Strobe Light w/ Forward & Tail Position Light Assembly (Molex Connector)	11-06335	$462.00
A605	Base Plate Assembly	11-03733	$98.75
A606	Retainer	11-03260	$41.50
A610	Flash Tube Assembly	11-03213	$71.75
A610-M	Flash Tube Assembly	11-03734	$74.90
A612	Magnifying Lens	11-03222	$32.75
A612-D	Radio Shielded Lens Retainer Assembly	11-03735	$114.75
A615	Lens for A600 Tail Light	11-03230	$64.90
A616	Gasket for A600 Tail Light	11-03261	$8.50
A625	Tail Strobe Head	11-03228	$135.99
A625-D	Radio Shielded Tail Strobe Head Assembly	11-03659	$159.75
A626	Retainer Lens	11-03229	$36.50
A626-D	Radio Shielded Lens Retainer Assy.	11-03736	$113.95
A627	Flash Tube Assembly	11-03263	$79.85
A628	Retainer Lens	11-03737	$22.55
A629	Gasket	11-03660	$8.50
A650	Wingtip Strobe Head Assembly	11-03215	$124.80

NOTE:
All Whelen Replacement parts reflect at least 30% discount off factory list price.

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WHELEN STROBES

Model #	Description	Part No.	Price
A650-PG-D-14	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-03639	$404.00
A650-PG-D-28	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-06336	$387.00
A650-PR-D-14	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-03642	$396.00
A650-PR-D-28	Wingtip Position & Strobe (Radio Shielded) Head assy.	11-06337	$403.00
A650-PG-D-M-28	Radio Shielded Wingtip Strobe & Position Light Head Assemble w/ Molex Connector .	11-06338	$391.00
A730	Tail Flood Light Assembly	11-03740	$345.00
A1610-14	Power Supply	11-03666	$636.00
C-70178-1	Power Supply (Single Flash)	11-04132	$549.00
C-70188-1	Power Supply	11-04133	$578.00
C-70190-1	Goose Neck Light (12" Long)	11-04134	$249.95
70285-1	Self Contained Strobe RadioShielded Red	70285-1	$884.00
70285-2	Self Contained Strobe Radio Shielded Red with Mask	70285-2	$884.00
70285-3	Self Contained Strobe White	70285-3	$884.00
70285-5	Self Contained Strobe Red	70285-5	$884.00
70285-6	Self Contained Strobe Radio Shield Red with Mask	70285-6	$884.00
70294-1	Power Supply	70294-1	$554.00
H102	"B" Mounting Adapter	11-03243	$11.75
H103	"A" Mounting Adapter 3-3/4"	11-03284	$65.85
HR-CF200-14	14V Power supply for HR or SA	11-03838	$361.00
SA402	Lens Assembly for SA & A450	11-04259	$169.85
SA406	Flash Tube Assembly for SA & A450	11-03250	$73.75
W1282	Forward Position Light Lens Retainer	11-03232	$34.75
W1283	Forward Position Light Gasket	11-03209	$8.75
W1284-G	Forward Position Light Lens (Green)	11-03206	$43.50
W1284-R	Forward Position Light Lens (Red)	11-03207	$37.75
W1285-2	Forward Position Light Base	11-03244	$87.75
W1284C	Lens, Clear	11-04117	$137.75
W1290-14	14 Volt Position Light Bulb	11-02602	$38.90
W1290-28	28 Volt Position Light Bulb	11-02604	$29.90
90029-1	Combination Wing-tip Light Assy.	90029-1	$1,236.00
90029-2	Combination Wing-tip Light Assy.	90029-2	$1,236.00
90029-3	Combination Wing-tip Light Assy.	90029-3	$1,276.00
90029-4	Combination Wing-tip Light Assy.	90029-4	$1,276.00
90033-1	Anti Collision Beacon Assy. Red	90033-1	$548.00
90033-2	Anti Collision Beacon Assy. White	90033-2	$523.00
34-0226010-91	Lamp Quartz 150 Watt	11-05091	$43.50

INTERIOR LIGHTING

Model #	Description	Part No.	Price
A300-14	14V Map Light Assembly	11-03673	$176.75
A300-28	28V Map Light Assembly	11-03674	$171.75
A315HIR2	28V Cockpit Utility Light - Red	11-03678	$94.75
A315-HI-B-14	14V Cockpit Utility Light - White	11-03675	$92.75
A315-LO-B-14	14V Cockpit Utility Light	11-03679	$34.50
A315-LO-B-28	28V Cockpit Utility Light	11-03680	$34.80
A325-ML-14	14V Reading Light Assembly	11-03294	$314.00
A325-ML-28	28V Reading Light Assembly	11-03682	$305.00
*A350-14	14V Post Light Assembly	11-03205	$40.50
*A350-28	28V Post Light Assembly	11-03210	$39.75
A360-14	14V Dome Light Assembly Overhead	11-03685	$145.75
A360-28	28V Dome Light Assembly Overhead	11-03686	$145.75
A360SW	Dome Light Assembly w/Switch	11-03629	$161.75
70339-1	Floodlight Assembly (14V)	70339-1	$152.75
70339-02	Floodlight Assembly (28V)	70339-02	$151.75
70339-03	Floodlight Assembly (14V Switch)	70339-03	$170.80
70339-04	Floodlight Assembly (28V Switch)	70339-04	$176.99
70348-00	Post Light (28V 10-32Thread) (IW)	70339-00	$74.75
70348-01	Post Light (28V 10-32Thread) (RD)	70339-01	$75.80

PARTS FOR POST LIGHTS

Model #	Description	Part No.	Price
A343	Connector Assembly	11-03252	$13.90
*A354	Head Assembly	CALL	$20.75
*A358	Base Assembly	CALL	$25.50
A359	Spacer	11-03684	$9.85

* Requires dash numbers for lens color and finish. Please contact factory.
‡ For complete information contact factory.

RECOGNITION LIGHT & LANDING LIGHT

Model#	Description	Part No.	Price
A715-1	14V Fixed Landing Light (PAR 36)	11-03281	$176.95
A775-14	14V Recognition Light 35 Watt	11-03741	$54.75
A775-28	28V Recognition Light 35 Watt	11-03742	$59.75
A775-EXP-14	14V - Recognition Light 35W Explosion Proof	11-03648	$131.95
A777	Lens for A775-EXP	11-03649	$12.00
70346-00	Recognition Light (14V No Lens)	70346-00	$39.95
70346-01	Recognition Light (28V No Lens)	70346-01	$39.85
70346-02	Recognition Light (14V Clear Lens)	70346-02	$48.75
70346-03	Recognition Light (28V Clear Lens)	70346-03	$48.75
70346-04	Recognition Light (14V Optic Lens)	70346-04	$48.75
70346-05	Recognition Light (28V Optic Lens)	70346-05	$48.75
01-0790095-02	Fixed Landing Light (PAR 46)	01-070095-02	$198.75
38-0240063-00	Sealed Beam Gasket (PAR 46)	11-05103	$15.50
38-0240197-01	Sealed Beam Gasket (PAR 36)	38-0240197-01	$15.50
19-270407-000	Clamp Ring (PAR 46)	19-270407-000	$33.50
19-250147-000	Clamp Ring (PAR 36)	19-250147-00	$37.25

SURFACE ILLUMINATING LIGHTS

Model #	Description	Part No.	Price
A708-28	28V Halogen Lamp (50 Watt)	11-00023	$31.80
A750	Flasher Assembly	11-00024	$118.95

PARTS FOR ROTATING BEACON

Rotating Beacon Replacement- The round mechanical rotating beacon was used on the vertical fin of all Barons from 1961 thru 1969. Models using this light are 95-55 (1961), A55 (1968-1969). Note: The B55 Baron continued to use this beacon until production stopped in 1982.

Model#	Description	Part No.	Price
WRM-10	Lexan Dome	11-03257	$25.75
WRM-25	Clamp Ring	11-04272	$25.50
WRM-30	Gasket	11-04273	$10.75

MISCELLANEOUS HARDWARE

Model#	Description	Part No.	Price
GLJ-106	Lamp Retainer	11-03811	$29.50
GLJ-111	Lamp Assembly	11-03812	$125.95
GLJ-126	Lens Retainer Assembly	11-03813	$116.95

ALL PRICES ON THIS PAGE REFLECT AT LEAST 30% DISCOUNT OFF WHELEN FACTORY LIST PRICES.

EL

WHELEN STROBE SYSTEMS

MODEL W1285 SERIES - W1285 series wing tip position light which uses a 26-watt incandescent lamp. It is a direct replacement for the brand "G" A1285 series. Specify 14 or 28 VDC.
SPECIFICATIONS: • Weight: 0.2 lbs. (91gm) • Height: 1.25" (32mm) • Length: 4" (102mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC

Model #	Approvals	Description	Part #	Price
W1285PG1	FAA TSO-C30b Type II	14V, position grn	11-03226	$329.00
W1285PR1	FAA TSO-C30b Type I	14V, position red	11-03224	$329.00
W1285PG2	FAA TSO-C30b Type II	28V, position grn	11-03891	$340.00
W1285PR2	FAA TSO-C30b Type I	28V, position red	11-03283	$339.00

MODEL 71015 SERIES LED FORWARD POSITION LIGHTS - 71015 series are FAA TSO compliant forward position lights. They are compatible with the Whelen W1250 position light mounting as well as any other make that uses the same mounting pattern.
SPECIFICATIONS: • Power Consumption: 0.3 amps @ 28 VDC • LED Color: Aviation Red; and Aviation Green • Weight: 0.2 lbs. (91gm) • Exposed Height: 1.33" (34mm) • Length: 2.41" (61mm)

Model #	Approvals	Description	Part #	Price
7101501	FAA TSO-C30c Type II	Grn position, 28V	11-05011	$274.95
7101502	FAA TSO-C30c Type I	Red position, 28V	11-05012	$270.95

MODEL W1250 SERIES - W1250 series wing tip position light is designed for use under a wing tip fairing. It uses a 26 watt incandescent lamp and is a direct replacement for the brand "G" A1815A Series. Specify 14 or 28 VDC.
SPECIFICATIONS: • Weight: 0.3 lbs. (136gm) • Height: 1.25" (32mm)
• Length: 2.75" (70mm) • Power Consumption: 2 amps @ 14 VDC, 1 amp @ 28 VDC

Model #	Approvals	Description	Part #	Price
W1250PR1	FAA TSO-C30b Type I	Position red, 14 V	11-04264	$189.75
W1250PR2	FAA TSO-C30b Type I	Position red, 28 V	11-03282	$189.75
W1250PG1	FAA TSO-C30b Type II	Position grn, 14 V	11-04263	$189.75
W1250PG2	FAA TSO-C30b Type II	Position grn, 28 V	11-03278	$189.75

EL

HOMEBUILDERS WHELEN STROBE KIT

This compact, lightweight strobe kit is very popular with builders of a variety of todays homebuilt aircraft. Kit includes: 2-A610 flash tube assys., 2-A612 magnifying lenses, 2-A490T,CF power supplies and 1-HT installation Kit.
P/N 11-00923 ..... $895.00

CUSTOM LOW ENERGY SYSTEM

Kit # 11-05600

Popular with Long-EZ, Q2, Q200 builders and others using a lightweight, low amperage generator or alternator. It consists of: (2) A600-PG/PR Wingtip Strobe Lights, (1) A413A, HDS-14/28 (Single Flash 20 Joules) remote mounted Power Supply, HD-60 Installation Kit (Draws less than 4A - 14V & produces 400 effective Candles.)
P/N 11-05600.....$1,391.00

WHELEN STROBE TESTER

Designed to determine whether power supply is operating normally. Kit contains troubleshooting procedures. Also contains adapter for testing some Grimes and Hoskins strobe light systems.
P/N 11-06800 ..... $173.75

MODEL 70966 SERIES - 70966 series LED tail position light, is a high quality, long lasting, modern alternative to incandescent & halogen tail position lights. It offers significant technological upgrades over previous products. Utilizing LED technology, the following advantages are offered: Long Life (approx. 20,000 hours); Reduced Power Consumption (compared to alternative light sources); Shock & Vibration Resistant (no fragile filament to burn out); Light (produces bright white light) and No EMI or RFI Interference. 3 Year Warranty.
SPECIFICATIONS: • Exposed Height: 1.64" (42mm) • Length: 2.60" (66mm) • Width: 1.74" (44mm) • Power Consumption: 0.3 amps @ 28 VDC • Weight: 0.3 lbs. (136gm)

Model #	Approvals	Description	Part #	Price
7096600	FAA TSO-C30c Type III	28 VDC - no connectors	11-01228	$449.00
7096601	FAA TSO-C30c Type III	28 VDC - connectors, case ground used on Beechjet	11-07699	$448.00

STROBE SYSTEMS WITH A600-PG/PR STROBE/NAV LIGHTS

NO. 1 Two A600-PG/PR Wingtip Strobe Lights, (1) A413A-HDA-CF-14/28, remote mounted Power Supply (400 Effective Candles) and HD-60 Installation Kit.
P/N 11-03000 (14V).....$1,247.00
P/N 11-03100 (28V).....$1,247.00

NO. 2 Two A600-PG/PR Wingtip Strobe Lights, (2) A490A,TS,CF Power Supplies (400 Effective Candles) and HT Installation Kit.
P/N 11-03200 (14V) $1,604.00

STROBE SYSTEMS WITH A650-PG/PR STROBE/ NAV LIGHTS

NO. 4 TWO LIGHT SYSTEM (With Local Power Supplies) - (2) A650-PG/PR Wingtip Strobe Lights, (2) A490A, TS, CF, Power Supplies (400 Effective Candles) and HT Information Packet.
14V P/N 11-03600.....$1,397.00
28V P/N 11-03610.....$1,397.00
(Same Kit but w/A490T, CF Power Supplies below)
14V..... P/N 11-03605 ..... $1,192.00 28V ..... P/N 11-03615 ....$1,192.00

NO. 5 TWO LIGHT SYSTEM (With Remote Power Supply) - (2) A650-PG/PR Wingtip Strobe Lights, (1) 413A,HDA-CF-14/28,CF remote mounted Power Supply (400 Effective Candles) & HD-60 Installation Kit. 14V.....P/N 11-03800.....$1,041.00
28V.....P/N 11-03805.....$1,035.00

NO. 6 THREE LIGHT SYSTEM (With Local Power Supplies) - Two A650-PG/PR Wingtip Strobe Lights, one A500 Tail Position/Strobe Light, (vertical) three A490A,TS,CF Power Supplies (400 Effective Candles Wingtip Strobes, 300 Effective Candles Tail Strobe) and HT Information Packet.
14V (A-500-Vert)..... P/N 11-04000-14-V.....$2,003.00
14V (A-500-Hor)..... P/N 11-04000-14-H.....$2,003.00
28V (A-500-Vert)..... P/N 11-04000-28-V.....$2,003.00
28V (A-500-Hor)..... P/N 11-04000-28-H.....$2,003.00
(Same Kit but w/A490T, CF Power Supplies below)
14V (A-500-Vert)..... P/N 11-04010-14-V.....$1,696.00
14V (A-500-Hor)..... P/N 11-04010-14-H.....$1,696.00
28V (A-500-Vert)..... P/N 11-04010-28-V.....$1,690.00
28V (A-500-Hor)..... P/N 11-04010-28-H.....$1,690.00

NO. 7 THREE LIGHT SYSTEM (With Remote Power Supply) - (2) A650-PG/PR Wingtip Strobe Lights, (1) A500 Tail Position/Strobe Light, (vertical) one A413A,HDA-CF-14/28 remote-mounted Power Supply (400 Effective Candles Wingtip Strobes, 330 Effective Candles Tail Strobe) & HD,T3-90 Installation Kit. 14V..... P/N 11-04400 .....$1,168.00
28V..... P/N 11-04500 .....$1,168.00

MODEL 70285 SERIES - 70285 series self-contained CometFlash® strobe anti-collision light. It utilizes the same lens/reflector and strobe tube as the model HRCFA, however, its vibration resistant, heavy-duty construction is specially designed for helicopter applications. It has a fixed mounting adapter and an MS input connector. Available in three different lens colors, Aviation red, aviation white, and split aviation red/white and in radio-shielded configurations. FAA approved as a direct replacement for any rotating beacon that uses a 3-3/4" dia. mounting hole. Unit will operate between 10 to 30 VDC. SPECIFICATIONS: • Weight: 1.5 lbs. (680gm) • Height: 8.0" (203mm) • Diameter: 3.7" (94mm) • Power Consumption: 3.2 amps @ 14 VDC, 1.6 amps @ 28 VDC

Model #	Approvals	Description	Part #	Price
7028521	—	Shielded, red lens	70285-1	$884.00
7028522	—	Shielded, red lens with .31 mask	11-07696	$892.00
7028523	—	White lens	70285-3	$884.00
7028524	—	Split red/white lens	70285-24	$528.00
7028525	—	Red lens	70285-5	$884.00
7028526	—	Shielded, red lens with .29 mask	70285-6	$884.00
7028527	—	White lens, with lock wire	11-07698	$866.00
7028528	—	Shielded, split red/white lens	70285-2	$884.00

NOTE: All non-FAA approved Whelen parts are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products may require additional FAA approvals.

MODEL 70844 SERIES LED POST LIGHTS - The model 70844 series are LED (Light Emitting Diode) instrument post light assemblies. Designed to illuminate the instrument panel, and function as instrument mounting bolts. High quality, long lasting, modern alternative to standard incandescent post lights. Utilizing LED technology, the following advantages are offered: • Long life - approximately 20,000 hours. • Reduced power consumption -compared to alternative light sources • Shock and vibration resistant, no fragile filament to burn out • Light - produces bright white light. • No EMI or RFI interference Specifications: • Wt: .03 lbs. • Exposed Height: 1" w/o spacer • Width: 1.74 • Power consumption: .02 amps @ 14 V / .02 Amps @ 28V

Model No.	Whelen P/N	Description	Part No.	Price
7084400	01-0770844-00	14V, 1.0" post	11-01215	$37.50
7084401	01-0770844-01	14V, 1.5" post	11-01216	$37.65
7084402	01-0770844-02	28V, 1.0" post	11-01217	$37.85
7084403	01-0770844-03	28V, 1.5" post	11-01218	$37.50
Replacement light hood			11-07775	$0.60

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MODEL A600 PG/PR SERIES - A600 PG/PR series wing tip anti-collision, forward position and tail position lights, all in one compact unit. Tail position light eliminates the need for a tail mounted position light. Available in 14 or 28 VDC and in a radio-shielded version. The forward position lamp is 26 watts and the taillight lamp is 25 watts. SPECIFICATIONS: • Weight: 0.8 lbs. (363gm) • Position Lamps Power Consumption: 4 amps @ 14 VDC; 2 amps @ 28 VDC • Exposed Height: 2.4" (61mm) • Length: 5.63" (143mm) • Width: 1.7" (43mm)

Model #	Approvals	Description	Part No.	Price
A600PG14	FAA TSO-C30b / FAA/PMA	Pos Grn, 14V	11-03220	$411.00
A600PG28	FAA TSO-C30b / FAA/PMA	Pos Grn, 28V	11-03245	$429.00
A600PR14	FAA TSO-C30b / FAA/PMA	Pos red, 14V	11-03221	$411.00
A600PR28	FAA TSO-C30b / FAA/PMA	Pos red, 28V	11-03246	$429.00
A600PGD1	FAA TSO-C30b / FAA/PMA	Pos green, 14V, radio-shielded	11-03636	$456.00
A600PGD2	FAA TSO-C30b / FAA/PMA	Pos Grn, 28V, radio-shielded	11-03732	$446.00
A600PRD1	FAA TSO-C30b / FAA/PMA	Pos red, 14V, radio-shielded	11-03638	$462.00
A600PRD2	FAA TSO-C30b / FAA/PMA	Pos red, 28 V, radio-shielded	11-06335	$462.00
9000612	FAA TSO-C30b used on Cirrus	Pos green, 28V, radio-shielded,	11-07602	$447.00
9000613	FAA TSO-C30b used on Cirrus	Pos red, 28V, radio-shielded,	11-07603	$428.00

MODEL A650 PG/PR SERIES - Wing tip with anti-collision & forward position lights can be used to convert non-Whelen position lights into a position/anti-collision light system. The small size allows for mounting into a wing tip enclosure. Available in 14 or 28V and in a radio-shielded version. The forward position lamp is 26 watts. SPECIFICATIONS: • Weight: 0.6 lbs. (272gm) • Position Lamp Power Consumption: 2 amps @ 14V; 1 Amp @ 28V • Exposed Height: 2.4" (61mm) • Length: 4.0" (102mm) • Width: 1.7" (43mm)

Model #	Approvals	Description	Part No.	Price
A650PG14	FAA/PMA	Pos Grn, 14V	11-03217	$287.95
A650PG28	FAA/PMA	Pos Grn, 28V	11-03239	$292.95
A650PR14	FAA/PMA	Pos red, 14V	11-03218	$287.95
A650PR28	FAA/PMA	Pos red, 28V	11-03247	$314.00
A650PGD1	FAA/PMA	Pos Grn, 14V, radio-shielded	11-03639	$404.00
A650PGD2	FAA/PMA	Pos Grn, 28V, radio-shielded	11-06336	$387.00
A650PRD1	FAA/PMA	Pos red, 14V, radio-shielded	11-03642	$396.00
A650PRD2	FAA/PMA	Pos red, 28V, radio-shielded	11-06337	$403.00

MODEL 70946 SERIES - A combination LED forward position/strobe lights designed to replace the existing combination nav/strobe lights typically seen mounted on most general aviation and helicopter applications (ref Whelen A650PG/PR Series). (28VDC Only).

Green ..... P/N 11-05009 ..... $901.00
Red ..... P/N 11-05010 ..... $901.00

MODEL 90358 SERIES SELF-CONTAINED LEDANTI-COLLISION/LEDPOSITIONLIGHT ASSEMBLY - (For Fixed Wing, TSO-C96a Class II (400 ecp) 90358 series is a self-contained all LED wing tip mounted anti-collision/position light assembly utilizing LED's for both the anti-collision, forward & tail position lights, eliminating the need for a tail mounted position light. The LED's provide a significant reduction in current draw over conventional position light bulbs, and strobe power supplies. The all inclusive LED design virtually eliminates EMI/RFI interference. All current source and flasher circuitry is contained within the attached flasher box. SPECIFICATIONS: • LED Navigation Light Power Consumption: 0.25 amps @ 28 VDC EACH • LED Anti-Collision Light Power Consumption: 0.5 amps @ 28 VDC • LED Colors: Aviation Red, Aviation Green & Aviation White • Weight: 1.3 lbs. (590gm) • Exposed Height: 2.80" (71mm) • Exposed Width: 2.64" (67mm) • Exposed Length: 7.29" (185mm) •Depth: 3.00" (76mm) • Lens: Clear Hard Coated Polycarbonate

Model #	Approvals	Description	Part No.	Price
9035801	FAA TSO-C96a/TSO-C30c Typ II & III	Pos Grn, 28V	11-06170	$1,095.00
9035802	FAA TSO-C96a/TSO-C30c Typ I & III	Pos red, 28V	11-06171	$1,080.00

EL

VOLT AND VAC ALERT

*Provides an instantly recognizable voice warning directly in your headset if low vacuum (or pressure) or low voltage develops. * Includes a red warning light mounted close to the gyro instruments. Many aircraft are equipped with backup vacuum systems, however you must first know that your instrument power system has failed before any of these backup systems are engaged. You must "know you have a problem before you have a problem". Volt & Vac Alert consists of a small electronic unit that can be mounted anywhere in the aircraft. It connects to aircraft voltage, instrument power (vacuum or pressure), and the aircraft audio system. If the voltage falls below 12v or 24v the voice message "CHECK VOLTAGE CHECK VOLTAGE" will be heard. Should the gyro power fail, the pilot will hear the voice message "CHECK GYROS, CHECK GYROS" directly in his headset. The voice message will sound once, and then the red warning light will illuminate until the problem is fixed. The unit can be used in 12v or 24v aircraft with either vacuum or pressure gyro power systems. It can be installed in pressurized or un-pressurized aircraft. Sold as a complete assembly with everything necessary for the installation except a 1 amp fuse or circuit breaker. STC'd for most general aviation aircraft

P/N 10-00393.....$479.95

VOICE ALERT

Whenever the existing stall horn sounds, the pilot will hear the instantly recognizable voice message "STALL, STALL" from the built in speaker, and directly in his headset. If the gear warning horn sounds, the pilot will hear the voice message "CHECK LANDING GEAR, CHECK LANDING GEAR" alerting of the problem. No more confusion over which horn is sounding. These voice messages are in addition to the original horn sounds. The Voice Alert consists of a small electronic unit about 2-1/2" by 3-1/2" in size that can be mounted almost anywhere in the cockpit. Installed weight is less than 1 lb. Supplied as a complete kit consisting of the electronic unit, a pre-wired cable assembly, and all the connecters and mounting hardware. Requires is a 1 amp fuse or circuit breaker. Installation can be performed by an A&P mechanic or an avionics shop. The system is approved for both fixed and retractable gear aircraft.

Description	Part No.	Price
VOICE ALERT 2040-1-1 produces voice messages for gear and stall warnings, and can be programmed with up to 8 additional warning voices such as altitude, vacuum, fuel, pressures, etc. Supplemental system only.	10-03713	$623.00
VOICE ALERT 2040-1-2 produces stall and gear voice messages in the pilot's headset. Supplemental system only.	10-00394	$525.00
VOICE ALERT 2040-1-1P similar to the 2040-1-1 except approved for installation as primary replacement for existing warning units like Cessna Electronic Dual Warning units	10-03714	$785.00
VOICE ALERT 2040-1-2P similar to the 2040-1-2 except approved for installation as primary replacement for existing warning units like Cessna Electronic Dual Warning units	10-03715	$697.00
VOICE ALERT 2040-1-1 Custom Voice settings produces voice messages for gear and stall warnings, and can be programmed with up to 8 additional warning voices such as altitude, vacuum, fuel pressures, etc. Suppleamental system only.	10-04964	$723.00

GEAR WARNING SYSTEM (2048)

* Provides both voice and visual warning if the landing gear is not in the correct position for either a runway landing or a water landing. * Airspeed activated, activation speed is easily set from 45 to 90 mph. * Works with aircraft having 2, 4, or 8 gear indicating lights. Consists of a small electronic module (2.5 inch by 3.25 inch weighing less than 1 lb), and a panel mounted switch with light. Activation speed can be easily set using a screwdriver. Time delay is built in to prevent false triggering due to speed fluctuations. Pilot can perform a self test of the system. Can place in a disengage mode which temporarily disengages the system for slow flight. If the aircraft has flaps, a flap switch can be added to cause the landing sequence to be initiated whenever the flaps are fully extended. The unit also includes an airspeed activated switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. Expermental aircraft.

P/N 11-02258.....$584.00

POWER GUARD BUS MANAGEMENT SYSTEM

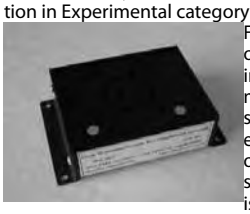
An essential bus management circuit designed to protect power sensitive and critical electronics. Starting currents are usually high enough to cause battery voltage to drop below tolerable limits for many electronics systems. The result could leave you without engine instrumentation until EFIS "reboots" (up to 30 seconds). Protection includes low voltage drop out and essential backup in the event of primary power loss. Filtration on the secondary supply and secondary battery charging are also an integral parts of the circuit. A secondary battery is required for the Power Guage we recommend a 5-12 Amp battery for emergency supply. Several control modes are possible with the system allowing for installation and operational flexibility. Load Ratings: 7A continuous, 10A 10% duty. Dims: 4.75"l x 2.75"w x 1.2"h P/N 11-02044.....$135.95

AMPHIBIAN GEAR WARNING SYSTEM

Designed to provide an additional margin of safety for amphibian pilots by providing a backup electronic means of verifying landing gear position for both water and runway landings. Consists of a small electronic box (about 2.5 inch by 3.25 inch weighing less than 1 lb) that can be mounted anywhere in the aircraft, and 2 panel mounted switches with lights. The system is activated by airspeed. The activation speed can be set by a simple screwdriver adjustment. On takeoff, as the airspeed exceeds the activation speed, the system becomes active. There is a time delay built in to prevent false triggering. When the system becomes active, the lights in the panel switches will illuminate for 6 sec, to alert the pilot that the system is active. The pilot can perform a self test. Can be temporarily disengaged for slow flight. As the aircraft slows below the activation speed for a landing, the landing sequence is initiated. Panel switches are marked "L" for land, and "W" for water. If the gear is in the correct position, the voice message "GEAR O.K." will be heard. If the gear is not in the proper position, the voice message "CHECK LANDING GEAR, CHECK LANDING GEAR" will be heard. This message will continue until the speed is increased above the activation speed, or the gear is placed in the proper position. When installed in aircraft having multiple gear indicating lights, the system will respond with the "CHECK LANDING GEAR" voice warning if it determines that any of the wheels are in the wrong position. Also responds with the warning if the gear indicating lights loose power. Also incorporates an airspeed activated electronic switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. Supplied as a complete kit consisting of the electronic module, a pre-wired, color coded cable, switches, connecters, mounting hardware etc. The only other item required is a 1 amp fuse or breaker. STC'd for many amphibian aircraft and aircraft on amphibian floats P/N 11-07537 .....$795.00

GEAR ALERT SYSTEM 2050

NOTE: This system is not FAA approved. It is intended for installation in Experimental category aircraft only.



For Experimental amphibian aircraft consists of a small electronic module (2.5 inch by 3.25 inch weighing less than 1 lb), and a panel mounted switch with light. The system is airspeed activated. The activation speed can be easily set using a screwdriver. On takeoff, once the speed has exceeded the activation speed, the system activates. A time delay is built in to prevent false triggering due to speed fluctuations. The light in the switch illuminates when the system is activated. The pilot can perform a self test of the system.Disengage mode which temporarily disengages the system for slow flight. During this period, the light in the switch flashes indicating the system is disengaged. Pushing the switch again re-engages the system. As the aircraft slows for landing, the system enters the landing mode. The light turns off, and the electronics then checks the gear position lights to determine the gear position. If the aircraft has flaps, a flap switch can be added to cause the landing sequence to be initiated whenever the flaps are fully extended. A switch can be added to the throttle so that closing the throttle with the gear up will cause the warning voice message to be heard. The unit also includes an airspeed activated switch which closes whenever the airspeed is above 45 mph. This can be used to activate a transponder, Hobbs meter etc. The unit is sold as a complete system including the electronic unit, a pre-made cable assembly, a pre-wired switch, connecters, mounting hardware etc. P/N 11-07538.....$558.00

GEAR ALERT

The Gear Alert uses an electronic sensor to detect the presence of the ground during landing. If the wheels are up, it instantly sounds a voice warning directly into your headset. It is a full time positive warning system and does not depend on throttle position or airspeed for operation. Gear Alert is supplied as a complete kit with all mounting hardware, doubler plates, connectors, and a pre-wired and tested cable assembly for fast and easy installation. 1 yr warranty. FAA Approved. STC's for most single and twin engine aircraft including Cessna up through the 400 series, Beech uo through King Air series, Piper up through the Chieftain, Mooney and others.

P/N 11-21135 .....$1,438.00

EL

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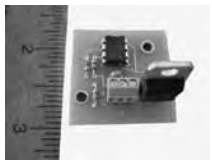
INTERCOM GEAR WARNING DEVICE

A small electronic device that can be connected to either the landing gear throttle warning switch or the Flap UP Light or Switch and the Landing Gear Down Light or Switch. The pilots headphones are connected to the audio circuit in the IGWD II and should an unsafe condition occur, a loud pulsing tone is heard in the pilots headphones. In the single input mode, Throttle gear safety switch, if the throttle is reduced and the gear is Up, the IGWD II will sound. The two input mode with the flap UP light and the landing gear down light connected to the sensing inputs, provide added safety by ensuring that the landing gear is down before the flaps are lowered. Should the flap UP light go out before the landing gear Down light is on, the warning tone will be enabled. In addition to the warning tone, a warning light output is available for a panel mounted light as well as a Test Switch input. Small size: 3.2"L x 2.3"W x 1.0"H •Adjustable Tone Level •Input triggering for Throttle switch or Landing Gear and Flap Lights or Switches •Remote Test Switch Option •Remote Warning Light •DC voltage range 12 to 28 VDC •Weight, 10 oz •Two Year Warranty •Not Approved for Certified Aircraft.

P/N 11-01943 ..... $210.95

GRETZ AERO AUDIO WARNING TONE GENERATOR



The Gretz Aero GA-TB2 is a very small audio tone generator used to make an audio tone annoucement through your headset advising of a user selected warning function. This warning tone can be used to get your attention for one of a variety of events.

P/N 11-06491 ..... $49.95

GRETZ AERO AUDIO MIXER

The Gretz Aero GA-AM Audio Mixer is a must have economical item if you have two or more audio sources in your aircraft. If you do not want to install a very costly and panel-space-hungry audio panel, the GA-AM is for you. The GA-AM is light, small and mighty for what it does. It can be mounted out of sight behind the panel in any convenient location with no clumsy modules to have to tie up into your wire harness. Up to nine audio sources can be fed into this device. All of the audio sources are wide range adustable for balance to your system. There is even a wide range output level adjust to make the GA-AM compatable with all intercoms without having to tinker with matching resistors.

P/N 11-06490 ..... $149.50

DIGITAL VOLTAGE MONITOR

Helps pilots monitor critical electrical system. STC approved. Features a Multi Color LED display, which is easily viewable from a wide angle. In the event of an alternator/generator failure, the LED display indicates the reserve battery capacity. The display automatically adjusts to the ambient light for IFR or night operation and also serves as a reminder to turn off the electrical system after flight. Comes in either 12V or 24V models and includes all necessary hardware and FAA Documents. The display must be set to Dot mode for FAA approved installations.

12 Volt Digital Voltmeter ..... P/N 10-00752 ..... $149.00
24 Volt Digital Voltmeter ..... P/N 10-00753 ..... $149.00

KELLY MANUFACTURING CO. LOW VOLTAGE WARNING SYSTEMS

An amber light will come on at the moment of low voltage condition which will inform the pilot of attention needed to the alternator, generator, or voltage regulator. Any of these conditions allowed to continue will result in a weak or completely discharged battery condition and loss of radio and electrical equipment. Indicator light features a built in dimmer and press to test with amber lens. Lights will trigger at 13 volts for 14V systems and 25 volts for 28V system. Accuracy, plus or minus 0.2 volts. Size: 1/2" Dia. 3" Depth required behind panel. Weight: .2 lbs., Power: less than 1/10 amp. Fuse supplied with kit.

Model No.	Description	Part No.	Price
33-2013A	14 Volt, Red Lens Low Voltage Warning System	10-02572	$179.75
33-2013	14 Volt, Amber Lens with Dimmer Low Voltage Warning System	33-2013	$179.75
33-2025A	28 Volt, Red Lens Low Voltage Warning System	10-02573	$179.75
33-2025	28 Volt, Amber Lens with Dimmer Low Voltage Warning System	33-2025	$179.75

SKYSPORTS BRIGHT STAR STROBE

Measuring only 4" high by 2 3/4" diameter, it weighs less than 5 ounces! Special dual xenon flashtube arrangement provides ultra-bright flash visible for over 3000' in daylight, much more at dusk and dawn. No separate power pack is required, all electronics are fully contained in the strobe itself. Lens is available in clear, red or green. Each strobe draws less than 300ma. Mounting bracket included. Buy two for wing-tip installation. Must be run from 12 volt battery. Dimensions: 4"x 2.75"(dia) Weight: 4.5 ounces. Features: • Operates on 12VDC (12' lead is hardwired to unit) • Completely self-contained • Water-resistant • Ultra-compact • Meets FAR 103 • Bright 8 joule flash
40 flashes/minute

Strobe 12VDC Clear ..... P/N 11-07769 ..... $47.95

ACCESSORIES

Strobe Lens Clear ..... P/N 11-07772 ..... $4.75
Strobe Lens Red ..... P/N 11-07770 ..... $4.75
Strobe Lens Green ..... P/N 11-07771 ..... $4.75

MINIATURE AEROFLASH ANTI-COLLISION SYSTEM

Mounted on vertical fin of many Cessna and other production aircraft models. Fully FAA-PMA approved. Only 2.5" dia., 2.5" high. Weighs 6 oz. Unit available with red or clear Fresnel dome. Has 125W quartz bulb. Draws 10 amps nominal at 12V. Use 12 or 14 Ga. wire for hookup. Kit consists of light assembly and 12V/24V power supply. Specify bulb voltage and red or clear dome.

12V Kit (Clear Lens)157-0001C ..... P/N 11-05906 ..... $124.95
12V Kit (Red Lens) ..... P/N 157-0001R $124.95
24V Kit (Clear Lens)157-0002C ..... P/N 11-05907 ..... $124.95
24V Kit (Red Lens) ..... P/N 157-0002R $124.95

Description	Ref No.	Part No.	Price
Flasher	A	150-0015	$59.75
Red Lens	B	111-0001	$13.50
Clear Lens	C	111-0004	$12.90
Quartz Lamp 24 Volt/150W	D	040-0003	$22.00
Quartz Lamp 12 Volt/125W	D	040-0028	$21.60
Gasket	E	080-0001	$7.65
Clamp Ring	F	073-0002	$8.75
Socket & Plate Assembly	G	073-0021	$10.95
Mounting Plate Assembly	H	073-0055	$25.90
Aeroflash Resistor 100 W	-	012-7426	$28.85

MINIATURE AEROFLASH SINGLE LIGHT STROBE

A high-intensity anti-collision strobe system producing 10 joules. FAA-PMA approved. Mount on top or belly of fuselage or on vertical fin. The Xenon lamp is designed to produce symmetrical illumination pattern of light 360° around the aircraft and 70° above and below the horizon. Less than 3" dia., 2-1/2" high. Mounts in 7/8" dia. hole and is secured by two screws. Draws 2 amps nominal at 12V. Kit includes light, remote power supply and 15 ft. cable. Light has clear Fresnel lens and strobe tube. Wts: Light 6 oz., Power Supply 20 oz. Hardware NOT included.

12V Kit ..... P/N 156-0007 ..... $153.95
24V Complete Kit ..... P/N 156-0002 ..... $153.95
12V Power Supply ..... P/N 152-0007 ..... $93.95
24V Power Supply ..... P/N 152-0010 ..... $93.95
Flash Tube Only ..... P/N 073-0141 ..... $31.50
Flash Tube Ass'y ..... P/N 153-0001 ..... $98.50

AEROFLASH TWO-LIGHT STROBE KIT

Solid State Power Supply for each wing tip. Complete with two power supplies, two strobe tubes, lenses and retainer. Specify 12-14V or 24-28V. FAA approved . Used on Grumman aircraft.

Kits consist of:	Part No.	Price
(2)-152-007, 12V Power Supply, (2)-153-008, Light Assy.	156-0010	$329.00
(2)-152-0010, 24V Power Supply, (2)-153-0008, Light Assy.	156-0011	$353.00
(2)-152-0021, 24V Power Supply Explosion Proof, (2)-153-0008, Light Assy.	156-0011EX	$359.00

AEROFLASH NAV/ STROBE LIGHT KITS

These non-PMA'd remote nav/strobe light kits are excellent for ultralights and homebuilts. Kit includes one red light assembly, one green light assembly and two power supplies.

Single flash, 12V kit ..... P/N 156-0039-12V $374.95
Single flash, 28V kit ..... P/N 156-0039-28V $364.00
Double flash, 12V kit ..... P/N 11-04762 ..... $396.95

AEROFLASH NAV/STROBE/POS. LIGHT KITS

These non-PMA'd remote nav / strobe /position light kits are excellent for ultralights and homebuilts. Kit includes one red light assembly, one green light assembly and two power supplies. The nav lights include clear position lights on rear of assemblies.

Single flash, 12V kit ..... P/N 156-0049-12V $446.00
Single flash, 28V kit ..... P/N 156-0049-28V $442.95
Double flash, 12V kit ..... P/N 11-04763 ..... $464.95

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AEROFLASH STROBES

AEROFLASH FAA/PMA AIRCRAFT APPROVAL LIST

Aeroflash Original P/N	Current P/N	Manufacture P/N	Description	Aircraft Installation Eligibility	Price
40-6	040-0003	G.A.A.C P/N	24V/150W QUARTZ LAMP	AA1B, AA5A, AA5B	$22.00
40-0010	040-0028		12V/125W Bulb		$21.60
150-0002	Same		14V Single or Dual Flasher	AA1B, AA5A, AA5B	$109.75
151-0001	Same		14V Light Assembly, Red Lens	AA1B, AA5A, AA5B	$64.75
152-0004	152-0007		14V Power Supply	AA1B, AA5A, AA5B	$93.95
153-0008	Same		Strobe Assembly	AA1B, AA5A, AA5B	$112.95
073-0270	Same	Varga P/N	U-Type Flash Tube Assembly	2150A	$38.70
152-0004	152-0007		14V Power Supply	2105A	$93.95
152-0008	152-0007		12V Power Supply Single Flash		$93.95
150-0015	Same	Rockwell P/N DVA-2	14V or 28V. Single, or Dual Flasher, DVA-2	112, 112B, 112TC, 112TCA, 114	$59.75
151-0001	Same		14V Light Assembly Red Lens	112, 112B, 112TC, 112TCA, 114	$64.75
150-0015	Same	Great Lakes P/N DVA-2	12V.-14V. or 24V.- 28V. Sgle or Dual Flsr ,DVA-2	2T-1A-1,-2	$59.75
151-0001	Same		14V Light Assembly Red Lens	2T-1A-1, -2	$64.75
40-6	040-0028	C17312-3	12V/125W Bulb	150, 172, 177, 177RG, 180,	$21.60
40-0010	040-0028		12V/125W Bulb	182, 185, 188, 206, 207	$21.60
40-14	040-0003	C17312-1	24V/150W QUARTZ LAMP	210, 337, 28 Volt Version of	$22.00
40-0027				185, 188, 206, 207	
73-0165	073-0270	C622006-0108	U-Type Flash Tube	150, 172, 177, 177RG, 180	$38.70
111-0016	Same	C622006-0103	Wing Tip Clear Dome	150, 172, 177, 177RG, 180, 182, 185, 188, 206, 207, 210	$19.90
150-0008	Same	C594501-0204	28 Volt Single or Dual Flasher A2E	337	$109.75
150-0010	150-0015	C594502-0102	14V or 28V. Single/	150, 172, 177, 177RG, 180,	$59.75
			Dual Flasher DVA-2	185, 188, 296, 207, 120	
151-0002	151-0001	C621001-0106	14V Lamp Assembly	150, 172, 177, 177RG, 180,	$64.75
			Red Lens X1E-6	182, 185, 188, 206, 207	
151-0006	151-0005	C621001-0102	28V Lamp Assembly	210, 337, 28 Volt Version of	$118.95
			Red Lens X2E	206, 207, 185, 188	
152-0004	152-0007	C622008-0101	14V Power Supply	150,172,177,177RG,180,182,185,188,206,207,R172,210	$93.95
152-0010	152-0010	C622008-0102	28V Power Supply	210, 28 Volt Version of 185, 188, 206, 207, R182, 150, 172, 177, 177RG, 180, R172	$93.95
153-0006	153-0009	C622006-0107	Wing Tip Strobe Assembly	150, 172, 177, 177RG, 180, 182, 185, 206, 207, 210	$98.85
151-0008	11-02103	Not FAA Approved	24-28V Red Tear Drop Lt Assy	Helicopter	$203.95
151-0009	11-02104	Not FAA Approved	24-28V Red Light Assy w/ Mt Plate	Helicopter	$111.95

AEROFLASH TAIL STROBE/ POSITION LIGHT KIT

This non-PMA'd kit for experimental aircraft only includes (1) 12V clear lens assy. & (1) 12V single flash remote power supply. output 10 joules.

Model 156-0029SF Kit.....P/N 11-00979..... $243.95
Replacement Clear Dome.....P/N 111-0018..... $32.50
Replacement Gasket.....P/N 11-00981..... $5.90
Replace. Flashtube w/pos. lamp.....P/N 11-00982..... $136.95

AEROFLASH FUSELAGE MOUNT SYSTEM

P/N 156-0017 consists of: $157.95
One-152-0007 12 Volt Power Supply
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

P/N 156-0018 consists of: $157.95
One-152-0010 24 Volt Power Supply
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

P/N 156-0018EX consists of: $168.75
One-152-0021 24 Volt Power Supply Explosion Proof
One-163-0001 Light Assembly
One-073-0217 Cable Assembly

Spare Parts for Light Assemblies:

Ref #	P/N	Description	Price
A	152-0007	12V Power Supply Clear Anodized	$93.95
	152-0010	24V Power Supply Gold Anodized	$93.95
	152-0021	24V Power Supply Explosion Proof Blue Anodize	$106.75
B	073-0271	Cable Assembly	$6.50
C	073-0055	Mounting Plate Assembly	$25.90
D	101-0020	Hold Down Ring	$6.80
E	080-0008	Gasket	$8.50
F	073-0141	Strobe Flashtube	$31.50
G	111-0001	Red Lens	$13.50
	111-0004	Clear Lens	$12.90
H	080-0001	Gasket	$7.65

AEROFLASH NAVIGATION/STROBE COMBINATION SYSTEM

Red.....P/N 156-0019R..... $520.00
Green.....P/N 156-0019G..... $558.00

Spare Parts:

Ref #	P-N	Description	Price ea.
A	152-0024	24V Power Supply	$175.95
B	111-0068	Clear Dome	$42.70
C	040-0043	Strobe Flashtube	$62.85
D	101-0238A	Hold Down Bracket	$13.85
E	111-0066	Red Navigation Dome	$24.95
	111-0067	Green Navigation Dome	$24.95
F	040-0046	24V Navigation Lamp	$23.99
	040-0048	12V Navigation Lamp	$39.90
	*080-0046	O-Ring Gasket	$9.80
	*080-0042	Flange Gasket	$10.80

*Not Shown

AERO FLASH PIGGYBACK WING TIP STROBES

Original equipment on many Cessnas. Kit includes two strobe units with wiring which mount on Grimes Model "E" wing position lights (not furnished), two power supplies which mount on wing tip ribs, and two lens retainers. Strobes simply plug into power supplies - no interconnecting cables. Draw just 2.5 amps mominal at 12 volts.

P/N 156-0003 consists of: $278.95
Two-152-0007 12 Volt Power Supply
Two-153-0009 Light Assembly

P/N 156-0004 consists of: $278.95
Two-152-0010 24 Volt Power Supply
Two-153-0009 Light Assembly

P/N 156-004EX consists of: $283.95
Two-152-002124 24V Power Supply Explosion Proof Ideal for wet-wing aircraft
Two-153-0009 Light Assembly

Ref #	P/N	Description	Price ea.
A	152-0007	12 Volt Power Supply Clear Anodized	$93.95
	152-0010	24 Volt Power Supply Gold Anodized	$93.95
	152-0011	12 Volt Double Flash Power Supplies (each draws 2.7 amps and weighs 1.33 lbs.)	$98.85
	152-0021	24V Power Supply Explosion Proof Blue Anodize	$106.75
B	073-0270	Strobe Flashtube	$38.70
C	101-0084	Lens Retainer	$13.90
D	080-0018	Gasket	$13.95
E	111-0016	Clear Dome	$19.90

AEROFLASH REPLACEMENT FLASHERS

P/N 150-0002 consists of: $109.75
12 Volt Single and/or Dual Flasher
Replaces Old Style Flashers in Cessna Aircraft

P/N 150-0003 consists of: $109.95
24 Volt Alternating Flasher Replacement for Helicopters

Aeroflash flashing lights have been used on Cessna aircfaft since 1964. The strobes have been original equipment since 1977 on Cessna, Varga and Aero Commander.

P/N 150-0008 consists of: $109.75
24 Volt Single and/or Dual Flasher
Replaces Old Style Flashers in Cessna Aircraft

P/N 150-0013 consists of: $109.75
24 Volt Single Flasher

AEROFLASH 12V NAV/STROBES

Model 073-0530R(G) Light Assemblies. 4 oz.
Red.....P/N 11-00143..... $118.95
Green.....P/N 11-00144..... $118.95

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

STROBES – POSITION LIGHTS - LED LIGHTS

ILLUSION AIRCRAFT STROBE

Powered by the lighting coil of Rotax and other two-cycle engines, this is the most efficient strobe light on the market because it uses only the power normally wasted by the voltage regulator in a battery charging system. It has no effect on the charging system, so you can still connect other equipment to the lighting coil. The two strobe lights flash alternately an average of 55 times per second. Lesser strobe systems fire their lights simultaneously, resulting in a much longer firing cycle because the lighting coil can only develop so much power in a given time. The illusion Strobe use a specialized prismatic Fresnel lens. This lens increase the strobe's effective light intensity up to 8 times. The illusion Strobe works with the new Rotax 170W dual-ignition lighting coils and the standard 125W single-ignition type. It meets Part 103 requirements to add to an extra hour of legal flying time each day. The illusion Strobe comes with 2 lights rated at 25 joules; driver, wire, hardware, instructions, and a two-year manufacturer's warranty.

Dual Wingtip Strobe Sys..... P/N 10-00819 ..... $291.95
Single Strobe System..... P/N 11-05911 ..... $177.95

FLIGHT STROBE FS 4400

This precision compact unit mounts easily on top or below fuselage, and directly replaces rotating beacons. It features a high-intensity Xenon arc lamp, a high-efficiency push pull inverter circuit for stable flash voltage and a flame-resistant military circuit board assembly. The lamp is readily replaceable without removing the unit from the aircraft, and the unit weighs only 1 lb. 4 oz. The Flight Strobe FS-4400 is visible for over 50 miles at night, in haze, smog or bright sunlight and is manufactured using the highest quality components for maximum reliability and service life. Amp draw 3 Amp. (14V) & 1.5 Amp (28V). STC'D for Cessna 180. FAA form 337 for field approval is required for installation of other certified aircraft. Order adapter separately.

14V (FS-4400-14V)..... P/N 11-01018..... $217.95
28V (FS-4400-28V)..... P/N 11-01019..... $236.95
FS-4400 Adapter..... P/N 11-06500..... $17.95
FS-227 Repl. Bulb 14V/28V..... P/N 11-06510..... $39.95
FS-210C Clear Lens..... P/N 11-01024..... $23.25
FS-210C/R2 (1/2 Clear-1/2 Red)..... P/N 11-01026..... $41.85
FS-210R Red Lens..... P/N 11-01021..... $24.85
Fuse for FS-4400..... P/N 11-02027..... $2.75

LED BASED LIGHTS

8000 SERIES (LED) ANTI-COLLISION BEACON - LED based self-contained, High Impact Polycarbonate Optical Lens. Lighter, Brither, Cooler Longer Life (up-to 50,000 hrs.) and draws less than 1 amp. (.13 amps) @ 12vdc. Weighing in at 3.5oz. it stands 3" high and 2.5" in diameter.

P/N 11-07241 (Red)..... $79.85
P/N 11-07246 (Clear)..... $79.65

MODEL 918TL (LED) TAIL LIGHT TL918 TAIL LIGHT - LED based Tail Light that weighs only 1.5oz. High Impact Polycarbonate Optical Lens. Up-to (50,000 hrs.) life. Draws .13 amps @12vdc. It measures approximately 1.6" high and 1.4" diameter. P/N 11-07242..... $96.75

MODEL 927ACB (LED) ANTI-COLLISION BEACON - Completely Self-Contained LED Based Anti-Collision Beacon 927ACB - RED High impact polycarbonate optical lens. Up-to (50,000 hr.) life. Draws .14 amps@12vdc. It measures approximately 1.6" high and 1.4" diameter. That's right, it is in the same package as the Tail Light! Lighter, Brighter and Cooler, and weighs only 1.6 oz. Flasher included.

P/N 11-07243 (Red)..... $109.75
P/N 11-07244 (Clear) $114.50

REPLACEMENT LAMPS FOR NAVIGATION LIGHTS

Upgrade your Indicating, Position, or Recognition lights to LED's. These lamps fit standard S.C. Bayonet Indexed Base Sockets (Bay15S). Converts common Incandescent Lamps to LED Lighting without modifications. (Use a new clear plastic lens for maximum brightness) and you are ready to go. They last longer, run cooler, and draw less than .15amps. Non-PMA.

Description	Part No.	Price
LED75 12V Red Lamp	11-07744	$33.75
LED75 12V Green Lamp	11-07745	$33.75
LED75 24V Red Lamp	11-07746	$33.75
LED75 24V Green Lamp	11-07747	$34.85
LED75 TPL-12 Tail Position Lamp	11-07748	$34.65
LED75 TPL-24V Tail Position Lamp	11-07749	$33.75
Combination Tail and Beacon Lamp 12V	11-12042	$135.75
Combination Tail and Beacon Lamp 24V	11-12043	$135.75
Replacement Lamp Only 12V	11-12040	$75.00
Replacement Lamp Only 24V	11-12041	$78.75

WHELEN WING LIGHTS

W1285

W1250

W1285 series are the same design as Grimes Model E. Available with red or green lens and 12V or 24V bulb. W1250 PG/PR are FAA approved position lights and are designed to fit underneath the wing tip fairings.

W1285		
14V Green W1285 Assembly	11-03226	$329.00
28V Green W1285 Assembly	11-03891	$340.00
14V Red W1285 Assembly	11-03224	$329.00
28V Red W1285 Assembly	11-03283	$339.00
W1250		
14V Green W1250 Assembly	11-04263	$189.75
28V Green W1250 Assembly	11-03278	$189.75
14V Red W1250 Assembly	11-04264	$189.75
28V Red W1250 Assembly	11-03282	$189.75
Replacement Bulbs		
14V W1290 Bulbs	11-02602	$38.90
28V W1290 Bulbs	11-02604	$29.90

Model B wing

GRIMES MODEL B - Early type wing light with flat mounting pad. Mounts on tip of wing. Wt. 7oz Order by part number.

SINGLE CONTACT -

w/#93 Bulb New Surplus..... $150.85
Green, 14V..... P/N A-2430-1-G
Red, 14V..... P/N A-2430-1-R

STEEL FORMED NAVIGATION LIGHT PLATES

Wing tip light plate is welded or screwed to wing tip bows to attach teardrop type position lights. Tail light plate is welded to rudder to attach Model S tail light.

Model E Wing Light Plate..... P/N 11-06900..... $28.50 ea
Model S Tail Light Plate..... P/N 11-07000..... $27.50 ea

"C-LITE" WING TIP NAV LIGHT INDICATORS

These indicators identify your wingtips when taxiing at night, and assure your nav lights are working. Installs in minutes with just a screwdriver, and you don't disconnect the lights to do it. Works with high-or-low-wing aircraft, thick wing too. Designed for use with Grimes #A-1285 & #B-6345 nac lights, which means practically all aircraft.

P/N 5122..... $11.85

GRIMES TAIL LIGHTS

GRIMES MODEL S - For tailcone or rudder installation. Wt. 3 oz. Single contact. 15 Candlepower. For 12V use, order #93 bulb
PN 11-04199 ..... P/N 11-03652..... $168.75

GRIMES EARLY MODEL C - Mounts on trailing edge of rudder. Wt. 5 oz. Double contact. 15 Candlepower. For 12V use, order #94 bulb
PN 11-04200
Model B-1943-4 (New Surplus) ..... P/N 11-07200..... $257.95

REPLACEMENT PARTS FOR POSITION LIGHTS

Lenses for Grimes A, B, C Wing or Tail Lights
Clear..... P/N 11-03662..... $43.70 Red..... P/N 11-03655..... $43.85
Green..... P/N 11-03663..... $44.60
Lenses for Grimes Model E or Whelen Wing Tip Lights
Red..... P/N 11-02754..... $25.75 Green..... P/N 11-02755..... $25.75
Lens for Model S Tail Light (Clear) ..... P/N 11-07400 ..... $36.95
Bale Wire - Grimes..... P/N 11-03664 ..... $17.65

T1284PC CLEAR LENS

T1284PC-Clear, polycarbonate lens high impact polycarbonate optical lens, for use with new LED lights. Direct replacement for your standard red, green and clear glass navigation lens. Use with standard 1283 nav lens gasket.

P/N 11-09299..... $14.75

EL

AVEOFLASHLP™ LSA - WING NAVIGATION/ POSITION/STROBE LED LIGHTS

The e-series AveoFlash LSA™ is the incredibly popular light of the light sport, kit, experimental and ultralight industry. At only 83 grams, and an extremely aerodynamic shape and minimal footprint, the AveoFlashLP LSA light is now standard on most leading S-LSA and kit planes. With synchronization as a standard feature, the LSA light is a complete solution for navigation, position and strobe to all international aviation requirements and standards. Available with a variety of mounting adapters and custom composite fairings, the LSA light is extremely easy to install. Encapsulated in the exclusive AveoDiamidium™ formulation, the e-series AveoFlashLP LSA wing lights are virtually unbreakable and with Aveo's exclusive aircraft lifetime warranty there is no risk to the owner that he will ever need to buy another set of wing lights again. Current consumption (for 12V): steady 0.24A flash 1.65A (@ 200ms). For Experimental Use Only..... P/N 11-07360..... $672.00

AVEOMAXX 6-IN-1 LANDING LIGHT

AveoEngineering introduces the exclusive next-generation AveoMaxx™ Premiere 6-in-1 embedded wingtip light solution (Landing-Taxi-WigWag, Nav-Pos-Strobe wing lights not included and must be purchased separately). Unlike all the "Brand X" LED landing light products out there, which are just a collection of commercial TIR lenses placed over some industry standard single LEDs, the AveoMaxx™ is the world's first ultra-high power LED landing light module, incorporating the amazing Aveo MaxiChip™ power and performance. The AveoMaxx™ uses far less power than competitive products illuminated by mercury-arc, high intensity discharge, or halogen lamps, which means they help to reduce air pollution from carbon emissions. Mercury and Lead-free, this RoHS compliant environmentally - friendly technology helps reduce power consumption and the amount of hazardous waste entering the environment. Finally, a "green" aircraft light! For Experimental Use Only..... P/N 11-09675..... $595.00

AVEO E-SERIES LP AURORA ANDROMEDA

Thoroughly and rigorously tested to the latest DO-160F environmental testing standards. Ideal for aircraft that want to be seen at the maximum distance possible, while still enjoying extremely low electrical draw and the absolute minimum drag profile. Dimensions (inches):5.31" x 1.33" x 1.02". Weight (oz): 3.17 oz. Operating Voltage Range: 9 – 32 Vdc. Recommended size of mounting screw: M3. Supplied cable: Wire Type is AWG 20 / 0.812 mm / Length of pigtail wires is 7 inches / 177,8 mm. Reverse polarity protected: YES. Over voltage protected: YES. Waterproof: YES. Vibration-proof: YES. Shock-proof: YES. Dust-proof: YES. Exclusive aircraft lifetime warranty there is no risk to the owner that he will ever need to buy another set of wing lights again. For Experimental Use Only..... P/N 11-08427..... $1,150.00

AVEO ANDROMEDA AURORA NAV / POSITION / STROBE

The special embedded version has the rear position/strobe lights removed from the circuit in order to be EMBEDDED in a wingtip lens enclosure mount, and must be used with a rear position/strobe such as the PosiStrobe CP. This light also has a custom adapter to permit mounting on the AveoMaxx landing light shroud module to create a 6-in-1 nav/position/strobe/landing/taxi/wigwag total solution. Incorporating special highly reflective chrome reflectors that are designed with special software to optimize angular intensities to design requirements, the Andromeda lights are ideal for aircraft that want to be seen at the maximum distance possible, while still enjoying extremely low electrical draw and the absolute minimum drag profile. Encapsulated in the exclusive AveoDiamidium™ formulation, the Andromeda lights are virtually unbreakable and with our exclusive aircraft lifetime warranty there is no risk to the owner that he will ever need to buy another set of wing lights again. Andromeda lights are available with a series of custom mounting adapters to fit many popular aircraft wingtips. For Experimental Use Only.

P/N 11-10632..... $1,150.00

AVEO ULTRA EMBEDDED 2-IN-1 POSITION/STROBE LED LIGHT

The Ultra has also become the leading winglight solution for numerous military and law enforcement/ surveillance UAVs around the world and is very popular with aircraft manufacturers. Encapsulated in the exclusive AveoDiamidium™ formulation and with our goniophotometer-optimized chromed reflector system, the Ultra wing lights are virtually unbreakable. Our exclusive aircraft lifetime warranty means there is no risk to the owner that he will ever need to buy another set of wing lights again. Packed with 27 ultra high brightness LEDs that are the industry state-of-the-art in performance and output lumens, the Ultras still feature the same tiny footprint the popular Aveo e-series wing lights have become so well-known for in the aviation world. Ultra Embedded wing lights (pair) - green/red for navigation and strobe (no rear position light - for embedded applications). For Experimental Use Only. P/N 11-08135..... $778.00

AVEO POWERBURST LIGHT SET

At only 22 millimeters in height (0.86 inch) the new PowerBurst™ is a value light that does not sacrifice anything in performance or standards as other economy-priced lights offered by the competition. The exclusive and highly advanced optics and chrome reflector system, our unmatched power and led management circuitry and our famous lowest-drag profile in the industry are all combined into a product that gives you unmatched POWER and FEATURES. Features: • 3-in-1 Nav/Position/Strobe • extremely lightweight at 60 grams / 2.116 oz. • No external power supply or strobe unitlight synchronization feature • Unbreakable Diamidium™ encapsulation • Unmatched circuit technology advanced computer and goniophotometer engineered optics • Unbreakable • Waterproof • Vibration-proof • Shock-proof • Dust-proof • Meets ALL DO-160F Environmental Standards For Experimental Use Only. P/N 05-04877..... $479.00

AVEO ULTRA AURORA™ 3-IN-1 NAV/POSITION/STROBE LED LIGHTS

The Ultra Aurora™ is the higher-output version of the incredibly popular e-series LSA wing lights. Packed with 30 ultra high brightness LEDs that are the industry state-of-the-art in performance, the Ultras still feature the tiny footprint the e-series wing lights have become so well-known for, at only 84 grams they are also unbreakable like all Aveo aircraft lights. The Ultra lights are a very popular choice for light sport and general aviation aircraft, due to its compact design and easy installation. With full optical testing for brightness and chromacity, the Ultra also completed the rigorous DO-160F testing regime exceeding all requirements. The Ultra has also become the leading winglight solution for numerous military and law enforcement/surveillance UAVs around the world. Encapsulated in the exclusive AveoDiamidium™ formulation, the Ultra wing lights are virtually unbreakable and with our exclusive aircraft lifetime warranty there is no risk to the owner that he will ever need to buy another set of wing lights again. For Experimental Use Only.

P/N 11-07933..... $778.00

AVEO POSISTROBE XP™ TAIL / RUDDER LED LIGHT

• 2-in-1 Position & Strobe light ideal for tail, rudder or rear facing mounts • Optics designed for FAA/ICAO/ EASA requirements • 9-32 volt input range • No external power supply or strobe unit, an Aveo world first • Light synchronization feature • Minimum drag profile • Unbreakable Diamidium™ encapsulation • Exclusive limited aircraft Lifetime Warranty • Unmatched circuit technology • Advanced computer and goniophotometer engineered optics.

Red - 9-32V..... P/N 11-08127..... $409.00
White - 9-32V..... P/N 11-08134..... $394.00

AVEO POSISTROBE XP™ TAIL / RUDDER LED LIGHT

• 2-in-1 Position & Strobe light ideal for tail, rudder or rear facing mounts • Optics designed for FAA/ICAO/EASA requirements • 9-32 volt input range • No external power supply or strobe unit, an Aveo world first • Light synchronization feature • Minimum drag profile • Unbreakable Diamidium™ encapsulation • Exclusive limited aircraft Lifetime Warranty • Unmatched circuit technology • Advanced computer and goniophotometer engineered optics P/N 11-07361..... $299.00

AVEO REDBARON MAXI LED ANTICOLLISION LIGHT

The RedBaron Maxi™ version incorporates 40 of the brightest LEDs available in the world today, with chromacity and intensity compliant to all international aviation and safety standards. Ideal replacement unit for any anticollision light system in existence. Extremely light weight, 9-32 volt DC input range No external powersupply or strobe unit, Lightsynchronizationfeature, Minimumdragprofile, Unbreakable Diamidium™ encapsulation Exclusive Life time Warranty, Unmatched circuit technology Advanced computer and goniophotometer engineered optics. White..... P/N 11-08425 ..... $739.00

AVEO POSITAIL NANO STROBE

If your aircraft has an extremely thin and streamlined empennage, the PosiTail Nano™ is the ultimate solution! As the world's smallest position and strobe light assemblies that meet all DO-160F and FAR requirements, this light will make your aircraft legal for night flying if your wing lights are not parallel to your aircraft centerline due to wingtip shapes. GreenAir™ earth friendly aviation lighting..... P/N 11-11551 ..... $389.00

AVEO STROBETAIL NANO STROBE

If your aircraft has an extremely thin and streamlined empennage, the StrobeTail Nano™ is the ultimate solution! As the world's smallest position and strobe light assemblies that meet all DO-160F and FAR requirements, this light will make your aircraft legal for night flying if your wing lights are not parallel to your aircraft centerline due to wingtip shapes. GreenAir™ earth friendly aviation lighting.

P/N 11-11552..... $389.00

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AVEO RED BARON MINI LED LIGHT

The RedBaron Mini™ is a cousin to the RedBaronXP™, the world's smallest and brightest total coverage LED anticollision light. The new RedBaron Mini™ resulted from requests by high-performance racing aircraft, super lightweight UAVs in the defense industry, and aircraft/helicopter manufacturers who wanted an upper and lower anti-collision light due to mounting area constraints. The answer came in this incredible new light, only 27 mm high and only 110 grams in weight. Exceeding all TSO intensity requirements and all DO-160F environmental requirements, the RedBaron Mini™ is now the world's smallest anti-collision light.

White ..... P/N 11-10534 ..... $489.00
Red..... P/N 11-10535 ..... $489.00

REDBARONXP™

Incorporates 36 of the brightest LEDs available in the world today.

White..... P/N 11-08423 ..... $576.00

AVEO GALACTICA RED BARON XP

The RedBaron XP™ version incorporates 36 of the brightest LEDs available in the world today, with chromacity and intensity compliant to all international aviation and safety standards. The ideal replacement unit for any anticollision light system. Exclusive Aveo internal reflection system . Your aircraft will be seen farther away than any other lighting system in the market.

Red Baron XP..... P/N 11-11554 ..... $853.00
Mounting Adapter..... P/N 11-11553 ..... $84.00

AVEO REDBARON ADAPTER

If you are replacing a Whelen anticollision light, this adapter by Aveo is designed to match up perfectly with your existing mounting site.

Adapter works for following Whelen models:

• A450 • A470A • 7108001 • 7108006 • 7108051 • 7105500 • 7105501 • 9052001 • 9052051

Specifications: Universal holes (4x1.75" x 4x1.625", 4x1.25"). Color: Silver..... P/N 11-10631 ..... $73.75

AVEO REDBARON MAXIMINI RECOGNITION LED LIGHT

Introducing the Aveo MaxiMini™ - the ultimate recognition light. Spawned from the incredible technology of the incredible and unmatched RedBaron™ AntiCollision series, the new MaxiMini™ is the world's brightest and smallest recognition light, at only 27 mm high and weighing only 85 grams. The MaxiMini™ only comes in aviation white led color, since it is 43% brighter than red leds, which means you will BE SEEN, NOT SORRY for sure! And of course, the EXCLUSIVE AVEO LIFETIME WARRANTY means your investment is protected. The MaxiMini™, when only the best and the brightest will do. Features include: Exclusive Lifetime Warranty, Unbreakable Diamidium™ encapsulation, 9-32 Volt Input Range, Vibration Proof, Waterproof, Lowest Drag Profile recognition light, Anodized aluminum finish, Extremely light weight..... P/N 05-04934 ..... $599.00

AVEO MAXX HERCULES LED LANDING / TAXI / WIGWAG LIGHT

Designed for those of you that want your plane to look like a jumbo jet in the pattern, we went to our skunk works and using our AveoMaxiChip™ technology, we built you the ultimate landing light. The Hercules™ is nonpareil in the industry as verified by test pilots at major aircraft manufacturers in night runway tests against all our competitors' lights. Again, featuring the landing, taxi, and wigwag functions, the Hercules™ is also available with TCAS activation for recognition mode.

Voltage input 9 to 32 VDC, please remove legacy strobe boxes first!

30(Brightest) With Bracket..... P/N 05-06492 ..... $975.00
30(Brightest) Without Bracket..... P/N 11-10639 ..... $1,014.00
20 With Bracket..... P/N 05-06493 ..... $825.00
20 Without Bracket..... P/N 11-10643 ..... $825.00

AVEO MAXX ATLAS LED LANDING / TAXI / WIGWAG LIGHT

Aveo's most compact 3-mode light featuring landing, taxi, and wigwag recognition functions, the Atlas™ is 2x to 5x brighter than the rest of its industry competitors. With a variety of mounting options that are part of the rear heat sink variations themselves, the Atlas™ also has optional built-in TCAS signal activation to act as an automatic recognition light.

Voltage input 9 to 32 VDC, please remove legacy strobe boxes first!

15(brightest) With Bracket..... P/N 05-06495 ..... $725.00
15(Brightest) Without Bracket..... P/N 11-10647 ..... $725.00

AVEO SCORPIO WING LIGHT PAIR

The Scorpio™ is full featured, three function wingtip light (Navigation, Strobe, and Position), that is designed to basic FAA performance requirements to allow experimental, Ultralight, or Light Sport aircraft to legally be flown at night. It can even be installed on many certified aircraft, having earned TSO certification. (Owners of higher performance aircraft are better served with our brighter lights, such as the Ultra, Caprica, or Andromeda series.) Don't be fooled by the low cost of the Scorpio™, this light still provides features that continue to elude the competition, such as light weight, weatherproof operation, solid encapsulation preventing dangerous internal condensation, and a superb design that meets the most recent performance and environmental testing requirements.

P/N 11-11506 ..... $795.00

AVEO ULTRA EMBEDDED GALACTICA

Popular choice for certified and general aviation aircraft of any size, due to their compact design and easy installation. With full optical testing for brightness and chromacity, the Ultra also completed the rigorous DO-160F testing regime exceeding all requirements. The leading winglight solution for numerous military and law enforcement/surveillance UAVs around the world and is very popular with aircraft manufacturers. Ultra wing lights are virtually unbreakable. Aircraft lifetime warranty. Packed with 27 ultra high brightness LEDs that are the industry state-of-the-art in performance and output lumens, the Ultras still feature the same tiny footprint the popular Aveo e-series wing lights have become so well-known for in the aviation world.

These aircraft lights meet both TSO C30c and C96a design specifications and EXCEED the requirements of TSO C30c, C96a, SAE AS 8037 and AS8017A, plus DO-160. P/N 05-08364 ..... $1,195.00

TRIKEPAK AVEO TRIKE MOUNT SYSTEM

The Aveo Trike Mount Systerm is an extremely lightweight adapter to mount your Aveo lights to your trike or ultralight frame. Mount system versions include adapters for holding the Aveo Wing, Posistrobe, and Powerburst lights.

Features: Aluminum construction with stainless bolts. Extremely lightweight. Hinged at two points to permit quick angular mount adjustment to meet lighting requirements. Aveo Lifetime Warranty. 9-32 volts Aveo lights operation.

For Wing Light..... P/N 11-09976 ..... $89.00
For Posistrobe..... P/N 11-09977 ..... $89.00

AVEO EYEBEAM MINI

Aveo's incredible capacitive-sensing technology from its highly popular EyeBeam Touch™ products has now been engineered into an even smaller footprint, providing a one-color LED cabin/cockpit/area lighting product for those with limited installation space or only simple lighting needs.

With one light finger touch you can control the power and the brightness scale and the light easily swivels to put the beam where you want it. No mechanical switches to fail, no bulbs to burn out. The EyeBeam Mini™ comes with a variety of easily-applied color faceplates, with standard colors of silver and black. The EyeBeam Mini™ is made from anodized aircraft grade aluminum.

Cockpit and cabin lighting, especially on aircdraft, helicopters, boats, recreational vehicles and trucks are plagued by problems from vibration... the EyeBeam™ product line from AveoEngineering overcomes this with a vibration-proof product that has the exclusive Aveo lifetime warranty.

Featuring: • 9-32 volt input range • No external power supply • Swiveling light permits light beam control • Capacitive sensing touch controls • No mechanical switches to fail • Exclusive Lifetime Warranty • Unmatched circuit technology

Silver..... P/N 11-09678 ..... $181.75
Black..... P/N 11-09679 ..... $181.75

AVEO EYEBEAM DOME

EyeBeam Dome™ - Remote Touch Control Interior LED Light The EyeBeam Dome was developed to meet the requests of an interior dome light for all aircraft, that would complement the amazing Aveo EyeBeam products, and their unique touch-controls. Long gone are the days of mechanical switches which can corrode and spark, etc. Available with a remote control finger-slide panel for intensity and operation.

Black..... P/N 11-10627 ..... $189.00
Silver..... P/N 11-09679 ..... $189.00

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AVEOFLASH LIGHTING - ROCKRACK SWITCHES

AVEO VEGA ROTOR ILLUMINATION LIGHT

Want to be sure you don't hit anything with your rotor blade, or make sure people can see it, then the Vega rotor illumination light mounts on your front cowling and provides a purposed coverage cone to illuminate only your rotor and not impact the pilot or anyone else's vision. These lights also are part of Aveo's exclusive GreenAir™ earth friendly aviation lighting series.

P/N 05-06499 ..... $242.95

AVEOFLASH WING FAIRING E SERIES

The wing fairings come in a molded fiberglas pair that fits the LSA and Ultra lights footprint. Cessna 150-180 fairings for wing nav lights - pair of right and left.

P/N 11-08136 ..... $99.00

AVEO EYEBEAM TOUCH LIGHTS

Introducing the revolutionary EyeBeam Touch™ LED Cockpit/Map/Cabin light system. With both red and white led lights included as standard and led backlighting of its touch control panel, the Eye-Beam Touch™ light swivels to adjust your beam to where you want it. Integral Capacitive Sensing processor technology in the EyeBeam Touch™ means no more buttons to locate and push and no more mechanical failures. Just a simple swipe of your finger to adjust brightness on the dimming slide bar is all it takes. For those flimsy headliners in your cockpit there is finally a light that will not be pressed into your roof to select what you need!

The EyeBeam Touch™ light is available in white, black or silver finish. Extra face plates available and sold separately.

Capacitive sensing technology means a simple light touch of your finger, with or without gloves, to turn the light on/off, select red or white led lighting, and adjust the brightness -- all with the quick touch of your finger.

Description	Part No.	Price
AveoFlash Eyebeam Touch White Finish	11-07864	$168.75
AveoFlash Eyebeam Touch Black Finish	11-07865	$181.75
AveoFlash Eyebeam Touch Silver Finish	11-07866	$181.75
Accessories	Part No.	Price
AveoFlash Replacement Faceplate White	11-07867	$8.95
AveoFlash Replacement Faceplate Black	11-07868	$8.95
AveoFlash Replacement Faceplate Silver	11-07869	$8.95
AveoFlash Sticker Adhesive for Replacement Faceplates	11-08129	$5.00

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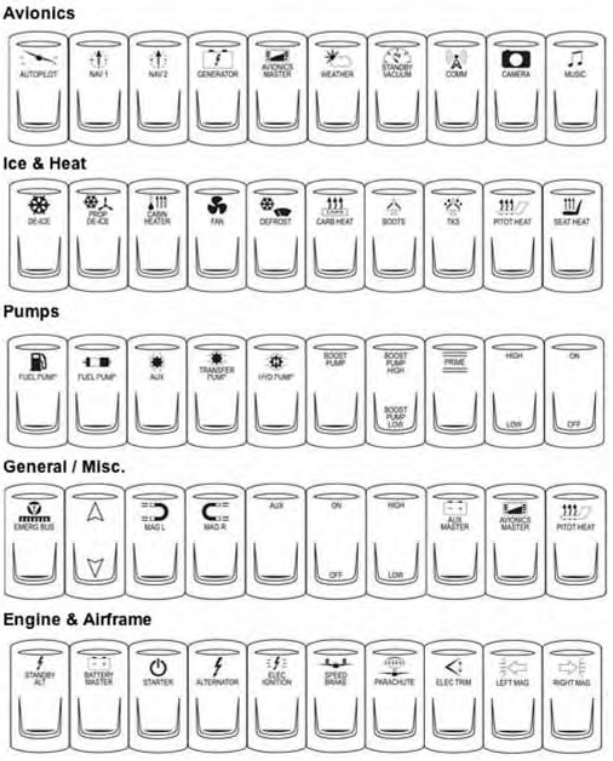
AVEO EYE BEAM TOUCH NVG

The popular Aveo EyeBeam Touch™ capacitive sensing controlled cockpit and cabin lights are now available in NVG configuration, that is they include green LED lighting compatible with night vision equipment. Also included with the NVG model EyeBeam is the standard selection faceplate locations of white, red and blue LEDs too, so whatever your operational conditions there is a lighting option to match it available from this amazing product. With one light finger touch you can control power, white LED, red LED, green LED, blue LED or the brightness slider scale easily with no mechanical switches to fail and no bulbs to burn out.

The EyeBeam NVG™ also features as standard in its firmware automatic light dimming to OFF and automatic ON for the light when coupled to a door microswitch sensor. With a standard 2 minute delay programmed in. The EyeBeam overcomes this with a vibration-proof product that has the exclusive Aveo lifetime warranty. Features: 9-32 volt input range, No external power supply, Swiveling light permits light beam control, Capacitive sensing touch controls, No mechanical switches to fail, Exclusive Lifetime Warranty, Unmatched circuit technology. Specifications: Power supply: 9-32 Volts, Current consumption: 110 mA @ 12 Volts, Capacitive Sensing Interface with LED backlighting, 9 Incremental steps capacitive sensing slide bar for brightness adjust, Swiveling Beam, 2024 Anodized Aluminum Construction

Description	Part No.	Price
Silver Eye Beam Touch NVG	11-08444	$239.95
Black Eye Beam Touch NVG	11-08445	$239.95
Accessories		
Description	Part No.	Price
Silver Faceplate	11-08429	$8.95
Black Faceplate	11-08428	$8.95

AVEO ROCKRACK SWITCHES



SWITCHES		
Description	Part No.	Price
Avionics 10 pk - Autopilot, Nav1, Nav2, Generator, Avionics Master, Weather, Standby Vacuum, Comm, Camera, Music	11-07827	$22.85
Ice & Heat 10 Pk - De-ice, Prop De-ice, Cabin Heater, Fan, Defrost, Carb heater, Boots, TKS, Pitot Heat, Seat Heat, Alternator	11-07829	$22.85
Pumps 10 Pk - Fuel Pump, Fuel Pump, AUX, Transfer Pump, HUD Pump, Boost Pump, Boost Pump High/Boost Pump Low, Prime, High/Low, On/Off	11-07832	$22.85
General 10 Pk - Emerg Bus, Up/Down arrow, MagL, MagR Aux, On/Off, High/Low, Aux Master, Avionics Master, Pitot heat	11-07830	$22.85
Engine & Airframe 10 Pk - Standby ALT, Battery Master, Starter, Elec Ignition, Speed Brake, parachute, Elec Trim, Left Mag, Right Mag	11-07831	$23.75
Red switch top with icon Battery Master	11-06641	$7.50
Red switch top with icon Avionics Master	11-06642	$6.80
Blank Red Top	11-08420	$4.70
Blank Black Top	11-08421	$4.75

SWITCH BOTTOMS		
Switch Bottom part - red - 12V	11-06643	$23.50
Switch Bottom part - green - 12V	11-06644	$23.50
Switch Bottom part - blue - 12V	11-06645	$21.85
Switch Bottom part - white - 12V	11-06646	$23.50

TAB TERMINALS		
Aveo 14 gauge Tab Terminal 12 pack.	11-07833	$3.75
Aveo 14 gauge Tab Terminal 24 pack.	11-07834	$5.99
Aveo 14 gauge Tab Terminal 60 pack.	11-07835	$15.75
Aveo 14 gauge Tab Terminal 100 pack.	11-08422	$25.80

MOUNTING COMPONENTS		
End Module	11-06648	$2.85
Middle Module	11-06649	$2.75
Single Module	11-06650	$5.40
Connector (1 per switch)	11-06651	$4.65
Removing Tool - 2 required to remove the switch.	11-06652	$7.80

AVEO ELECTRONIC POSITION AND TAIL WITH ANTICOLLISION (EPTA) LIGHT SYSTEM

Schedules the Light pulsations so that there are no overlap of the individual lighting functions. Reduces required battery and generator current requirements The casting in a high-optical plastic makes the EPL absolutely insensitive to water, vibrations and other environmental influence. The heat production is low and is monitored and controlled electronically. Considerations, during installation, should be given to the light's need for airflow.

P/N 11-11888 ..... $431.00

AIRCRAFT SEXTANT NAV SYSTEM WITH CONSTANT + FAST STROBE 30W

Note on Approval: The bulbs in this kit are replacement bulbs for nav lights only with the added strobe safety feature to be used at the pilot's discretion during daylight operation. Night operation requires steady on. They are not approved as a replacement for an anti-collision or strobe system. Not FAA Approved. PMA Pending. Meets FAA AC No: 20-74 requirement. These bulbs are standard parts and have been designed to meet the requirements of TSO-C30c. Complete combination navigation and strobe lights for your aircraft. Emitter Types: Cree LED's. Rated Voltage: 10-30vdc. Draws <955ma @ 14.2vdc. 2 modes: constant & fast strobe. Base Type: BAY15s for wingtip & BA15s for tailfin. Application: Navigation Light replacement. Turn on first: Constant lighting / Turn on second time < 3s: Fast Strobe. Switch between modes in fog/cloud etc.

P/N 11-11987 ..... $295.00

AIRCRAFT NAV SYSTEM WITH CONSTANT + FAST STROBE 7.5W

Note: For Experimental aircraft use only. Not FAA/PMA Approved. Tailfin Meets FAA AC No: 20-74 requirement. Tailfin Meets TC Part V - Chapter 523, Subchapter F, 523-VLA.1393. Complete combination navigation and strobe lights for your aircraft. Emitter Types: Cree LED's. Rated Voltage: 10-30VDC. Turn on first: Constant lighting / Turn on second time <3s: Fast Strobe. Switch between modes in fog/cloud etc.

P/N 11-11994 ..... $116.00

AIRCRAFT ANTI-COLLISION STROBE LIGHT

Aircraft Anti-Collision Strobe Light, 45w, 1350 LM CREE LEDs. Total Emitters: 9 x 5w. Power: 45W. Rated Voltage: 10-15VDC. Draws <280ma @ 14.2VDC. Luminous Flux: 1350 LM/108cdl. 1 mode: fast strobe (100ms). Base Type: 12"/30cm twin leads. Application: Aircraft Anti-Collision Strobe Light. Non-PMA'd. Contains 1 light bulb per pack. Dimensions: 2.7 in x 1.2 in (60 mm x 30 mm). Weight: 0.28 oz (8 g)

White ..... P/N 11-12424 ..... $46.00
Red ..... P/N 11-12986 ..... $46.00
Green ..... P/N 11-12985 ..... $46.00

AIRCRAFT WING TIP NAV STROBE LIGHTS

Note on Approval: This bulb is a replacement bulb for nav lights only with the added strobe safety feature to be used at the pilot's discretion during daylight operation. Night operation requires steady on. They are not approved as a replacement for an anti-collision or strobe system. Not FAA Approved. PMA Pending. Meets FAA AC No: 20-74 requirement. These bulbs are standard parts and have been designed to meet the requirements of TSO-C30c. Emitter Type: Green Cree LED's. Turn on first: Constant lighting / Turn on second time <3s: Fast Strobe. Switch between modes in fog/cloud etc.

Green ..... P/N 11-11988 ..... $92.00
Red ..... P/N 11-11989 ..... $92.00

BEACON LIGHT CONSTANT & FAST WHITE STROBE 5W 503LM

Note: For Experimental aircraft use only. Not FAA/PMA Approved. NavStrobe Aircraft Beacon Light with Constant & Fast White Strobe 5W 503 LM LED's. Dimensions: 1.9 in x 0.7 in (49.0 mm x 1.8 cm) Weight: 0.32 oz (9 g)

Turn on first: Constant lighting / Turn on second time <3s: Fast Strobe. Switch between modes in fog/cloud etc.

P/N 11-12193 ..... $32.00

AIRCRAFT WINGTIP NAVLIGHT CLEAR LENS COVER

Color: Clear Optical Borosilicate glass. Application: Wingtip Navigation Light lens cover replacement. Contains 1 per pack. Dimensions: 1.57 in x 1.04 in (40 mm x 26.5 mm) Weight: 0.55 oz (14 g)

P/N 11-11990 ..... $23.75

AIRCRAFT WINGTIP NAVLIGHT LENS COVER GASKET

Color: Gray. Application: Wingtip Navigation Light lens gasket replacement. Contains 1 per pack. Dimensions: 2.57 in x 1.14 in (40 mm x 28.5 mm x 1.5 mm) Weight: 0.15 oz (2.5 g)

P/N 11-11991 ..... $5.00

AIRCRAFT WINGTIP NAVLIGHT GREASE

Color: Clear. Application: Wingtip Navigation Light lubricatent. Contains 1 per pack. Dimensions: 4.25 in x .11 in (108 mm x 2.8 mm) Weight: 0.176 oz (5 g)

P/N 11-11992 ..... $5.00

KUNTZLEMAN DOUBLE DUAL MAGNUM STROBES KIT #1 IS A SET OF SPECIAL HEADS

For builders of RV 7, 9, & 10 aircraft or any other kit that has like mounted wing lights. Due to the wing light configuration on these aircraft, the white rear facing LED on the regular Combo head is of no use, because it can't be seen from the rear. A white position or tail light is then needed. These are strobe and red / green position light equipped heads No white LEDs, a 2 strobe driver box, that fires both wing strobes in an alternating double wink pattern, a white round LED equipped tail light to be mounted at the rear of the aircraft. 50 feet of 5 conductor shielded wire for the wings, plugs, pins and mounting hardware. Total power draw for this system is about 2 ½ Amps at 14 volts. ..... P/N 11-05833 ..... $465.00

KUNTZLEMAN DOUBLE DUAL MAGNUM STROBES KIT #2 VANS RV LIGHT KIT

For builders of RV 7, 9, & 10 aircraft or any other kit that has like mounted wing lights. Due to the wing light configuration on these aircraft, the white rear facing LED on the regular Combo head is of no use. A white position or tail light is then needed. They are STROBE and RED / GREEN Position light equipped heads WITHOUT the white LEDs, a 3 strobe driver box, that fires both wing strobes in an alternating double wink pattern and a third STROBE and LED equipped round tail light for mounting at the rear of the aircraft. The tail strobe fires in sync with each wing. Also, included is 75 feet of 5 conductor shielded wire, plugs, pins and mounting hardware. Total power draw for this system is about 4 Amps at 14 volts.

TRI3-RV ..... P/N 11-05834 ..... $584.00

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KUNTZLEMAN STROBE SYSTEMS

KUNTZLEMAN MAGNUM STROBES

The SINGLE MAGNUM SMART STROBE Driver is a state of the art single strobe light system. There is not another system on the market like this one. It will operate on 10 to 80 volts of AC or DC input power. It can be powered directly from the engine lighting coil (AC) or from a battery (DC) without any change in brightness or its double wink flash pattern at a 74 per min. rate There are NO options to change and NO special equipment needed. This model is a favorite for king post installations and with the PPC flyers. It is also available with either the standard STREAMLINE HEAD or the COMBO STREAMLINE WHITE HEAD. Both are popular for tail mounting. Average current draw is less than 2 Amps. The driver measures 4 ½" X 3 ½" X 1 ½" and weighs 10 ounces.

Smart Strobe Driver Box only - Single Magnum Smart Strobe driver only, without a strobe head. SS-DO
P/N 11-05116 ..... $110.00

Single Magnum Smart Strobe with round clear Fresnel Head - The globe style is a Fresnel lens. The head comes with 6' of wire and plug attached. SS-TM
P/N 10-01609 ..... $149.00

Streamline Model with Driver and Streamline Head - Includes 25' of 3 conductor wire, plug, pins and mounting hardware (includes adaptor plate for curved surface mounting if needed). SS-SLM P/N 10-01611 ..... $149.00

SINGLE MAGNUM SMART STROBE DRIVER with a Round Taillight Strobe - Includes 25' of wire and mounting hardware. SS-TL-STR..... P/N 11-07345..... $198.95

STREAMLINE COMBO Head, White Led & Strobe Combination - Includes 25' of 5 conductor shielded wire, plug, pins and mounting hardware (includes adaptor plate for curved surface mounting if needed). SS-SLCW ..... P/N 11-05114 ..... $239.95

ROUND TAILLIGHT COMBO Head - White Led & Strobe Combination Includes 25' of wire and mounting hardware. SS-TL-L/S..... P/N 11-07346 ..... $231.95

The DOUBLE DUAL MAGNUM STROBE Driver is available in two models, the DDM 12 volt DC model and the SDDM smart model. The SMART Model simply means it can be powered by 10 to 80 volts of AC or DC. The 12 volt model is powered by the 12 volt electrical system of your aircraft. The strobe bulb fires a rapid double flash on one head and then the other in an alternating pattern. The first flash catches the eye and the second identifies your position. Total flash rate is 74 per min. Average current draw is less than 2 Amps. The driver measures 4 ½" X 3 ½" X 1 ½" and weighs 10 ounces.

Double Dual Magnum Driver Box Only - 12VDC Driver Box Only 12 volt Model DDM-DO
P/N 11-05118 ..... $139.95
Double Dual Magnum Smart Driver Box Only - Smart Model (10 to 80 volts of AC or DC)SDDM-DO.....
P/N 11-05117 ..... $160.00

Double Dual Magnum Driver Box with round clear Fresnel Heads - Two Round Fresnel Heads, driver, 6' of 3 conductor wire, plugs, pins, and installation hardware (Tang Mount used on PPC, TRIKES, or where bolting heads to frame is desired).
STANDARD - 12 VDC Model with /ROUND FRESNEL heads DDM-RH
P/N 10-01610 ..... $228.00
SMART - with /ROUND FRESNEL headsSDDM-RH
P/N 11-04956 ..... $247.95

Double Dual Magnum Driver Box with standard streamline Heads - Two Streamline Heads, driver, 50' of 3 conductor wire, plugs, pins, and installation hardware (includes adaptor plates for curved surface mounting if needed).

STANDARD 12 volt Model with Driver and Two STANDARD STREAMLINE Heads..... P/N 10-00824 ..... $228.00
SMART - model with with Driver and Two standard streamline Heads
SDDM-SL..... P/N 11-04995 ..... $247.50

Two STREAMLINE COMBO heads, driver, 50' of 5 conductor shielded wire, plugs, pins, adaptor plates (for curved or flat surface mounting) and installation hardware. SONEX Aircraft adapter plates available at no additional charge when mentioned at time of purchase.

COMBO - 12 VDC Model with Streamline Combo Heads DDM-SLC
P/N 11-04835 ..... $379.00

SMART - with Streamline Combo Heads SDDM-SLC
P/N 11-04957 ..... $397.95

The TRIPLE MAGNUM 3 LIGHT STROBE Driver is a 12 volt DC operated system. It fires 3 strobe heads in a double wink pattern. The two wing tip lights alternate between left and right while the tail, or third light is synchronized to flash every time one of the wing tips are flashing. Resulting in about 140 flashes per minute. Driver box measures 4 ½" X 7" X 1 ½", weighs 17.2 ounces. Current draw with 3 standard heads is about 3 amps. If using two COMBO heads and one standard head it is about 3 ¾ Amps .

Triple Magnum 3 Light DRIVER BOX ONLY - 12 volt Model TRI3-DO..... P/N 11-01355 ..... $230.00

TRI 3 DRIVER with 3 STANDARD HEADS, Streamline or Round. - with 3 standard SL or ROUND FRESNEL heads, please specify. Complete with 75' of wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. TRI3-SL
P/N 11-01829 ..... $375.00

TRI 3 DRIVER with 2 COMBO HEADS & 1 STREAMLINE, ROUND FRESNEL or TAILLIGHT HEAD - The TRIPLE MAGNUM 3 light system with 2 COMBO & a choice of either 1 Standard Streamline Head, 1 Round Fresnel head or 1 Round Tail Light without LEDs (Additional cost for the Round Tail Light) for the third head, please specify. Complete with 75' of shielded wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. (Please specify choice at time of order) TRI3-SLC

P/N 11-05125 ..... $579.95

TRI 3 DRIVER with 3 COMBO HEADS - The TRIPLE MAGNUM 3 light system with 3 COMBO heads, please specify Streamline Combo or Round Tail light Combo for third head. Complete with 75' of shielded wire, plugs, pins, adaptor plates (for flat or curved surface mounting) and all the installation hardware. The tail COMBO heads both have a strobe and white LEDs to be used as a STROBE and WHITE tail light. TRI3-SLCW.....

P/N 11-05119 ..... $599.95

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KUNTZLEMAN STROBE SYSTEMS

KUNTZLEMAN LED CONTROLLER ONLY

LED Controller only. The controller is capable of powering up to 4 of our special strobe heads. So, if you would like to add more visibility we have 3 additional heads to choose from that will work in conjunction with the two wing tip heads. LED-HACW is a streamline strobe & White AFT Position light, LED-SO is a streamline strobe only and LED-TLS is a Round taillight style strobe only. Each additional head requires a Y-PC patch cord. ..... P/N 11-12343 ..... $136.75

KUNTZLEMAN LED REPLACEMENT POSITION AND STROBE HEADS

LED replacement position and strobe heads. This items comes with an LED replacement part with Red/White position or a Green/White position and strobe head. This part is for the Anti Collision and Navigation Position Light System. (Part Numbers 11-10687 or 11-12342) This head requires a Y-PC patch cord.

Red/White ..... P/N 11-12344 ..... $136.75
Green White ..... P/N 11-12345 ..... $136.75

KUNTZLEMAN LED STREAMLINE WHITE AFT POSITION AND STROBE HEAD

LED-HACW is a streamline strobe & White AFT Position light. This part is for the Anti Collision and Navigation Position Light System. (Part Numbers 11-10687 or 11-12342) This head requires a Y-PC patch cord..... P/N 11-12346 ..... $136.75

KUNTZLEMAN Y-PATCH CORD ADAPTER

Y-PC patch cord for the Anti Collision and Navigation Position Light System. (Part Numbers 11-10687 or 11-12342) This head requires a Y-PC patch cord. ..... P/N 11-12347 ..... $14.50

KUNTZLEMAN LED STREAMLINE STROBE ONLY HEAD

LED-SO is a streamline strobe only. This part is for the Anti Collision and Navigation Position Light System. (Part Numbers 11-10687 or 11-12342). This head requires a Y-PC patch cord..... P/N 11-12348 ..... $97.75

KUNTZLEMAN LED ROUND TAILLIGHT STYLE STROBE

LED-TLS is a Round taillight style strobe only. This part is for the Anti Collision and Navigation Position Light System. (Part Numbers 11-10687 or 11-12342) This head requires a Y-PC patch cord. ..... P/N 11-12349 ..... $97.75

KUNTZLEMAN REPLACEMENT PARTS AND ACCESSORIES

Standard Streamline Head Assembly - Silicon and lexan head measures 3-1/4" x 1" and weighs 1.8 ounces each. (bulb unit, clear lens, adapter plate, 25 feet wire, plug, pins, hardware and heat shrink) SL-HA ..... P/N 11-05127 ..... $54.95

Standard Streamline Bulb Unit - Less lensSL-BU ..... P/N 11-05128 ..... $39.95

Strandard Streamline Lens Only - SL-L ..... P/N 11-05130 ..... $17.50

Round head Assembly - Round clear Fresnel lens. Measures 2-1/2" dia. at the base and 3-1/2" tall. Weighs 6 ounces, and standard 6 ft. wire and plug installed. RND-HA -CLEAR ..... P/N 11-05135 ..... $56.85

Round Clear Fresnel Lens - RND-L ..... P/N 11-05139 ..... $17.50

Round Wire Bulb Unit - Works on all Magnum drivers.
RND-3WBU - 3 Wire..... P/N 11-05137 ..... $29.95

Combo Streamline Head Assembly - Fitted with LED position lights. Measures 3-1/4" x 1" and weighs 2.8 ounces. 12 volt LEDs draw only (complete 2 head & wire) SL-HAC-S ..... P/N 11-07465 ..... $259.95

SL-HAC-G - Green & White aft LEDs(1 head & wire)
SL-HAC-G ..... P/N 11-07466 ..... $92.75
W/O Strobe Bulb SL-HAC-WG ..... P/N 11-07348 ..... $92.75

SL-HAC-R - Red/Wh aft LED SL-HAC-R ..... P/N 11-07467 ..... $134.95
W/O Strobe Bulb SL-HAC-WR ..... P/N 11-07349 ..... $92.75

SL-HAC-W - White aft LEDsSL-HAC-W..... P/N 11-07469 ..... $134.95
W/O Strobe Bulb SL-HAC-W ..... P/N 11-05132 ..... $91.75

Combo Streamline - REPLACEMENT Strobe Bulb Unit Only, fits SL and ROUND Combo tail light heads..... P/N 11-05133 ..... $39.95

Combo Streamline - LENS Only SL-LC ..... P/N 11-05134 ..... $17.50

Round Taillight with Strobe Only ..... P/N 11-05805 ..... $92.75

Round COMBO Taillight ..... P/N 11-05804 ..... $129.95

Round Taillight with LEDs TL-LED ..... P/N 11-05806 ..... $96.75

Strobe Head Plug Set - SH-PS..... P/N 11-05140 ..... $2.50

Inline Plug Set - IL-PS ..... P/N 11-05141 ..... $6.50

Trike Mount Adaptor Kit - TRK-MT ..... P/N 11-05143 ..... $27.95

3 Wire Cable Extension - EXT-3W..... P/N 11-05142 ..... $10.85

Mounting Kit - RND-MK..... P/N 11-07347 ..... $29.65

WIG-WAG circuit and a DPDT center off switch to operate 1 or 2 LTRs in a wig-wag mode.P/N 11-08419 ..... $48.75

KUNTZLEMAN LED WING TIP STROBE AND NAVIGATION SYSTEM

This new wing tip, 100% LED, strobe and navigation light system features a cluster of very bright LEDs and using a common controller that furnishes the heads with a junction point for synchronizing and selecting one of the 7 flash patterns of the LED STROBES. It also allows for a separate power source to the navigation red, green and white LEDs.

The system includes 2 heads (one left & one right), mounting adapter plates for mounting on a radius, 50 feet of 3 conductor wire, plugs, pins, 1 controller, misc. wire connectors and mounting hardware.

Specifications:

- Made in USA
- Navigation Colors: Aviation Red / Green forward and White aft
- Strobe: Synchronized with seven (7) selectable flash patterns
- Weight: 2 heads and controller / 12 ounces
- Power draw: Strobe and Position lights are LESS than 2 Amps at 12 to 14 volts
- Footprint Dimensions (Heads): 3.2" long x 1.1" wide
- Footprint Dimensions (Controller): 2.2" x 5"

Kuntzleman Led Wing Tip Strobe And Navigation System
P/N 11-10687..... $389.95

Accessories

Kuntzelman Sonex Adapter ..... P/N 11-10688..... $5.95
Kuntzleman Bushcaddy Adapter..... P/N 11-10689..... $5.95
Kuntzleman Trike Adapter..... P/N 11-10690..... $5.95

KUNTZLEMAN SELF CONTAINED 12 VDC STROBE

The SC103 STROBE is a self contained 12 volt DC operated light designed specifically for Ultralight use where an external 12 vdc power source (battery) is available. Its physical size is the smallest of any self contained strobe light in its class. Measuring2 ½" dia. At the base and 4" tall. Using the same xenon flash tube and Fresnel lens that is currently being used on its big brother the Single Magnum Smart Strobe. The brightness has been actual flight tested before sunset and is visible at 3 statute miles (FAR 103 requirement). The flash is in a single wink pattern at about 42 per minute, power consumption is 500 ma (1/2 Amp) and it weighs only 7 ½ ounces. The SC103 is mounted with a 1/4 X 20 stud located in the center on the bottom of the unit. Also, a stainless steel tang is supplied. Its rugged construction makes it a great economical stand alone unit.

P/N 11-04098.....$99.85

SHOCK MOUNT - Designed to be used when mounting the SC103 strobe in an area of high vibration. P/N 11-06251.....$16.70

KUNTZLEMAN LANDING/TAXI /RECOGNITION (LTR) LIGHTS

LSA and EXPERIMENTAL aircraft line of lights. Made in the USA, called the LTR which stands for Landing-Taxi-Recognition. The LTR consists of 9 extremely bright LEDs, focused through special lenses. This results in a white beam of light that has been measured with a light meter to be 2 1/2 times the brightness of a 55 watt halogen lamp while drawing 1/3 the current and 1 1/2 that of an HID lamp at about the same current. Powered by 12 to14 volts DC it uses only 1.35 Amps of power. The LTR dimensions are 3" Dia. X 1" deep and weighs less than 6 ounces. Flashing it on & off can be accomplished with an led flasher from your local auto parts store. You must see the LTR in operation to believe the light output. Sold with a money back satisfaction guarantee.

P/N 11-06854.....$229.00

KUNTZLEMAN HOT BOX

The HOT BOX is a complete electrical system intended for use with an electric starter equipped engine. The box contains a heavy duty regulator, starter solenoid, custom length cables, labeled terminal strips, a fuse panel and many more features.

Hot Box with Regulator HB ..... P/N 11-05144 ..... $240.00
Hot Box no Regulator HB..... P/N 11-05145 ..... $208.95

EL

EPL POSITION LIGHTS & STROBES

The new LED technology allows excellent navigation lights with only approximately 10% of the input power, compared with conventional navigation lights. The casting in a high-optical plastic makes the EPL (Electronic Position Light) absolutely insensitive against water, vibrations and other environmental influence. The efficiency of the output is much higher than with conventional electric light bulbs. The self-warming of the EPL is low and can be determined as safe. To avoid overheating, the heat balance is controlled electronically. As a precaution you must pay attention to ventilation with a cover installed, so that no heat accumulation within the casing can appear. This may be assumed by suitable constructive measures. These lights are manufactured in Germany. 12V.

EPL Wing Tip Light Set(1 red, 1 green) ..... P/N 11-05120 ..... $332.00
EPL Tail Light ..... P/N 11-05121 ..... $218.95
EPL Wing / Tail / Strobe Light ..... P/N 11-05122 ..... $350.00
EPL ELL 4 Light Set ..... P/N 11-05123 ..... $923.00

EPL2 WING TIP LIGHT SET

The next generation of the EPL characterized by a interaction between high performance-LED's and special reflectors. The integrated cooling plate leads off the excess heat of the high performance LED's. The EPL is made of a high-optic, scratch resistant plastic module. The entire control element is integrated into the ACL module where the ACL's dimensions determine the required space. The EPL has a brilliant green and red light with modulated beacon impulse for better perception. It has a defined angle of light of 110° in compliance with the regulations of general aviation. The wingtip lights are prewired to allow easy connection to a 2-lead cable of minimum 0.4 mm^2 cross section. Flanges allow simple fixture. In addition, it can be affixed to the fuselage or rudders by means of a silicon adhesive. An instruction manual and the shrink tubing required for the assembly are included in the EPL package. 12V.

P/N 11-10679 ..... $370.00

ELECTRONIC LANDING LIGHT

Integrated Anti Collision Light (ACL). Thus the ELL is a landing light and an ACL in foreward direction of the flight. White light with only approx. 10% of the input power compared with conventional lights. Absolutely insensitive against water, vibrations and other environmental influence. This electronic landing light is designed to be mounted at a suitable position at the nose unit or inside the wing Please adhere to the following instructions for a professional mounting of the ELL. The illumination angle complies to the regulations for general aviation. 12V.

P/N 11-06451 ..... $511.00

ERB-H ELECTRONIC ROTATING BEACON

This light is exactly the same as the ERB, only has the mounting flange to attach to the Whelen Lens retaining band. Less power consumption, and less long term damage from Vibration consistently present in Rotorcraft environment . Just requires the 2 wire hook up from the aircraft's electrical system. No other power conditioning systems needed that may be part of the Whelen system. The illumination angle complies to the regulations for general aviation. 12V.

Helicopter ..... P/N 11-10677 ..... $520.00
Standard ..... P/N 11-06452 ..... $520.00

ACL -III ELECTRONIC ANTI-COLLISION LIGHT

This anti-collision light is designed to be mounted at a suitable position at the tail unit or at the top of the stabilizer. The ACL III is the direct replacement for the ACL-II Built with many of the same features as the Night legal ERG, this Light does not have the rotating pattern of lights, but still extremely visible both day and night. 12V.

P/N 11-10678 ..... $408.00

RECESSED MOUNT LED LIGHT FIXTURE

Recessed mount convenience light. 3 Bright LEDs behind a frosted panel. Recessed mount with hardware. Dimensions: 2.25" x 2.25" x .5" depth. #6 mounting holes with snap on cover. 12 Volt DC or 24 Volt DC, very low power drain (0.1mA). Applications: Mounts flush into foot wells, door panels, and side panels. Ideal as a convenience light, mp light, or chart light.

12V White ..... P/N 11-09266 ..... $13.90
12V Red ..... P/N 11-09267 ..... $13.90
12V Blue ..... P/N 11-09642 ..... $12.90
12V Green ..... P/N 11-09643 ..... $12.90
24V White ..... P/N 11-09268 ..... $13.90
24V Red ..... P/N 11-09269 ..... $13.90
24V Blue ..... P/N 11-09644 ..... $12.90

COURTESY LIGHTS FOR CESSNA AIRCRAFT

This unique LED lighting system operates from a standard 9 volt battery. The system is designed to replace one or more inspection panels on the bottom of each wing with a new inspection panel and a battery operated LED light. This LED will provide lighting around the aircraft for loading passengers or assisting in preflight inspections during night time operations.

The LED has been designed and tested specifically for aircraft applications where altitude and temperature fluctuations can destroy certain components of a standard LED. The unit is also equipped with an indicator to assist the pilot in finding the switch in the dark. A timing feature allows the operator to run the light for either 3 or 15 minutes after which time the unit will shut itself off. Available with your choice of 5 different sized inspection panels. STC' d for many models of Cessna Aircraft. 12V. Visit or website for aircraft eligibility list.

Description	Part No.	Price
Courtesy Light with 5-1/16" Inspection Panel (Most Common)	11-05741	$129.00
Courtesy Light with 5-11/16"" Inspection Pane.	11-05742	$129.00
Courtesy Light with 6-1/32" Inspection Pane.	11-05743	$129.00
Courtesy Light with 6-13/64" Inspection Pane.	11-05744	$129.00
Courtesy Light with 7-9/16" Inspection Panel.	11-05745	$129.00

AEROLEDS SUNRAY PLUS LANDING LIGHT

The SunRay Plus is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag feature in addition to its standard operation as a landing/taxi light. The SunRay Plus is a very intense light source that uses 4 high power LED's to produce up to 1,000+ lumens of light and 30,000 candela using 10 watts of power. Polycarbonate leading edge windows are commonly used with wing-mounted landing lights, and are typically available for most airplane types from a number of third-party suppliers. This light is small enough to fit in the wingtip cutout found in Van's RV kits. Specifications: Power: 17 Watts, Voltage: 9-36 VDC, Lumens: 1,000+, Lens Material: Polycarbonate, Candela: 25,000+, Beam Angle: 10 Degrees, Rated Life: 50,000 Hours, Temperature Range: -55C to +70C, 12V. Weight: 5 oz, Dimensions: 2.7" x 2.7" x 1.7" ..... P/N 11-09348 ..... $289.00
Mounting Kit ..... P/N 11-12037 ..... $16.65

AEROLEDS PULSAR NAV/ STORBE

An all LED navigation/position/strobe designed for the wingtips of an aircraft and exceeds 400 effective candela for the anti-collision light. The Pulsar is the same size as the traditional forward and rear facing position light with anti-collision. The Pulsar does not require an external power supply and will retrofit the mounting footprint of traditional legacy lighting. Specifications: Voltage Range: 9-36 VDC, Length: 5.6", Current Draw at 12VDC: 1.7 Amp Avg / 4.5 Amps Peak Width: 1.8", Power Consumption: 20 Watts Avg, Depth: 1.5", Strobe Power Supply: Built In, Weight: 4 Oz, Strobe Synchronization: Built In, Heat Sink Material: Clear Anodized Aluminum, Thermal Protection: Built In, Lens Material: Polycarbonate, Nav/ Position Light: Exceeds 100 candela, Screw Mount: 3x 6-32 Machine Screws, Strobe: Exceeds 400 effective candela, Rated , Temperature Range: -55C to +70C. 12V. P/N 11-09349 ..... $985.00

SUNBEACON B LED / RED

The 01-1200-A Sunbeacon B is an all LED red 360 degree beacon that exceeds 150 effective candela. It is suitable for mounting on the top or bottom of a fuselage, or on the vertical stabilizer to provide a highly visible red beacon that can be seen from any direction around the aircraft.

Sunbeacon Red ..... P/N 11-10475 ..... $868.00
Sunbeacon White ..... P/N 11-10476 ..... $985.00

AEROLEDS MICROSUN LANDING LIGHT

The Microsun is a very intense light source that uses three high powered LED's to produce 1800+ lumens of light using 30 Watts of power. Last up to 50,000 hours of constant operation. The MicroSun is protected against overheating, protected from lightning transients and ESD, voltage spikes, reverse voltage, and undervoltage conditions.(1 1/4"x3") P/N 11-07779 ..... $339.00

AEROLEDS SUNTAIL TAIL LIGHT

SunTail™ is designed to perform the tail position/strobe functionality on the rudder of the aircraft. The design addresses all the shortcomings of the existing line of competitive products and can synchronize its strobe with any of the AeroLEDs' wingtip family of nav/strobe and nav/position/strobe products. Suntail does not require an external power supply and will retrofit the mounting footprint of legacy lighting. SunTail™ was intended to meet or exceed all of the FAA requirements for certification.

White Experimental ..... P/N 11-07781 ..... $369.00
Red Experimental ..... P/N 11-10474 ..... $369.00
White Certified ..... P/N 11-10479 ..... $466.00

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AEROLEDS SUN SPOT 36LX LED LIGHT

Designed as a LED drop in replacement for the existing GE4509 PAR 36 aircraft lights. Landing light projects 30,000 candela using 30 Watts/3 AMPs max of power. Taxi light projects 10,000 candela. Mounts with existing ring clamp. Power consumption: 30 Watts Max; Current Draw at 12VDC: 3 Amps Max Available in taxi or landing lights. Clamp Mount: Par 36 Ring Clamp. Over-temp Sense Protection; ensures our 50,000 hour lifetime guarantee. Low-voltage Sense (shuts down half the LED's in emergency, low voltage conditions) Specifications: Power: 45 Watts, Voltage: 9-36 VDC, Lumens: 2,400, Weight: 10 oz, Dimensions: 4.2" x 4.2" x 1.5".

36LX Landing Light.....P/N 11-09351 .....$325.00
36LX Taxi Light.....P/N 11-09352 .....$325.00
36LX Landing Light with protective lens coating.
P/N 11-12620 .....$364.00

AEROLEDS SUN SPOT 36HX LANDING LIGHT

LED drop-in replacement for your existing GE4509, PAR36 aircraft lights. It comes with an integrated "wig-wag" or "pulse" feature built into the light that is recommended to be used throughout your flight to increase recogniton from other pilots. Landing light projects 45,000 candela using 45 Watts/3.75 AMPS max of power. Taxi light projects 45,000 candela. Power consumption: 45 watts Max; Current Draw at 12VDC: 3.75 Amps Max Available in taxi or landing lights. Clamp Mount: Par 36 Ring Clamp. Built in Wig/Wag (stand-alone or synchronous with any of our other products). Over-temp Sense Protection; ensures our 50,000 hour lifetime guarantee. Low-voltage Sense (shuts down half the LED's in emergency, low voltage conditions)
Specifications: Power: 45 watts, Voltage: 9-36 VDC, Lumens: 3,600 Weight: 10 oz, Dimensions: 4.2" x 4.2" x 1.5".PMA APPROVED

Landing Light PMA'd .....P/N 11-09353 .....$439.00
36HX Taxi Light PMA'd.....P/N 11-09355 .....$438.00

AEROLEDS SUNSPOT 46HX WITH PULSE

SunSpot 46HX LED Landing or Taxi light with built-in wig wag / pulse recognition mode. Power: 90 Watts. Voltage: 9-40 VDC. Lumens: 5,000+. Weight: 11 oz. Dimensions: 5.6" x 5.6" x 1.7" Non PMA'd
P/N 11-11411 .....$725.85

AEROLEDS SUNSPOT 46LX LANDING LIGHT WITH PULSE

Built in "wig wag". Power: 90 Watts. Voltage: 9-40 VDC. Lumens: 5,000+. Weight: 11 oz. Dimensions: 5.6" x 5.6" x 1.7". Non PMA'd
P/N 11-11744.....$595.00

AEROLEDS AEROSUN VX FOR VANS WINGTIP LANDING / TAXI

The Aerosun Vx is a high intensity wingtip landing/taxi/recognition light designed specifically for the Van's RV family of airplanes. Each unit draws 60 Watts of power and generates over 5000 lumens of light per wingtip. The lights include a built-in wig-wag controller for a synchronized recognition light mode. The Vx can be installed in any RV-4, RV-6, RV-7, or RV-8 that has a set of W-715-1 fiberglass wingtip fairings with the 6"h wide light cove. The Aerosun Vx can also be installed in the RV-9, RV-10, and RV-14 models using a conversion kit which is sold separately that enlarges the size of the light cove to accept the Vx. • Power:60 Watts • Voltage:9-36 VDC • Lumens:5000+ • Weight:12 Ounces per light • Dimensions:6.4" x 5.7" x 3.6".
P/N 11-12921 .....$790.00

AEROLEDS SUN SPOT 64 LED LIGHT

Over 17,000 lumens, drawing 224 watts. Allows the aircraft to be visible from 10 miles away, day and night. Specifications: Voltage Range: 15-36VDC, Current Draw at 28VDC: 8 Amps Max, Power Consumption: 224 Watts Max, Thermal Protection: Built In, Landing Lens Candela: 290,000+, Taxi Lens Candela: 105,000+ Landing Beam Angle: 10 Degrees Taxi, Beam Angle: 10 Deg up, 40 Left/Right, Total LED Lumens: 17,000+, LED Count: 8, Height: 8" Round, Width: 8" Round, Depth: 2.7", Weight: 35 Oz, Heat Sink Material: Black Anodized Aluminum, Lens Material: Polycarbonate, Clamp Mount Option: PAR 64 Ring Clamp, Rated Life: 50,000 Hours, Temperature Range: -55C to +70C.
P/N 11-09458 .....$1,636.00

AEROLEDS AEROSUN LANDING LIGHT

The AeroSun™ is a wing-mounted LED (Light Emitting Diode) landing light with a built-in wig wag mode in addition to its standard operation as a landing/taxi light. The AeroSun™, constructed of extruded aluminum, is a very intense light source that uses 12 high power LEDs to produce up to 1600 lumens of light using just 24 Watts of power. The product is ideal for installations in aluminum aircraft or composite aircraft where some airflow within the wing cutout exists. Typical installations include aircraft such as RV8,9,10; Zenith, Kitfox and Sonex. The AeroSun™ is protected against overheating with a built in protection circuit, is protected from lightning transients and ESD, voltage spikes, reverse voltage, and undervoltage conditions. Polycarbonate leading edge windows are commonly used with wing-mounted landing lights, and are typically available for most airplane types P/N 11-11359 ..... $322.00

AEROLEDS SUNBEAM LANDING TAXI LIGHT

Sunbeam landing/taxi/recognition light that features two intense Light Emitting Diodes (LEDs). Featuring a 50,000 hour life, the Sunbeams are produced in a rectangular format to fit the Cirrus SR-22, a variety of LSAs and experimental aircraft. This is a reliable light source that requires only 25 watts of power to produce over 100 watts or 60,000 candela which amounts to 1600+ lumens. Like all AeroLEDs products, the Sunbeam is complete sealed and is very rugged. It is protected against overheating with a built-in protection circuit and is also secured against lightning, voltage spikes, reverse voltage and under voltage conditions. The Sunbeam is 2.8" high, 4.03" wide and 1.36" deep
P/N 11-11225.....$397.00

AEROLEDS NS90 WINGTIP STROBES

An all LED navigation/strobe designed for the wingtip cutouts of an aircraft and project a 90 degree light coverage for the experimental market. NS90 does not require an external power supply and will retrofit the mounting footprint of legacy lighting. It is recommended that the SunTail be sold with the NS90 for aft position/strobe to enhance recognition. Specifications: Power: 10 Watts, Voltage: 9-36 Vdc, Weight: 4oz. P/N 11-08170.....$768.00

AEROLEDS NS180 WINGTIP NAV STROBES

An all LED navigation/strobe designed for the wingtips of an aircraft and projects 180 degree light coverage. NS180 does not require an external power supply and will retrofit the mounting footprint of legacy lighting. It is recommended that the Suntail be sold with the NS180 for aft position/strobe to enhance recognition. Power: 18 Watts. Voltage: 9-36 Vdc. Weight: 4oz

Experimental.....P/N 11-08171 .....$868.00
Certified .....P/N 11-10477.....$1,079.00

AEROLEDS NSP WINGTIP STROBES

An all LED navigation/position/strobe designed for the wingtips of an aircraft and project a 180 degree light coverage that exceeds 400 effective candela for the anti-collision light. NSP does not require an external power supply and will retrofit the mounting footprint of traditional legacy lighting.

Experimental P/N 11-08172.....$887.00
Certified P/N 11-10478.....$1,137.00

AEROLEDS PULSAR EXP STROBES

All LED navigation/position/strobe designed for the wingtips of an aircraft and projects a 180 degree light coverage. ExP does not require an external power supply and will retrofit the mounting footprint of legacy lighting. Specifications: Voltage Range: 9-36VDC, Current Draw at 12VDC: 1 Amp Avg / 2.5 Amps Peak, Power Consumption: 13 Watts Avg, Strobe Power Supply: Built In, Strobe Synchronization: Built In, Thermal Protection: Built In, Position Light: FAR Compliant, Strobe: FAR Class 1 Equivalent, LED Count: 16, Length: 5.63", Width: 1.85", Depth: 1.3", Weight: 4 Oz, Heat Sink Material: Clear Anodized Aluminum, Lens Material: Polycarbonate, Screw Mount: 3x 6-32 Machine Screws, Rated Life: 50,000 Hours, Temperature Range: -55C to +70C
P/N 11-06577 .....$849.95

AEROLEDS RV KITS

RV KIT OPTION 1 - Pulsar NS90 Pair (NAV/ACS) for wingtip cut outs and SunTail (POS/ACS) for the rudder
P/N 11-09921 .....$1,137.00

RV KIT OPTION 2 - Pulsar NS90 pair (NAV/ACS) for wingtip cut out, SunTail (POS/ACS) for the rudder, 2 Aerosun (landing/taxi/recognition lights) P/N 11-09922 .....$1,696.00

RV KIT OPTION 3 - Pulsar NS90 pair (NAV/ACS) for wingtip cut out, SunTail (POS/ACS) for the rudder, 2 Sunray Plus (landing/recognition lights) for wingtips P/N 11-09923 .....$1,595.00

RV KIT OPTION 4: - Pulsar ExP pair (NAV/POS/ACS) for external wingtips, 2 Aerosun (landing/taxi/recognition lights)
P/N 11-09924 .....$1,395.00

EL

ULTRALIGHT BEACONS

These miniature self-contained units use solid state circuitry for reliability and a lexan lens that is UV protected and shatter resistant for durability. Now available with an internally regulated flashing LED Lamp. .14 amps & 50,000 hr expected life. 12V DC power source required for both units. Wt. less than 7 oz. Size: 3" H x 2-5/8" W. For Experimental Aircraft Only

Beacon, red lens ..... P/N 11-03008..... $72.25

RED LED AIRCRAFT BEACON

This self contained 14 Volt beacon uses surface mounted LED (Light Emitting Diode) technology and meets FAA requirements for anti-collision light systems in both airplane and rotorcraft categories. Measures 1.7 inches in diameter, 3.5" tall and weighs 8.4 oz. Average current draw at 14V is 0.6 Amps with peak input current of 1.2 Amps. Flash rate of 60 per minute and will not produce EMI or RFI interference. Aviation Red LEDs through a clear Polycarbonate Fresnel lens. Projected life for the LEDs is up to 100K hours. Mount with a #10-32 stainless steel stud that is in the bottom center of the base. NOT TSO'D

P/N 11-05111..... $233.95

ULTRALIGHT RED/GREEN POSITION LIGHTS

Made for easy installation to fit the tube that makes up the wing tip of most Ultralights. Powered by 12VDC and drawing only 1/3 amp each, these lights are just the thing for the Ultralight flyer that wants to add that special touch of position lights to his bird for those twilight flights. These easy to mount lights measure 1-3/8" x 4-3/8". Please note that these lights are NOT TSO'd for VFR night flight..... P/N 11-01356 ..... $49.50

EL

OPTIMUS DUAL LED AUX LIGHTS

Square

Round

Utilizing an all new proprietary IRIS Reflector Technology, the Long Range series provides the ultimate focus for long range lighting by producing 693 ft. of usable light from a single 3.5" tall, 10-watt LED. Compared to a standard 55 watt low beam headlight reach of 88 ft. and a standard 65 watt high beam reach of 153 ft.

Optimus lights also feature Cyclops Prime Drive technology for integrated thermal management and dimming capabilities.

Pulse Width Modulation The Optimus Prime utilizes integrated Pulse Width Modulation (PWM) dimming circuitry to manage heat levels. PWM works by flashing the LED at a frequency faster than the human eye can detect, reducing the time that the LED is operating while still delivering 100% light output.

Square ..... P/N 11-12267 ..... $259.00
Round ..... P/N 11-12266 ..... $259.00

ELECTRONIC SOLID STATE FLASHER FOR INCANDESENT & LED

This encapsulated solid state flasher is designed for use with standard DC incandescent filament bulbs or the newer LED lighting, with built in mounting tab.

Operating voltage: 12VDC to 24VDC. Load current: Up to 15A. Flash rate: 75 flashes per minute. Dimensions: 1-5/8"H x 1-3/16"W x 1-5/8"D. screw clamp terminals.

P/N 11-12102..... $27.50

SINGLE / 2 CHANNEL PWM DIMMERS

The two dimmers include a single channel model. Both use pulse wave modulation, or PWM electronic design for precise control of LED lighting such as LED instrument panel lighting, baggage, utility, map or post lights. The self-contained products are designed for easy installation and feature integrated on/off switches on each rheostat.

Rated at 18 Watts per dimmer channel, the dimmers are capable of operating a large number of interior lighting products and are engineered to provide additional over-current, over-voltage and reverse polarity protection.

Single Channel Pilot's Light Dimmer

Single Channel PWM (pulse wave modulation) dimmers are ideal for operating LED Light Strips and other interior incandescent or LED lighting, such as map lights, convenience, footwell or baggage compartment lighting. Features include reverse-polarity protection and over-voltage protection as well as an integrated on/off switch (in the fully counterclockwise position).

12 Volt DC (14VDC systems) version has 7 Amps of capacity (97W)
24 Volt DC (28VDC systems) version has 4 Amps of capacity (112W)
Just 1.25" x 1.6". Shaft diameter is 17/64" (6.75mm)
Screw-down terminals for easy connection of input and output wires
Powerful enough to operate a wide range of lighting products
High-quality push-on knob. Shaft length accommodates panel widths to 5mm.

2-Channel Pilot's Light Dimmer

2 Channel PWM (pulse wave modulation) dimmers are ideal for controlling more than one bank of LED or incandescent lighting, such as 2-color LED light strips or any combination of lighting (panel lighting, overhead map lights, foot well lighting, etc.). Each rheostat controls a separate lighting channel and contains its own On/Off switch (in the fully counterclockwise position)

1.5 Amp per channel version (12-14VDC systems) controls up to 18W per channel
7 Amp per channel version (12-14VDC systems) control up to 97W per channel and adds over-current protection and dual independent heat sinks
Ideal for LED or incandescent lighting
Dual rheostat shafts permit independent control of each channel
Screw-down terminals for easy connection of input and output wires
Powerful enough to operate a wide range of lighting products
High-quality push-on knob. Shaft length accommodates panel widths to 5mmSpecifications:

* Mode of Operation: Continuously variable, pulse width modulation (PWM)
* Supply Voltage: 8 to 20 VDC working voltage, up to 30VDC momentary. Dimmer must be fused at power source
* Output Voltage Range: From zero VDC to supply voltage
* Output Current Range: Up 1.5A
* Max Continuous Output Current: Full rated current up to 105F (40C), 75% of rated current up to 115F (46C)
* Ambient Temp Range: Minus 40F (-40C) to 115F (46C), with restriction as noted
* Size: About 1-3/4" inch square
* Weight: 30 to 40 gm, depending on wired connection type
* Heat Sink: Electrically isolated from voltage and acts as a circuit enclosure. Max. temperature rise under load is about 40 F (22C) above ambient.

Description	Part No.	Price
Single Channel PWM Dimmer 12V	11-06674	$33.75
Single Channel PWM Dimmer 24V	11-07286	$35.85
Two Channel PWM Dimmer	11-06675	$48.50
7 AMP per Channel Dimmer 97W	11-10783	$55.75

LIGHTMAN HIGH INTENSITY STROBE

Portable battery operated strobe which is an ideal addition to a pilot survival kit. Flash can be seen up to 3 miles and operates for 3-7 hours on AA batteries. It is impact & weather resistant; size: 3.5" on each triangular side; wt: 3.5oz. w/batteries. Includes storage pouch, belt/visor clip, magnet, & other attachment accessories. Furnished with clear dome. P/N 11-08200..... $22.75

Dome only (Price/ea.)

Amber..... P/N 11-08205 ..... $3.50
Green ..... P/N 11-08215 ..... $3.50
Clear ..... P/N 11-08225 ..... $3.50
Red... P/N 11-08210 ..... $3.50
Blue.. P/N 11-08220 ..... $3.50

BLACK FLUTED CONTROL KNOB

Black Bakelite knob. Fluted grip. ¼" brass bushing with set screw. ¾" in diameter x 7/16" high. Fits potentiometers for Superior Panel Technology dimmers.

P/N 11-07344..... $4.85

754 SERIES LED COCKPIT LIGHTS

Parts Sold Separately

These versatile cockpit lights can be used to illuminate the instrument panel. They can be repositioned to illuminate your charts with their 110 degrees of angle adjustment while being able to rotate a full 360 degrees. Dimensions: 3/4" diameter, 1-5/8" tall fully-extended, 7/8" tall at 90 degrees. The mounting stud is 1/4" in diameter and can be mounted onto a surface up to .200" thick. Switchable models facilitate wiring an SPDT switch (not included) to the light, allowing either red or white operation. We also offer a flush-mount flange to mount the light if the back side of the light is unreachable. Flush Mount - (Pictured above) This part is for mounting and LED light Model 754 from the front side. The adapter base is 1-1/2" in diameter, stands 1-2" tall, and has a 1" bolt hole circle.

Model	Description	Body	Part No.	Price
754R-14V	4 Red 14V L.E.D.s	Alum.	11-04393	$49.85
754R-28V	4 Red 28V L.E.D.s	Alum.	11-04394	$49.85
754W-14V	4 White 14V L.E.D.s	Alum.	11-07481	$49.85
754W-28V	4 White 28V L.E.D.s	Alum.	11-07482	$49.85
754RW-14V	2 Red 2 White 14V L.E.D.s	Alum.	11-04395	$49.85
754RW-28V	2 Red 2 White 28V L.E.D.s	Alum.	11-04396	$49.85
754R-14V	4 Red 14V L.E.D.s	Black	11-07483	$47.75
754R-28V	4 Red 28V L.E.D.s	Black	11-07484	$49.85
754W-14V	4 White 14V L.E.D.s	Black	11-07485	$49.85
754W-28V	4 White 28V L.E.D.s	Black	11-07486	$49.85
754RW-14V	2 Red 2 White 14V L.E.D.s	Black	11-07487	$49.85
754RW-28V	2 Red 2 White 28V L.E.D.s	Black	11-07488	$49.85

Accessories	Body Color	Part No.	Price
Flush Mount	ALUMINUM	11-04397	$14.50
Flush Mount	Black	11-07502	$14.75

LED MAPLIGHTS

The body of the maplight is constructed of aircraft grade 6061 T6 aluminum and black anodize treated for protection from corrosion. The LED bulbs and internal components are high quality components, and are engineered to withstand 150% of their rated voltage without damage. The wire is tefzel coated mil-spec wire used in certified aircraft and the component potting material is a two part epoxy making this maplight highly vibration and shock resistant. The average bulb life of the LED used in this product in excess of 20,000 hours of use and the maplight draws only 20 milliamps of power with virtually no heat produced.

The red LED used in this maplight gives the most light available in environments where night vision must be retained. This "LED Maplight" is built to be durable, simple to operate, lightweight and compatible with dimming systems. Each "LED maplight" is tested twice during production for maximum quality and customer satisfaction. The "LED maplight" is intended for use in Experimental, Amateur-Built aircraft only.

MAPLIGHT I - 4 LEDS			
Color	Voltage	Part No.	Price
Red	12	11-04387	$57.75
Green	12	11-04388	$60.75
White	12	11-04389	$60.75
Red	24	11-04390	$58.75
Green	24	11-04391	$60.75
White	24	11-04392	$64.75
MAPLIGHT II - 6 LEDS			
Color	Voltage	Part No.	Price
Red	12	13-06620	$69.50
White	12	13-06621	$69.75
Blue	12	13-06622	$69.50
Green	12	13-06623	$72.75
Red	24	13-06624	$69.95
White	24	13-06625	$68.85
Blue	24	13-06626	$69.75
Green	24	13-06627	$72.75
MAPLIGHT II - 6 LEDS Dual Color			
White/Red	12	13-06628	$74.75
White/Blue	12	13-06629	$72.75
White/Green	12	13-06630	$73.75
White/Red	24	13-06631	$79.95
White/Blue	24	13-06632	$69.85
White/Green	24	13-06633	$69.75

Accessories

Surface Mount Adapter SMA/MMII ..... P/N 13-06651 ..... $23.50

1512 SERIES LED EYE-BALL COCKPIT LIGHTS

These lights work great in overhead consoles and tight spaces. 30 degree adjustable angle, 360 degree adjustable rotation. LED technology draws less current (40 mA max.) and last much longer, (20,000+ hours.) and are fully dimmable.

The light is availabe in three light color version, two housing colors, and two voltages. The light colors are four red LED's, four white LED's, and two red/two white LEDS that can be lit separately with a SPDT switch (not included.) The housing colors are black or clear anodize. There are two voltages: 14 and 28. The light has a 1.45" flange and mounts in a 1.25" hole. The light requires 1" behind the mounting surface and is only 5/8" in front. It will accept up to 0.2" thick mounting surface.

Model	Description	Body	Part No.	Price
1512R-14V	4 Red 14V L.E.D.s	Alum.	11-07489	$112.95
1512R-28V	4 Red 28V L.E.D.s	Alum.	11-07490	$110.95
1512W-14V	4 White 14V L.E.D.s	Alum.	11-07491	$116.95
1512W-28V	4 White 28V L.E.D.s	Alum.	11-07492	$108.95
1512RW-14V	2 Red 2 White 14V L.E.D.s	Alum.	11-07493	$116.95
1512RW-28V	2 Red 2 White 28V L.E.D.s	Alum.	11-07494	$116.95
1512R-14V	4 Red 14V L.E.D.s	Black	11-07495	$108.95
1512R-28V	4 Red 28V L.E.D.s	Black	11-07496	$110.95
1512W-14V	4 White 14V L.E.D.s	Black	11-07497	$116.95
1512W-28V	4 White 28V L.E.D.s	Black	11-07498	$116.95
1512RW-14V	2 Red 2 White 14V L.E.D.s	Black	11-07499	$108.95
1512RW-28V	2 Red 2 White 28V L.E.D.s	Black	11-07501	$116.95

PRECISE FLIGHT HID LANDING & TAXI LIGHTS

HID Lighting provides the brightest illumination available. Increase Safety Increase Visibility 6X Brighter than Standard Lights 5000 Hour Bulb Life Reduce Heat & Power Consumption For Experimental Aircraft Only Only 35 Watts, Equivalent to 200

Type	Shape	Voltage	Part No.	Price
Taxi Lights	Round	12V	11-05582	$568.00
	Round	24V	11-05583	$568.00
	Rectangle	12V	11-05584	$568.00
	Rectangle	24V	11-05586	$568.00

FIXED LED COCKPIT LIGHTS

Cockpit and or baggage compartment light that mounts in a 1.250 hole. This light is fixed (does not swivel) and is great for lighting a specific area. It has 4 L.E.D.s that are fully dimmable and only draws 30ma current. It is available in 2 light colors and 2 housing colors.

Voltage	Light Color	Housing Color	Part No.	Price
14	White	Silver	05-08303	$67.50
14	Red	Silver	05-08298	$65.50
14	White/Red	Silver	05-08301	$67.50
14	White	Black	05-08304	$67.50
14	Red	Black	05-08299	$67.75
14	White/Red	Black	05-10634	$67.50
28	White	Silver	05-08352	$67.50
28	Red	Silver	05-08343	$65.50
28	White/Red	Silver	05-08347	$67.50
28	White	Black	05-08353	$67.50
28	Red	Black	05-08346	$65.50
28	White/Red	Black	05-08302	$67.50

LED CABIN LIGHTING

This light can be used for a wide variety of applications. It has a 110° angle adjustment while being able to rotate 360° and are fully dimmable. The light end is 1 1/2" in diameter, 2 3/4" tall fully extended and 1 1/2" high at 90°. The mounting stud is 3/8" and can be mounted to a surface up to 1/2 thick. This light has 12 LEDs that draw amps max.

Voltage	Light Color	Housing Color	Part No.	Price
14	Red	Silver	05-08306	$107.00
14	White	Silver	05-08314	$109.00
14	Red	Black	05-08307	$107.00
14	White	Black	05-08316	$109.00
28	Red	Silver	05-08309	$107.00
28	White	Silver	05-08318	$109.00
28	Red	Black	05-08312	$109.00
28	White	Black	05-08321	$109.00

EL

LED CABIN LIGHTS

12 Very Bright LEDs in an ABS Housing. 12or 24 Volt; Very low current draw (under 80 mA) Red , White, Blue, and Green LED colors available. Compact Size - Just 3"x2"x1" with side mounting flanges for easy installation. Broad, "flood" lighting distribution. Extremely resistant to vibration, shock and moisture. Ideal for baggage area and utility light illumination

Light Color	12V	12V Price	24V	24V Price
Red	11-05521	$44.90	11-08404	$44.90
White	11-05522	$48.50	11-08406	$43.50
Blue	11-05524	$44.90	11-08405	$44.90
Green	11-08408	$46.85	11-08407	$48.50

CABIN LIGHTS

Designed for use in experimental aircraft, these LED lights are excellent for cabin lighting, work station lighting, interior lighting, or cargo space illumination. They feature small size (2" x 3"), low power draw (less than 95ma, and weigh less than 3 ounces. the basic module consists of 3 rows of LED's potted with epoxy in a strong plastic housing. This makes it extremely resistant to vibration and moisture. The modules are very efficient, and are available in 12 or 24V and in super bright white or red colors. Furnished with a diffused light pattern and a 3 ft. cable length. No on-off switch.

12V Red LED ..... P/N 11-02880 ..... $109.85
24V Red LED ..... P/N 11-02883 ..... $108.75

LED MAP LIGHT, DOME, AND BAGGAGE AREA LIGHTS

INTERIORCONVENIENCEANDMAPLEDLIGHTING - Three very bright LEDs in an ABS housing. Compact size, just 2" long. #4 holes for horizontal mountnig. 12 volts, low current draw (under 40 mA). Ideal for map lighting or utility installations

Red ..... P/N 11-05527 ..... $7.95
Blue ..... P/N 11-09649 ..... $7.95
Green ..... P/N 11-09650 ..... $7.95

DOME AND BAGGAGE AREA LIGHTS

Four (4) very bright LEDs. Compact size, just 1.5" long. #4 mounting holes 12 or 24 volts. "Flood" type wide area lighting. Ideal for map lighting, dome or utility installations. Black or Chrome Base.. Chrome Base only comes in White and Red 12V. For exprimental aircraft only

Case	Light	Volt	Part No.	Price	Volts	Part No.	Price
Black	White	12V	11-09651	$7.95	24V	11-09654	$7.95
Black	Red	12V	---	---	24V	11-09655	$7.95
Black	Green	12V	11-09652	$7.95	24V	---	---
Black	Blue	12V	11-09653	---	24V	11-09656	$7.95
Chrome	Red	12V	11-05526	$7.90	24V	---	---

FLEXIBLE LED LIGHT STRIP GLARE-SHIELD LIGHTING AND DIMMER BY SPT

Superior Panel Technology has developed a brighter, wide-angle LED Light strip for aircraft panel illumination. The 39" LED light strip includes 60 wide-angle white LEDs. The LED light strips are adaptable for both 14V and 28V aircraft can be cut as needed. When on full power, it produces a nice flood light that is amazingly bright and produces enough light to read charts. The LEDs are fully dimmable using the SPT Pulse-Width-Modulation (PWM) dimmer that was specifically designed for the low current draw LEDs.

Description	Part No.	Price
SPT led light strip only 14v / 28v	11-10597	$48.95
SPT led light strip dimmer w/o switch	11-10598	$115.95
SPT led light strip and dimmer with switch	11-10599	$142.95

LED INTERIOR DOME LIGHTS

Interior Dome Light - 12VDC. 18 or 24 LED Dome light.

18 LED ..... P/N 13-15806 ..... $21.95
24 LED ..... P/N 13-15803 ..... $24.95

LED RAIL LAMPS

2-color Red/White LED lights.

12 inches ..... P/N 13-15804 ..... $39.95
18 inches ..... P/N 13-15805 ..... $44.95

LED WATERPROOF STRIP LIGHTS

LED Waterproof Strip Lights. Cool White LED 12VDC.

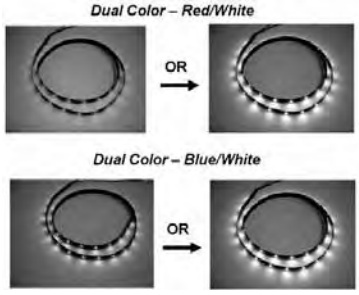
4 inches ..... P/N 13-15807 ..... $12.95
6 inches ..... P/N 13-15808 ..... $17.95
8 inches ..... P/N 13-15809 ..... $19.95

INSTRUMENT PANEL LIGHT STRIP

Flexible LED Instrument Lights Dimmable LEDs encased in a flexible resin strip. Ideal for mounting under glare shields for instrument panel lighting. Available in White, Red and Blue LEDs. Can be trimmed every 2-1/2 inches (every 3 LEDs). Easy-to-install, waterproof, shockproof and requires no inverter to operate. Draws only 83 mA, 12 volts DC, and has a service life of over 10,000 hours. 35" length, 3/8" width and 1mm high. Installs in minutes with double-sided tape

Description	P/N	Price
12V LED Light Strip - Red	11-05224	$37.90
12V LED Light Strip - Blue	11-05225	$37.90
12V LED Light Strip - White	11-05226	$37.90
24V LED Light Strip - Red	11-06828	$37.90
24V LED Light Strip - Blue	11-06829	$37.90
24V LED Light Strip - White	11-08409	$37.90

FLEXIBLE LED INSTRUMENT LIGHTS - DUAL COLOR



- Dimmable LEDs encased in a flexible resin strip.
- Identical to standard Flexible LED strips but with twice the LEDs.
- Permits independent control of the RED and White or Blue and White colors.
- Ideal for using White lights for loading/unloading or in cloudy conditions and MIX or use of colored lighting during dusk or night conditions.
- 35" length, 3/8" width and 1mm high. Installs in minutes with double-sided tape
- Power consumption no greater than 160mA.

Description	P/N	Price
12V Dual Flexible LED W001-Dual Red	11-05511	$52.75
12V Dual Flexible LED W001-Dual Blue	11-05512	$52.75
24V Dual Flexible LED W001-Dual Red	11-08410	$52.75
24V Dual Flexible LED W001-Dual Blue	11-08411	$49.90

FLEXIBLE LED INSTRUMENT LIGHTS - WITH CIGARETTE LIGHTER AND DIMMER

For production aircraft OR experimental aircraft

- The same quality Dimmable LEDs as our standard Flexible LED instrument Lights but with a Cigarette Lighter plug and in-line dimmer control
- Ideal for non-permanent installation in aircraft and other vehicles
- Power is supplied by the Cigarette Lighter plug (12 Volt systems only)
- In-line dimmer controls lighting level
- Available in Red, White or Blue LEDs.
- Ideal for mounting under glare shields for instrument panel lighting
- Can be trimmed every 2-1/2 inches (every 3 LEDs)
- Easy-to-install, waterproof, shockproof and require no inverter to operate.
- Draws only 83 mA, 12 volts DC, and has a service life of over 10,000 hours
- LED is 35" length, 3/8" width and 1mm high.

Description	P/N	Price
Flexible LED With Cigarette Lighter W003- CLA Red	11-05513	$48.50
Flexible LED With Cigarette Lighter W003- CLA White	11-05514	$48.50
Flexible LED With Cigarette Lighter W003- CLA Blue	11-05515	$48.50
Flexible LED Cigarette Lighter Dimmer Kit only	11-05516	$9.95

BATTPACK BATTERY BACKUP

The BattPack Battery Backup System can be used as an emergency/secondary power source for aircraft lighting. The 14V or 28V system will provide up to one hour or more of lighting for the FiberLite instrument lighting system (that uses LEDs light sources) or the Glow Strip (electroluminescent lamp) glare shield lighting system or for other low current draw lighting such internally lighted instruments. The system includes the battery holders, a three position switch (normal, off, emergency), engraved placard and tefzel hook up wire.

14V - BP12V ..... P/N 11-06595 ..... $47.85
28V - BP24V ..... P/N 11-06596 ..... $57.85

EL

MINI EYEBALL LED LIGHTS

Mini Eyeball LED spotlight. Powerful & Dimmable 1 Watt LED. Adjustable eyeball directs light beam at 30 degree angle. Designed for overhead consoles or side panels Mounts using spring loaded retainers Dimensions: 1.75" diameter - mounts in 1 1/8" diameter hole - depth is just 3/4". Satin black aluminum housing. 12 Volt DC, very low power drain (200mA). 24 Volt DC, very low power drain (240mA) Applications: Overhead panel, sidewall panels or anywhere a compact powerful LED light is needed.

Light	Volt	Part No.	Price	Volts	Part No.	Price
White	12V	11-09271	$41.90	24V	11-09274	$41.90
Red	12V	11-09272	$41.90	24V	11-09276	$41.90
Green	12V	11-09645	$41.90	24V	11-09646	$45.85
Blue	12V	11-09273	$41.90	24V	11-09277	$41.90

MINI LED SPOT LIGHTS

Black/ White

• For experimental aircraft • High intensity, dimmable multi-LED lamps• • Easy to install• Flexible pivot mounts • 1.75" length, 1" wide (at lens), 1.75" height (with base)• 160-180 Lumens • 0.15 amps @ 13.8 volts • 12 volts, less than 50mA • Metal housing available in Black or Aluminum • Available in multiple LED color.

Case	Light	Volt	Part No.	Price	Volts	Part No.	Price
Black	Red	12V	11-05519	$45.75	24V	11-08771	$45.75
Black	White	12V	11-05520	$45.75	24V	11-08772	$45.75
Black	Green	12V	11-09647	$45.75	24V	11-09289	$45.75
Black	Blue	12V	11-09285	$45.75	24V	11-05517	$45.75
Silver	White	12V	11-05518	$45.75	24V	11-10577	$45.75

GOOSENECK LED CHART LIGHTS

Features: Bright Gooseneck LED fixtures with 1 Watt LED, Powerful, dimmable and No RF Interference Heavy-duty construction, Beam dispersion – 60 degrees, Includes mounting hardware, Dimensions: Length: 11" (base to top); Flexible shaft length is 8.75". Head is 2"; Width: 0.75 inches (at head), 12 Volt DC, very low power drain (0.15 mA). On/Off switch optional.

12V White LED with switch .....P/N 11-09281 .....$37.50
12V Red LED with switch.....P/N 11-09282 .....$44.75
12V White LED with out switch .....P/N 11-09283 .....$33.95
12V Red LED with out switch.....P/N 11-09284 .....$42.75

SURFACE MOUNT LED LIGHTS

Surface mount convenience light. 2 Bright LEDs behind a frosted panel. Surface mount with hardware. Dimensions: 2.5" x 1.25" x 5/8". #6 mounting holes. 12 Volt DC or 24 Volt DC, very low power drain (0.1mA). Applications: foot wells, door panels, side panels, map light, chart lights or anywhere a dimmable, bright LED light is needed.

Light	Volt	Part No.	Price	Volts	Part No.	Price
White	12V	11-09255	$11.90	24V	11-09258	$11.90
Red	12V	11-09256	$11.90	24V	11-09259	$11.90
Green	12V	11-09640	$11.90	24V	11-09641	$11.90
Blue	12V	11-09257	$11.90	24V	11-09261	$11.90

FLUSHMOUNT WATERPROOF LED UTILITY LIGHT

Applications: Side panels, overhead consoles, door panels, exterior application (waterproof)
Features: Bright LED fixtures with ¼ Watt LEDs
Powerful & Dimmable, Installs in a 3/4" hole with self-locking nut, Designed for overhead consoles or side panels, Mounts in panels up to 3/4" thickness Dimensions: 1.25" length x 1 ¼" top flange; mounts in 3/4" diameter hole; depth is just 1 1/8"; installed flush height is 1/8" Fresnel lens and clear plastic housing Waterproof and vibration resistant 12 Volt DC, very low power drain (0.1 mA)

12V White.....P/N 11-09278.....$8.95
12V Red.....P/N 11-09279.....$9.50
12V Blue.....P/N 11-09280.....$9.50

LED PANEL MOUNT INDICATORS

Specifications: Mounting Hole Dia: 6.35mm. Forward Current If: 20mA. Forward Voltage: 12V or 24V, your choice. Luminous Intensity:1 0mcd. Viewing Angle: 60°. Bulb Size: 5.08mm. Lens Width: 7. RoHS Compliant: Yes.

Color	Volts	Part No.	Price	Volts	Part No.	Price
Red	12V	LEDRED12	$8.65	24V	11-07839	$7.75
Green	12V	11-07841	$8.65	24V	11-07840	$6.95

SOLAR BLUE LED AIRPORT TAXIWAY MARKER

Emits blue LED light from both sides. Poly Carbonate, Poly Crystalline Silicon fixture. Maintenance Free. LED Visibility over 1/2 mile. Nickel Metal Hydride Batteries. Secures to asphalt or concrete w/2 part epoxy. Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Blue BSL05DTW .....P/N 11-09385 .....$44.95

SOLAR GREEN LED CENTERLINE TAXIWAY MARKER

Emits green LED light from both sides. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free. LED visibility over 1/2 mile Nickel Metal Hydride Batteries Secured to asphalt or concrete w/epoxy. Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Green BSL-05DCL .....P/N 11-09394 .....$44.95

SOLAR GREEN LED THRESHOLD MARKER

Emits Green/Red LED light. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free LED visibility over 1/2 mile Nickel Metal Hydride Batteries Secures to asphalt or concrete w/epoxy. Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Green BSL-05DTH.....P/N 11-09387 .....$44.95

SOLAR WHITE LED AIRPORT EDGE MARKER

Emits White LED light from both sides. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free. LED visibility over 1/2 mil. Nickel Metal Hydride Batteries Secured with 2 part epoxy Approximately: 4¾" x 4¾" x ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

White BSL-05DEL.....P/N 11-09386 .....$44.95

SOLAR RED LED AIRPORT OBSTRUCTION MARKER

Emits Red LED light from one single side. Poly Carbonate, Poly Crystalline Silicon. Maintenance Free Nickel Metal Hydride Batteries. Secures with 2 part epoxy. Approximately: 4" x 4" X ¾". Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens. Red BSL03AOM .....P/N 11-09389 .....$39.99

SOLAR LED BEACON MARKER RED

Emits light from all sides. Poly Crystalline Silicon, ABS Plastic. Super Bright Red LED light. Mounted to post or pipe. Approximately: 9" circumference x 6" height. Designed to withstand 20 tons PSI. Built for extreme weather conditions. Three (3) to five (5) year life span, Maintenance FREE Batteries charge in approximately four (4) hours using the suns energy. Operate all night (8 or more hours on a full charge). LED brightness equates to 35 lumens.

Red Beacon VRH-4704.....P/N 11-09384 .....$51.95

RUNWAY MARKER ADHESIVE PADS

The Adhesive Epoxy Pads are a non toxic, zero V.O.C., performance thermoplastic adhesive designed to adhere raised pavement markers to the concrete or asphalt surface. When heated with a propane heat torch, a Pad liquefies and fuses with the surface and the marker providing a bond that will last throughout the marker's lifetime. Size: 5" x 5".

P/N 13-10451 ..... $4.00

EL

DIMMING SYSTEMS - COCKPIT LIGHTS

AMERI-KING LIGHT DIMMERS

Linear Designed, Single, Triple, Quad outputs. FAA TSO-C71 approved. Input: +14 Vdc or + 28 Vdc. One year warranty. Optional extension of three years. 1.25 lbs.
Features: • Short Circuit Protection. Solid State Linear Design. D-Sub/Miniature AMP connector included

Description	Part No.	Price
AK-551-LD-S 1 POT 6AMP 0-28V	11-06228	$99.75
AK-551-LD-S 1 POT 12AMP 0-14V	11-06229	$206.95
AK-551-LD-S 1 POT 12AMP 0-28V	11-06230	$196.95
AK-551-LD-S 1 POT 18AMP 0-14V	11-06231	$292.95
AK-551-LD-S 1 POT 18AMP 0-28V	11-06232	$292.95
AK-551-LD-S 1 POT 24AMP 0-14V	11-06233	$364.00
AK-551-LD-S 1 POT 24AMP 0-14V	11-06234	$364.00
AK-551-LD-D 2 POT 12AMP 0-14V	11-06235	$185.00
AK-551-LD-D 2 POT 12-AMP 0-28V	11-06236	$185.00
AK-551-LD-D 2 POT 24AMP 0-14V	11-06237	$364.00
AK-551-LD-D 2 POT 24AMP 0-28V	11-06238	$383.00
AK-551-LD-Q 4 POT 24AMP 0-14V	11-06239	$364.00
AK-551-LD-Q 4 POT 24AMP 0-28V	11-06240	$364.00
AK-551-LD-Q 8 POT 24AMP 0-14V	11-06241	$713.00
AK-551-LD-Q 8 POT 24AMP 0-28V	11-06242	$713.00

SOLID STATE LIGHT DIMMING KIT

Economical solution for the dimming of aircraft interior lighting. This heavy-duty solid state dimming kit by Superior Panel Technology includes a potentiometer with built-in off switch and 115W power transistor mounted to a heat sink. The supplied colored Mil Spec wire and very easy to follow wiring diagram allows the aircraft builder to customize the wiring harness to fit individual needs. When compared to rheostats, this unit provides more even dimming when a combination of LEDs, incandescent bulbs and electroluminescent lamps (such as SPT's Glow Strips) are used. Appropriate for both 14V and 28V systems. Knob sold separately ..... P/N 11-00846 ..... $67.95
Control Knob ..... P/N 11-07344 ..... $4.85

LC-40E/LC-40 LIGHTING CONTROLLERS

The LC-40e comes in an anodized brushed aluminum chassis. Features extra control knob sensitivity at dim end of the lighting range where it is needed most. It is microcontroller controlled and has continuous over voltage, current limit & fault protection. Each channel can handle 1.5 amps. LC-40E P/N 11-03366 ..... $126.95

VARIABLE INTENSITY LIGHTING CONTROLLER

The A200-DDC Intensity Controller will support up to ten instruments in a single installation. It provides infinitely variable, uniform intensity control for all instruments. These units are TSO qualified with all 200 Series instruments and is STC'd as a primary replacement instrument component under all flight conditions (day/night VFR and IFR). DC Power Source: Input voltage 6 to 36 VDC. Power consumption 250mA (maximum brightness).
P/N 10-04809 ..... $130.80

PWM DIMMER BY SPT

Superior Panel Technology has developed three new, compact solid state Pulse-Width-Modulation (PWM) dimmers to meet all aircraft dimming needs.
They are extremely easy to install (one terminal screw for power in, one for ground and the third for power out), minimal heat dissipation, and by choosing the right dimmer (EL/LED Dimmer, Heavy Duty or Extreme Heavy Duty) you avoid the "dimming steps" in brightness often found in other PWM dimmers.
The EL/LED Dimmer would be used for LED's and electroluminescent lighting such as SPT's Glow Strips. The Heavy Duty dimmer can handle up to 100 watts. The Extreme Power can be used for up to 400 watt @28V or 200 watt @14V. These dimmers have the smallest footprint on the market for a PWM dimmer with a switch.

Description	Part No.	Price
LED/EL Dimmer with Off Switch	11-10603	$114.95
LED/EL Dimmer without Off Switch	11-10604	$99.85
Heavy Duty Dimmer with Off Switch	11-10606	$114.95
Heavy Duty Dimmer without Off Switch	11-10608	$97.95
EXTREME DUTY Dimmer without Off Switch (Only Availablewith out)	11-10612	$128.95

VAL AVIONICS CLA 500 COCKPIT LIGHTING ASSEMBLY

The CLA 500 is a Multiple Circuit, Solid State Cockpit Lighting Assembly that will accommodate (4) independent dimmer lighting circuits such as instruments, sub panels, avionics, eyebrow, overhead, flood, and post lamps etc. The CLA 500 unit itself measures 5"l x 4.7"w x 1.5"h; wt: 0.8 lbs. The unit is rated at 14/28VDC input at 2.5 amps max per circuit. The CLA 500 comes complete with 4 on/off dimmer control switches and connector assembly.The CLA 500 carries a full 1 yr factory warranty.
Not TSO'D P/N 11-05700(14v) $225.00
P/N 11-04592(28v) $225.00

COCKPIT LIGHTS

TYPE C4A - A multi-purpose light providing narrow spotlight or floodlight beam. Rotate dial for red or white lens. Push-button for instant full light. Adjustable rheostat. Coiled cord & snap-in mounting base makes light portable in cockpit area. New mfg. Most suitable for larger aircraft. 12V ..... P/N 11-03921 ..... $137.75
24V ..... P/N 11-03922 ..... $145.00

MINIATURE EYEBALL COCKPIT LIGHTS

MOD1 OVERHEAD CONSOLE - The Mod1 Overhead Console is mounted to top of cabin or top wing skin with four stainless steel screws into the four standoffs or posts on Console. All lights are ordered separately. Weight: 3.8 oz.
P/N 11-06003 ..... $27.65

MINIATURE EYEBALL COCKPIT LIGHTS - A compact, low current draw, (now all LED), lightweight light for instrument panel, chart reading, or baggage area illumination. A ¾" black acrylic ball with ¼" aperture rotates in a rugged 1.5" diameter ABS body for full swivel adjustment. Mounts with three black screws included.Originally used on Voyager's around the world flight.
White ..... P/N 11-07800 ..... $18.75
Red ..... P/N 11-03141 ..... $18.75
Green ..... P/N 11-08480 ..... $18.75

EYEBALL COCKPIT LIGHTS

These high quality cockpit lights are engineered to match the eyeball swivel vents on the page on Air Vents in this catalog. Simple twist on/off operation provides white beam for cockpit lighting. Made from 2024T351 aluminum. Diameter: 2.75". Has 4 mounting holes (1/8"dia.) which are spaced 2-3/8" apart on a mounting plate with a thickness of .71". Made in USA.
Black (no bulb) ..... P/N 05-01401 ..... $68.85
Gray (no bulb) ..... P/N 05-01402 ..... $68.85
Order 14V or 28V bulb separately
14V ..... P/N 11-04197 ..... $1.35
28V ..... P/N 11-04172 ..... $3.45

PANEL POST LIGHT

Panel Post Light. Compact design, just 3/4" x 1/2" (6mm shaft diameter). 2 super-bright LEDs. Ideal for panel lighting or map lighting.
12V White ..... P/N 13-15801 ..... $14.95
12V Red ..... P/N 13-15816 ..... $14.95
24V White ..... P/N 13-15802 ..... $14.95
24V Red ..... P/N 13-15817 ..... $14.95

LED TASK LIGHT MODULE 24V WHITE

The LED task light features a rain and brake light, two separate functions in the same package. The LED task light module has a high flash rate which is important in attracting attention in low visiblitity conditions. This is a three wire unit with wires for Brake, Rain and battery negative. It uses LOW power, so minimal that you can power it from a single 9 volt battery. Operating voltage range 5vdc to 18vdc, Dimensions: 2.7"x2.5"x0.89"
P/N 11-02881 ..... $74.95

EL

LIGHT DIMMING KIT

Kit includes a Mil.Spec Potentiometer, Mil. Spec Power transistor mounted to a heatsink and a wiring harness. Breaker Size: 2A @ 14V, 1.5A @ 28V, Operating Range: 0-32 VDC, Current: 1.4A@ 14V, .7A@28V, Power: 20W P/N 11-02082 ..... $153.95

4-CHANNEL LED DIMMER

Easy-to-install, 7 Amps per channel. High quality knobs and wiring kit with stand-offs. 12VDC. Control up to Four (4) different LED or Incandescent light circuits independently. P/N 13-15799 ..... $69.95

PANEL LIGHT DIMMING RHEOSTATS

These high-quality rheostats are used in production aircraft to dim instrument panel lights. Size: 1-9/16" dia. x 2-1/4" long. Mounts in 3/8" dia. panel hole. Shaft is 1/4" dia. w/flat for knob set screw. New manufacture. Power Rating: 25 Watts.

0-8 OHM Panel light dimming retrostat ..... P/N 0144 ..... $34.25
0-15 OHM Panel light dimming retrostat ..... P/N 0146 ..... $49.50

FINGER GRIP KNOB

Finger grip knob or rheostats. 1-1/2" Diameter, 1/4" Hole.

P/N 11-07967 ..... $9.65

MULTIPLE CIRCUIT SOLID STATE LIGHT DIMMERS

Choose from 2, 3, or 4-circuit heavy-duty 115W light dimming systems by Superior Panel Technology. Circuit board design with pin connector allows for easy and neat wiring. Mil Spec Tefzel color-coded wire is included.. Unlike rheostats, this system will provide even dimming of incandescent lights, electroluminescent lamps (such as the SPT Glow Strips) and LEDS when used in combination on the same circuit. A separate control switch (with circuit breaking off position) is included for each circuit. Knobs sold separately.

2 Circuit ..... P/N 11-02046 ..... $119.00
3 Circuit ..... P/N 11-02047 ..... $211.95
4 Circuit ..... P/N 11-02049 ..... $249.95
Control Knob ..... P/N 11-07344 ..... $4.85

K11 AIRCRAFT PANEL DIMMER

Features: • 3 outputs with a tracking capability - One output is the "Master", and the other two can be set to track the master from 0 to any set voltage behind the master. This allows items on the dimmer bus to be grouped according to their relative brightness. Photocell light sensor automatic control capability • Low cost • Performance: • Voltage range: 0 to Input supply - .6V • Output current - Depends on ventilation - Each channel is capable of 5 amps, practical dissipation limitation is ~ 5 amps total for all channels. (For 28 volt systems, current limit is 1 A per channel) Unit connections are made through a DB15 connector, and are easy to integrate into the rest of the aircraft wiring. P/N 11-02244 ..... $149.95

MICROPULSE LANDING LIGHT CONTROL

This Micropulse Landing Light Control has 12 to 35 VDC, 0-8 A per channel, Control over 224 Watts per channel in a .9" Inch square by 1.9" Package. Complete compact, light weight, powerful, solid state Landing light controller. The MicroPulse has all the functions you should need.

MicroPulse Function Modes: Switch Positions: • OFF Both Circuits Off • L Left on only (CKT1) • R Right on only (CKT2) • L&R Both circuits On • A44 Alternate 44 PPM (STD) • B44 Both Flash 44 PPM • A88 Alternate 88 PPM • A120 Alternate 120 PPM. Capacity: • 96 Watts @12 VDC each channel • 224 Watts @28 VDC each channel.

P/N 11-11886 ..... $162.75

MICRODIM DUAL DIMMER

5 to 35 VDC, 0-7.5 A per channel, Control over 224 Watts per channel in a .9" Inch square by 1.9" Package.

Complete compact, light weight, powerful, solid state Dimmer and switch controller.

Microdim Dual Dimmer Revision SWP has all the functions you will need. Dimming on one channel and switching on channel 2 for the position lights/navigation lighting is activated any time there is output on the dimming channel. P/N 11-11887 ..... $187.75

MAX DIM DIMMER CONTROL UNIT

5-35 VDC 0-12.5A Control 350 Watts in a 1-1/4" Diameter package. Complete compact, light weight, powerful, solid state dimmer. Great for light wedges. FAA STC Approved. PMA'd . Features: • Aircraft Lighting Boat Cruiser Cabins. • Instrument Panels. •Hundreds of DC Lighting Control applications ..... P/N 11-05738 ..... $225.95

MAXPULSE LANDING LIGHT CONTROL/ PULSER - (STC'D)

Extreme long life, low temperature operation, high current capability, noise free operation and small size makes it a ideal landing light controller for all aircraft. This new STC version sports eight functional pulse, flash and steady state modes of operation. It is also an ideal replacement for old technology controllers requiring large heavy heat sinks and or noisy relays as part of the installation. STC'd

P/N 11-06998 ..... $249.95

MAXPULSE LANDING LIGHT CONTROLLER MODEL - B

12-35 volts @ 10 Amps per channel - 2 channels, Ring Connectors, Controlled Output: 0 to 12-35 VDC , 0 to 10 A per channel. No outboard heat sinks, rheostats, or other packages. STC, PMA, RTCA/DO-160E SEC 21: qualified. Configure for Wig Wag or Wing and taxi light pulsing, single light pulsing etc. Increased safety for your passengers and yourself. Hundreds of DC Lighting Applications. Emergency Vehicles. Assembled in the USA

P/N 11-08175 ..... $252.95

MAXDIM DIMMER CONTROLLER MODEL - B

Specifications: 5-35 volts @ 15 Amps. Ring Connectors. Controlled Output:. 0 to 5-35 VDC - 0 to 15 A Capacity: 75 Watts @5 VDC. 180 Watts @12 VDC. 360 Watts @24 VDC. 420 Watts @28 VDC. 700 Watts @35 VDC Includes: MaxDim unit, installation instructions, color coded terminals, reference panel label, STC printout for your logs, installation template, and knob. ..... P/N 11-08176 ..... $248.95

MAXDIM DUO DUAL DIMMER CONTROLLER MODEL - C

12 to 35 VDC, 0-15 A per channel, Control 1050 Watts In a 1-1/4 Inch Diameter Package. Complete compact, light weight, powerful, solid state dimmer. Model C accepts spade terminals.

P/N 11-12421 ..... $324.00

MAXDIM DUO DUAL DIMMER CONTROLLER MODEL - D

12 to 35 VDC, 0-15 A per channel, Control 1050 Watts In a 1-1/4 Inch Diameter Package. Complete compact, light weight, powerful, solid state dimmer. Accepts ring terminals

P/N 11-08177 ..... $339.00

For Complete info on Dimmers and MaxDim Mini Control Units please visit our website at www.aircraftspruce.com

MAXDIM MINI SINGLE DIM CONTROL UNIT

Single Channel, complete, compact, light weight, powerful, solid state dimmer. 5 to 35 VDC, 0-5 A per channel, control over 175 watts channel in a .85 inch square by 3" package. Applications and features: Aircraft instrument panel lighting. Excellent control of Nulite instrument lighting. Smaller DC motors. Instrument Panels. Nulite dimmers. UMA dimmer. Avion Glare shield dimmer. Boat Cruiser Cabins. LED lit panels, Excellent LED control. Hundreds of DC Lighting Control applications. Included: MaxDim Mini unit. Installation instructions. Color coded terminals. Reference panel label. STC pending printout for your logs. Installation template. Knobs.

Single Dimmer Control ..... P/N 11-09753 ..... $219.95
Dual Dimmer Control ..... P/N 11-09752 ..... $368.00

MICRODIM SINGLE CHANNEL DIMMER

5 to 35 VDC, 0-7.5 A per channel, Control over 210 Watts In a 0.9" Inch square by 1.9" Package. Complete compact, light weight, powerful, solid state PWM dimmer. Sized for those tight panels with smaller dimensions and depth of 1.9.

Applications and features: • SINGLE CHANNEL control of aircraft Lighting • Aircraft instrument panel lighting • Excellent control of Nulite instrument lighting • LED PWM dimmer, low range enhanced • RTCA/DO-160E SEC 21: RFE Qualified • Instrument Panels • Nulite dimmers • UMA dimmer • LED Glare shields, overheads • Avion Glare shield dimmer • LED lit panels • Hundreds of DC Lighting Control applications • Assembled in the USA

Single Channel (9 9100-001-I) ..... P/N 11-11191 ..... $199.85
Dual Channel (9100-001-J) ..... P/N 11-11192 ..... $239.95

EL

UMA INSTRUMENT LIGHTING - PMA'D

The UMA EL Light Bezel System replaces instrument post-lights, provides a uniform light around the dial of each instrument using a solid-state electro-luminescent element rather than a incandescent bulb. The bezels have a design life of 5,000 operating hours. The system consists of a bezel or "wedge", DC to AC inverter, and a connector kit. The bezel fits over the instrument face, and is available in a variety of configurations to accommodate various adjusting knobs. The bezel mounts either between the instrument face and the panel, or between the panel and the overlay. The bezel is held in place by the instrument mounting screws. The DC to AC inverter provides power for as many as 12 bezels or about 25 sq. inches of lighting. To facilitate installation and maintenance a connector kit is supplied with each bezel. Colors are White, Aviation Green, and red, with white being the only FAA approved color. The PMA is based on a STC for Beechcraft King Air 90s. To assist you in filing a FAA form 337, the approved data package used for the King Air installation is available from UMA, or can be downloaded on or website. Copies of previously issued 337s are available upon request.
* Inverter is required. Must be ordered separately.

Model No.	Size	Cut-Out	Light	Part No.	Price
2-30-W	3-1/8"	SINGLE (Left or right)	WHITE	10-00794	$58.75
2-30-G	3-1/8"	SINGLE (Left or right)	GREEN	10-02089	$58.75
2-30-R	3-1/8"	SINGLE (Left or right)	RED	2-30-R	$58.75
2-31-W	3-1/8"	NONE	WHITE	2-31-W	$58.75
2-31-G	3-1/8"	NONE	GREEN	10-02090	$58.75
2-31-R	3-1/8"	NONE	RED	2-31-R	$58.75
2-33-W	3-1/8"	CENTER	WHITE	2-33-W	$58.75
2-33-G	3-1/8"	CENTER	GREEN	10-02091	$58.75
2-33-R	3-1/8"	CENTER	RED	2-33-R	$58.75
2-34-W	3-1/8"	DOUBLE	WHITE	2-34-W	$69.95
2-34-G	3-1/8"	DOUBLE	GREEN	10-02092	$70.85
2-34-R	3-1/8"	DOUBLE	RED	2-34-R	$69.85
2-35-W	3-1/8"	NONE w/Undercut for VSI	WHITE	11-02095	$58.75
2-20-W	2-1/4"	SINGLE (Left or Right)	WHITE	10-00792	$58.75
2-20-G	2-1/4"	SINGLE (Left or Right)	GREEN	10-02087	$56.75
2-20-R	2-1/4"	SINGLE (Left or Right)	RED	2-20-R	$57.75
2-21-W	2-1/4"	NONE	WHITE	2-21-W	$58.75
2-21-G	2-1/4"	NONE	GREEN	10-02088	$58.75
2-21-R	2-1/4"	NONE	RED	10-00793	$58.75

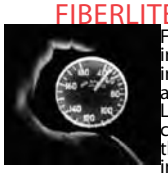
INVERTERS FOR UMA LIGHTING -
5V (JETS) ..... P/N 10-02086 ..... $65.00
14V ..... P/N 10-02083 ..... $65.75
28V ..... P/N 10-00986 ..... $65.75
Each inverter will run up to 12 lighting wedges.
Rheostat ..... P/N 6002 ..... $25.80
Elec. Wire Kit* ..... P/N 10-02085 ..... $12.80
*Contains AMP connector and connecting pins

UMA ELECTRO-LUMINESCENT LIGHT STRIPS

UMA, Inc. now offers an ultra-thin (0.006") flexible self-adhesive long-life light strip based on the same technology that is used in our EL Light Bezel. Since there is no filament, these light strips are not bothered by vibration or rapid changes in temperature. Perfect for use under a glare shield, or for any other interior lighting need (both aircraft and automotive). Length may be cut as needed. Available colors are Aviation Green & White/Blue. Power Inverter required.

Dimensions	Color	Part No.	Price
0.5"W x 25"L	White/Blue	10-00321	$65.75
0.5"W x 25"L	Aviation Green	10-00322	$65.75
1.5"W x 18"L	White/Blue	10-00323	$85.00
1.5"W x 18"L	Aviation Green	10-00324	$83.75

FIBERLITE INSTRUMENT LIGHTING SYSTEM



FiberLites, by Superior Panel Technology, offers an innovative FAA approved instrument and label lighting system that uses fiber optics to evenly illuminate aircraft instruments with easily accessible, long lasting, LED light sources. Fiber-optics are affixed to specially designed bezels that are sandwiched between the instrument and the panel for appearance of an internally lighted instrument. The advantages of using FiberLites over other lighting devices are a) easier wiring, three LED light sources will light up all the instruments on most panels b) the LEDs are very long lasting, however, if they ever do need to be replaced, they are easily replaced without having to remove any instruments c) FiberLites provide even 360 degree lighting around the instrument, d) the instrument is not altered in any way e) FiberLites can be used to backlight printed labels. The following items are included in the FiberLite package. a) Three LED light sources with appropriate resistor (must specify 14 or 28V system). b) Eight 3 1/8" instrument bezels c) You can substitute TWO 2 ¼" inch bezels for each 3 1/8" inch instrument light. For example a package could consist of SIX 3 1/8" and FOUR 2 ¼" instrument lights. Bezels come in 3 sizes (3 1/8" standard with four screw holes (FL318), 3 1/8" with cut-out in corner that can be rotated either for a right or left hand cut-out (FL318CO) and the 2 ¼" bezel with four screw holes (FL214). Please specify the bezel sizes, and quantity and the voltage of the aircraft.The Superior Panel Technology's Pulse-Width Modulation Dimmer is recommended for dimming the LEDs. Optional 14V or 28V battery back-up systems are available and recommended. See Accessories.
Aircraft spruce and spt have worked together to offer a discount on the fiberlites and pwm dimmer when ordered as a package.
3 LED Package ..... P/N 11-04009 ..... $254.95
3 LED Package with PWM Dimmer ..... P/N 11-10601 ..... $349.95
Individual Parts Pricing:
2-1/4" inst. ..... P/N 11-04000 ..... $26.95
3-1/8" inst. ..... P/N 11-04002 ..... $26.95
3-1/8" inst w/cut out ..... P/N 11-04003 ..... $26.95
14V LED Light Source ..... P/N 11-03999 ..... $19.75
28V LED Light Source ..... P/N 11-07838 ..... $19.85
Battery Back Up 14V ..... P/N 11-06595 ..... $47.85
Battery Back Up 28V ..... P/N 11-06596 ..... $57.85
LED EL Dimmer with off switch ..... P/N 11-10603 ..... $114.95
LED EL Dimmer without off switch ..... P/N 11-10604 ..... $99.85
LED Heavy Duty Dimmer with off switch ..... P/N 11-10606 ..... $114.95
LED Heavy Duty Dimmer without off switch ..... P/N 11-10608 ..... $97.95
Extreme Duty Dimmer without off switch ..... P/N 11-10612 ..... $128.95

LED COCKPIT LIGHTING SYSTEM KITS

The simplest and best priced LED cockpit lighting and interior lighting system on the market – the CRAZEDpilot LED Cockpit Lighting System includes over 5 feet of adhesive-backed flexible LED light strip (AVAILABLE IN PURE WHITE) which can be trimmed to any length (or multiple lengths, read on!) The system also contains a digital dimmer control with black panel-mount knob, and detailed installation instructions and clear wiring diagram. Weighs ONLY 2.5 ounces installed! The digital dimmer control uses pulse technology to prevent heat generation and current draw commonly found in inferior designs.
The LED light strips are 8mm wide by 3mm thick made using flexible PC-board technology – with a clear vinyl coating over a black background, these light strips nearly dissapear when not illuminated. The strips are capable of curves and countours of a 2 inch radius, which will fit nicely into the corner of your glare shield or custom panel (see photographs on this page). The 3M adhesive backed light strips bond and stay bonded once placed permanently.
Red ..... P/N 11-11201 ..... $39.95
White ..... P/N 11-11202 ..... $39.95

PANEL INDICATOR LAMPS

Screw-in terminals, easy retrofit installation. Model: Pilot-12mm-Series.

Color	Part No.	Price
White	13-15811	$12.95
Red	13-15812	$12.95
Green	13-15813	$12.95
Blue	13-15814	$12.95
Yellow	13-15815	$12.95

FIBER-OPTIC PANEL BACKLIGHTING KIT

Backlight the lettering on reverse engraved panels using FiberLites fiber-optic panels. The panels can be cut to width and normally one fiber-optic panel can illuminate all the text for switches and breakers on a panel. The fiber-optic panels are 3" x 8.5" and come with the needed connectors and three LEDS (either green or white). The panels can also be used as mini flood lights over breakers and switches.
Fiber-Optic Back Light Kit Green ..... P/N 11-08561 ..... $149.95
Fiber-Optic Back Light Kit White ..... P/N 11-08562 ..... $149.95

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AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PILOT LIGHTS - INSTRUMENT LIGHTING

NULITE INSTRUMENT LIGHTING SYSTEM

Replace your existing lighting system of post lights or indirect lighting using the latest technological developed in optical enhancements. The NULITE uses dual incandescent bulbs with a rated life of 10,000 hours in a translucent material designed to look like an internally lighted unit. Nulites are easily installed by anyone in just minutes and are pre-cut to fit all standard instruments operating on 14, or 28 Volts. NULITE light wedges can be installed over the instrument or between the panel and the instrument. One wire is connected to ground and the other to a dimmable buss. Installation takes about 30 minutes for each unit and does not require any special tooling. The instrument is not altered in any way therefore only a log book entry is required. FAA/PMA approved.

Description	Part No.	Price
14V 2-1/4"	11-03851	$48.50
14V 2-1/4" Left cutout	11-01257	$48.50
14V 2-1/4" Rt. cutout	11-04373	$46.50
28V 2-1/4"	11-02571	$46.50
28V 2-1/4" Left cutout	11-04374	$46.50
28V 2-1/4" Rt. cutout	11-04375	$43.95
14V 3-1/8"	11-02572	$46.50
14V 3-1/8" Lt. cutout	11-02673	$46.50
14V 3-1/8" Altimeter	11-02573	$46.50
14V 3-1/8" for VSI	11-01099	$46.50
28V 3-1/8" for VSI	11-01230	$46.50
14V 3-1/8"Rt. cutout	11-02574	$46.50
28V 3-1/8"	11-03852	$46.50
28V 3-1/8" Lt. cutout	11-02762	$46.50
28V 3-1/8" Altimeter	11-02851	$46.50
28V 3-1/8" Rt. cutout	11-03853	$46.50
14V 3-1/8" R/L cutout	11-00818	$46.50
28V 3-1/8" R/L cutout	11-01352	$46.50
14V, 4" light bar	11-02788	$46.50
28V, 4" light bar	11-02789	$46.50

NULITE NV6 LIGHTING

Features: Daytime Readability: Because Nulites utilitze an open ring bezel, there are no daytime readability issues., Ease of Installation: A typical aircraft installation takes approximately 8 hours and can be done in the field by an A&P mechanic., Color Shifting: Nulites uses NVIS White Technology that does not shift any color and illuminates what is on the instrument., Upgrades the Panel Not The Instrument: Nulite nvg does not alter the instrument in any way and reduces the need for rotables, Lower Cost: A Nulite nvg conversion cost a third of what traditional filtered conversions cost. Reduce Training Time: With an open ring bezel, there is no need for additional training for Daytime Operations.

Specifications: NVIS White long lasting LED, Pulse type dimming circuit, 28 volt systems with lower power consumption (40ma average per unit)

Nulites are FAA approved and STC's are available, .220" thick and tight tolerances of .005", Meets all FAR burn tests, NVIS radiance per MIL-STD-3009

White Light 28V 3-1/8" Round ..... P/N 11-08774 ..... $649.95
White Light 28V 3-1/8" Left Cutout ..... P/N 11-08775 ..... $649.95
White Light 28V3-1/8" Altimeter Cutout ..... P/N 11-08776 ..... $649.95
White Light 28V Left & Right Cutout ..... P/N 11-08777 ..... $649.95
White Light 28V 3-1/8" Right Cutout ..... P/N 11-08778 ..... $649.95
White Light 28V 3-1/8" VSI Cutout ..... P/N 11-08779 ..... $649.95
White Light 28V 2-1/4" Round ..... P/N 11-08780 ..... $637.00
White Light 28V 2-1/4" Left Cutout ..... P/N 11-08781 ..... $637.00
White Light 28V2-1/4" Right Cutout ..... P/N 11-08782 ..... $637.00

LIGHTSAVER

The Lightsaver prevents this massive inrush allowing the filament to draw the rated current even at turn on with no change in typical light output performance. The filament life increases up to 10 times due to reducing the stress induced by inrush current. This is something the lamp manufacturers don't want you to know. After all they are in the business of manufacturing replacement lamps for your aircraft. Installation is simple.

Description	Part No.	Price
24 V 100W	11-07317	$39.75
24 V 150W	11-07318	$38.75

GLOW STRIPS - GLARE SHIELD LIGHTING

Superior Panel Technology has developed a brighter, more uniform and longer lasting Glare Shield lighting system. The 18" x 1" Glow Strip electroluminescent lamps provide a beautiful fluorescent-like aviation green or a white light output. The ultra-thin lamps (.065 including the adhesive backing) are very flexible and conform to the curves of the underside of the glare shield. The Glow Strips meet the FAA 23.853 burn test. Inverters ARE included with the kit. A solid state dimmer and battery back-up system is available and recommended (see part numbers below).

THE ONLY MANUFACTURER THAT OFFERS A LIFETIME WARRANTY AGAINST LAMP FAILURE.

Green

Single Glow Strip - 14V ..... P/N 11-00847 ..... $119.50
Two Glow Strips - 14V ..... P/N 11-00848 ..... $159.50
Two Glow Strips - 28V ..... P/N 11-00849 ..... $159.50

White

Single Glow Strip - 14V ..... P/N 11-10525 ..... $119.50
Two Glow Strips - 14V ..... P/N 11-10528 ..... $159.50
Two Glow Strips - 28V ..... P/N 11-10529 ..... $159.50

Accessories

Solid State Dimmer ..... P/N 11-00846 ..... $67.95
BattPack Battery Backup 14V - BP12V ..... P/N 11-06595 ..... $47.85
BattPack Battery Backup 28V - BP24V ..... P/N 11-06596 ..... $57.85

PILOT LIGHT PRO

Pilot Light Pro serves two main functions. It provides hands free panel lighting, as well as map lighting. using the latest in LED technologies it delivers 19 hours of continuous use. Pilot Light Pro is delivered with two AA Procell 1500 batteries installed, and may also optionally be installed using ships power. The internal circuit board will cut off the internal battery source once ships power is turned on. Loss of ships power will return the unit back to it's battery source, leaving you with light to work by in the advent of any problem i.e. loss of alternator.

Quick Installation: Installation is quick and easy if using battery only option, simply peel and stick using 3M power lock. The panel light is fully adjustable see our web site for installation instructions. Wiring to ship's power will require a Licensed A&P and a 337 Form, field approval may be required by local Fisdo.

Blue ..... P/N 11-07819 ..... $124.95
Red ..... P/N 11-07836 ..... $124.95
Green ..... P/N 11-07837 ..... $124.95

MAP LIGHT PRO

For those who lack mounting space for Pilot Light Pro, or simple just want Map Lights. Map Light Pro uses the same AA Procell 1500 batteries and yields 24 hours of continuous use.

P/N 11-07820 ..... $74.95

PURE DIGITAL SOLAR POWERED SMART LED LIGHT

High Motion Detection Performance: Built in next generation ePIR technology with outstanding detection performance.

Visual Illumination and Powerful Warning Enhancement: Super bright LED matrix enhances deterrent effect towards intruders and capture abilityof video/CCTV.

Emergency Function: Automatically illuminate in case of power outage.

Hybrid Power Source: Solar power, car lighter and standard AC power supply individuallyor combined charge green Li-polymer battery.

Intelligent Power Management (IPM): Exclusive IPM technology monitors battery capacity and power source status, controlsbattery charge and discharge process, and as well as generate the most efficient illuminating process with dusk to dawn capability.

Practicability: Highly practical for "Security & Safety Combining Programs" with multi-function and lighting back-up features.

In the box: 1. LED Matrix Light with ePIR 2. Solar Panel (10VDC / 3W) 3. Li-Poly Battery (7.4VDC / 1.0 AH) 4. Wall Mounting Plate with Hardware 5. Table Stand (Bonus) 6. Digital Power Supply 12VDC /1.0A (Bonus)

7 LED LightP/N 11-12882 ..... $108.35
36 LED Light ..... P/N 11-12880 ..... $63.65
60 LED Light ..... P/N 11-12881 ..... $81.85

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LED LANDING LIGHTS

TELEDYNE ALPHABEAM LED LANDING & TAXI LIGHT

FAA-PMA APPROVED!
Drop-in replacement for traditional incandescent lights. The Teledyne LED Alphabeam landing & taxi light will replace the following incandescent replacement lamps: 4313, 4509, 4591, 4594 and 4596. The ALPHABEAM™ LED Landing and Taxi Light, incorporating solid state technology, is designed for durability and long life. The ALPHABEAM™ offers an enhanced field of view compared with the incandescent models it replaces, and greatly improves visibility for night landing and taxi operations.

- No need to modify or alter existing incandes cent mounting
- Patented optical design draws less power, uses less LEDs than other LED based bulbs
- Significantly longer life than traditional incan descent bulbs
- Ruggedized for aircraft shock, vibration and temperature ranges
- Optimized LED's and Drive electronics for maximum life and brightness.
- No dimming nor loss of intensity across volt age range of 12 Vdc to 30 Vdc.
- Reduced maintenance costs
- Meets all environmental requirements of
- RTCA DO-160-E
- FAA/ PMA Approved.
- 3 Year Warranty

Specifications:

- Lamp Type: TIR Lens
- PAR36 - LED Technology
- Wattage: 45W • Voltage: 12 - 30VDC
- Bulb Diameter 4.5 inches
- Maximum Overall Length (MOL): 2.75 inches
- Projected life > 5,000 hours
- Moisture Resistant
- 3 Year Warranty

P/N 11-08459 ..... $275.00

ALPHABEAM II PAR 46 LED LANDING LIGHT

The ALPHABEAM® II LED Aviation Light is an LED Landing and Recognition light for business aviation. ALPHABEAM® II deploys state of the art Light Emitting Diode (LED) technology and is a 'drop-in' replacement for incandescent lamps, requiring no modification to the airplane. This is a major step in improving maintenance costs associated with exterior lighting and enhancing safety with improved lighting performance. The ALPHABEAM® II, will work for many years, as opposed to just months or even weeks with incandescent bulbs.
The ALPHABEAM® II has an extremely uniform beam pattern with more lumens in the beam compared with incandescent technology. With Teledyne's sophisticated multi-stage optical system, raw lumens from the LEDs are efficiently captured and redirected in the perfect beam pattern with very few lumens lost. Pilots have reported excellent performance, with the ALPHABEAM® II improving visual distance by as much as 1000 feet.
Performance Information: • Solid State LED technology • High brightness of 300,000 Candlepower in the beam • 70 Watt Power Consumption Typ. • Operates on 28 VDC Aircraft • Direct replacement for traditional PAR-46, 5.75" bulb sizes • Screw terminals are not polarity sensitive • Moisture Resistant • Notched heatsink for ease of installation • 3 Year Warranty.
Specifications: • 5000 Lumens in the beam • Bulb Size: PAR 46 (14.61 cm/5.75 in) • Aircraft Electrical Interface: Screw terminal • Operating Voltage: 28 VDC • Wattage: 70 Watts Typ • Field of View: 10° horizontal/10° vertical • Operating Temperature -55°C to +85°C • Storage Temperature: -55°C to +85°C • 2 Year Warranty

P/N 11-11742 ..... $895.00

AML Q-4509 LED PAR 36 LANDING / TAXI LIGHT

LED Q4509(Non-Polarity Applicable from 9V-36V), approximately 15,000 lab life hours, specialized structure for heat emission. Specialized structure for heat emission. High brightness (960LM) at low temperature: The temperature of lamp housing stays under 50°C even after continuous lighting for two hours. Non-polarity , applicable from 9V~36V. 15,000 lab life hours.

P/N 11-11513 ..... $82.95

HYBRID R-PLUS PAR 36 LAMP RETROFIT KIT 40W 3400 LUMEN LANDING

PAR 36 direct replacement. Using Rigid Industries Patented optics, with Cree or Osram LED's our PAR 36 replacements project light over 2x the distance of the nearest competitor. With versatile 9-36v DC input, patent pending heatsink and diffuser options the choice is clear. US made landing light.

40W 3400 Lumen Landing Light ..... P/N 11-11215 ..... $208.99
40W 3400 Lumen Taxi Light ..... P/N 11-11216 ..... $208.99
40W 1800 Lumen Landing Light ..... P/N 11-11217 ..... $142.49
40W 1800 Lumen Taxi Light ..... P/N 11-11218 ..... $142.49

LEADING EDGE LANDING LIGHT KIT

Kit consists of (2) GE #4509 12V, 100W sealed beam lamps, brackets for installation, switch, switch plate, 60 ft. of 2-conductor hookup wire & instructions. Size: 4.5"hx5.25"w x2.25"d w/ bulbs installed.

Complete Kit ..... P/N 11-08000 ..... $98.50
Replacement #4509 Bulbs ..... P/N 11-03796 ..... $12.85
Switch Plate only ..... P/N 11-14900 ..... $3.90

SR-M2 LANDING / TAXI NON TSO

• Landing/Taxi • 10x7x3 • 7 oz • 16 Watts 1.1 AMP Draw • 3 LEDs • 1050 Raw Lumens • 135 Lux at 10m
224 Beam Distance • 13500 Peak Beam Intensity. P/N 11-11222 ..... $142.49

SR-M SPOT LANDING LIGHT NON TSO

• Landing• 10x7x3• 7 oz• 10 Watts .63 AMP Draw• 2 LEDs• 700 Raw Lumens• 296 Lux at 10m• 298 Beam Distance• 29625 Peak Beam Intensity. P/N 11-11221 ..... $94.99

SPECTOR SR-Q2 DRIVING LANDING / TAXI

• Landing • 1 lb. • 34.5 Watts 2.5 AMP Draw • 6 LEDs • 3030 Raw Lumens • 178.2 Lux at 10m • 267 Beam Distance • .

P/N 11-11220 ..... $199.49

HYBRID SR-Q SPOT LANDING

• Landing • 1 lb. • 20 Watts 14.45 AMP Draw • 4 LEDs • 1360 Raw Lumens • 151.1 Lux at 10m • 246 Beam Distance • 15111 Peak Beam Intensity.

P/N 11-11219 ..... $142.49

SR 10 INCH SPOT LANDING LIGHT NON TSO

• Landing • 4x4x14 • 2.1lb • 35 Watts 2.4 AMP Draw • 10 LEDs • 3400 Raw Lumens • 676 Lux at 10m • 603.3 Beam Distance • 91000 Peak Beam Intensity.

P/N 11-11223 ..... $284.99

SR SPECTOR 10 INCH LANDING / TAXI LIGHT NON TSO

• Landing • 4x4x14 • 2.1lb • 53 Watts 3.7 AMP Draw • 15 LEDs • 5100 Raw Lumens • 345 Lux at 10m • 364.4 Beam Distance • 33200 Peak Beam Intensity.

P/N 11-11224 ..... $360.99

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PULSE LIGHT SYSTEMS - LANDING/TAXI LIGHTS

PULSAR LANDING LIGHT PULSE LIGHT SYSTEM

Pulses your landing or taxi light with a steady solid state electronic controller I/C. Filtered for quiet operation. Bulb life is not shortened, in fact bulb life is extended 10Xs longer; because the filaments never completely go out so there is no thermal shock turn-on. Even longer life w/ GE Halogen lights. Your panel landing or taxi light switch is turned OFF, Pulsar's separate On/Off switch turned ON, your light will begin to pulse. If you are landing at night, and want your lights on steady, you simply reach to that landing light switch (which has been off during the pulse mode) and turn it ON. Your landing light or taxi light will come on steady because Pulsar has not changed or altered your aircraft wiring. Owner installed in 30 minutes. Pulsar is approved for all 100 Watt GE lights. Weight: 3.5 oz.; Size: 3.25" length x 2" width x 1" height. The Standard Pulsar system uses a relay switch. The MOSFET Pulsar system (Metal oxide semi-field effect transistors) uses advanced P-channel technology which does not fail (no transistors or relays) and each pulse is brighter, than other older AvTek's Green-LED allows pilot with a Nose-Landing-Light to know from the cockpit if the light is: Pulsing, on steady or out. When ordering Pulsar, please indicate how many landing lights you wish to pulse and where they are in your aircraft, as well as your aircraft make and model. Dual Alternating Pulsing lights should never be side by side. Instead dual lights need to be located one in each wing. Two lights side by side can be pulsed together, or pulse just one light and leave the other light off. Now fully FAA/PMA Approved.

Description	Bulb	Part No.	Price
Pulsar for planes with one light on each wing, Recommended for frequent flyers, Mosfet Never needs repair, no transitors/relays	Quartz Q-4509 or Q-4591	11-04408	$388.95
Pulsar for planes with two lights on each wing, Recommended for frequent flyers, Mosfet Never needs repair, no transitors/relays	Quartz Q-4509 or Q-4591	11-04625	$394.00
AvTek Power MOSFET Pulsar Pulsing Light for 1 Light with speed select and built-in LED	Standard halogen Bulbs	11-05124	$339.95

PRECISE FLIGHT PULSELITE SYSTEM

Pulselite For General Aviation Aircraft. Solid state unit unit pulses two 125-watt channels or one 250-watt channel. The Pulselite System is designed to increase your aircraft's conspicuity. It pulses up to two 125-watt landing, taxi or recognition lights in patterns that create an illusion of exaggerated motion. Your aircraft becomes more visible for miles, even in fog or smog. P/N 11-17514 ..... $314.00

LANDING LIGHT AND FLASHER KIT

This Superior Panel Technology kit includes two bright 14V halogen bulbs, the SPT landing light flasher unit with wiring, toggle switch with attractive reverse engraved cover plate and the needed material to install the two lights in the wings' leading edge outboard bays. These halogen lamps are significantly brighter than both 50 and 100W incandescent bulbs. The solid state flashing system alternately flashes your landing lights and greatly extends the life of the halogen bulbs . The landing lights are easily aimed with the spring-loaded adjusting screws. The flashing unit is easy to install by following the comprehensive installation instructions. One 4PDT switch is added to the panel, giving you the option to switch from the flashing mode to the steady landing light mode. 14V. FOR EXPERIMENTAL AIRCRAFT ONLY. P/N 11-02051 ..... $239.95

SPT LANDING LIGHT FLASHER

Increase the visibility of your aircraft and give yourself that extra margin of safety. This solid state flashing system alternately flashes your landing lights so pilots in other aircraft and controllers in the tower will be able to see our aircraft much easier. The flasher unit extends the life of your landing lights since they run much cooler and its easy to install by following the comprehensive installation instructions. One toggle switch is added to the panel, giving you the option to switch the lights from the flashing mode to the landing mode. Choose the flashing unit based on the wattage of bulb used in the aircraft. For 14V systems only

FOR EXPERIMENTAL AIRCRAFT ONLY.

50W bulbs ..... P/N 11-02070 ..... $139.95

100W bulbs ..... P/N 11-02071 ..... $169.95

XEVISION LANDING & TAXI LIGHTS

XeVision™ super bright Xenon metal halide arc discharge landing & taxi lights for experimental aircraft. Light so bright and white you'd swear it's daylight; 500,00 candle power (3200 lumens) for our 35 Watt and more than 750,000 candle power (5400 lumens) for our 50 Watt systems – up to more than 8 times brighter than a standard 100 watt incandescent sealed beam. High HID efficiency means less than half the current draw and about ½ of the radiated heat of standard or Halogen lamps.

XeVision™ offers reliable HID pulsing capability based on the proprietary XeStrike™ series ballasts and the patented XePulse and new XePulse II™ pulsing module. All XeVision HID lighting systems are tested up to 100,000 feet altitude. XeVision systems are warranted up to 35,000 feet for continuous fail-safe operation.

XeVision offers retrofit kits for direct replacement or complete lighting system kits for new aircraft installation, different lamp shapes/sizes available. Many installation locations are possible now with a variety of lamp shapes and sizes, extremely small form factor, and lower lamp housing temperatures. They are especially suited for tight spaces in composite aircraft. XeVision reflectors are made of metal, not plastic. High Intensity Discharge (HID) lighting is the most significant breakthrough in aviation lighting since the development of modern sealed beam lamps.

XeVision offers highest quality at a very competitive price with a 5 year warranty and up to 3,000 hour typical lamp life. XeVision HID aviation lighting systems are DO-160E certified (35,50, and 75 watt models)

The XeStrike™ proprietary ballasts XV1D or XV4D are an integral part of all XeVision aircraft lighting systems with the following features: 12 or 24 VDC voltage input., Designed for pulsing or dimming of HID Xenon bulbs with the XePulse™ HID control module., Designed for 35 watt or 50 watt output, 75 watt for special applications only., Extremely low EMI/RFI in combination with third generation D1S bulbs with integrated igniter and double shielded silicone cables., Digital power control for pre-programmable start-up algorithm.

XeVision conversion kit & components	Key features & other information	
XeVision XV-36-SL - Standard landing light conversion kit . With XV1D or XV4D ballast and D1S bulb.	Beam angle 9º horizontal & vertical. PAR 36 size. Preferred Application - PAR 36 conversion, lamp diameter 4-5/16"	
XV-36-SL 35 Watt	P/N 11-01760	$468.95
XV-36-SL 50 Watt	P/N 11-05038	$521.00
XeVision XV-36-ST - Standard taxi light conversion kit . XV1D or XV4D ballast and D1S bulb.	Beam angle 55º horizontal & 10º vertical. Preferred Application - PAR 36 conversion, lamp diameter 4-5/16"	
XV-36-ST 35 Watt	P/N 11-01761	$468.95
XV-36-ST 50 Watt	P/N 11-05037	$516.00
XeVision XV-46-SL - Landing light conversion kit . XV1D or XV4D ballast and D1S bulb.	Beam angle 10º horizontal & vertical. Preferred Application - PAR 46 conversion, lamp diameter 5-11/16"	
XV-46-SL 35 Watt	P/N 11-01762	$468.95
XV-46-SL 50 Watt	P/N 11-05204	$516.00
XV-46-ST - Taxi light conversion kit. XeVision XV-46-ST taxi light conversion kit XV1D or XV4D ballast and D1S bulb.	Beam angle 50º horizontal & 8º vertical. Preferred Application - PAR 46 conversion, lamp diameter 5-11/16"	
XV-46-ST 35 Watt	P/N 11-01763	$468.95
XV-46-ST 50 Watt	P/N 11-05208	$516.00
XV-22 - Landing or taxi light for external use like gear struts. XV1D or XV4D ballast and D1S bulb.	15º horizontal & 10º vertical. Landing/taxi light conversion designations Preferred Application - Lamp fixture, rectangular, only 2.25" high 4.7" wide, and 4.2" deep.	
XV-22 35 Watt	P/N 11-01765	$467.95
XV-22 50 Watt	P/N 11-05209	$516.00
XV-23 - Landing or taxi light in wing area or externally as on a gear structure. With XV1D or XV4D ballast and D1S bulb.	20º horizontal & 8º vertical. Preferred Application - Lamp fixture, rectangular, only 2.25" high 4.7" wide, and 4.2" deep.	
XV-23 35 Watt	P/N 11-01764	$467.95
XV-23 50 Watt	P/N 11-05210	$516.00

FOR MORE MODELS PLEASE VISIT www.aircraftspruce.com

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REPLACEMENT LAMPS

UNIVERSAL REPLACEMENT LAMPS

Our long life incandescent and halogen lamps offer greater light output with increased life and reduced costs. All lamps feature heavy filament construction. Improved design and manufacturing techniques produce a lamp far superior in service with lower cost to the user and packaging provides maximum protection in shipping, handling and storage.

Universal	Grimes	Whelen	Gen. Electric	Cessna	Piper	Aeroflash	Our P/N	Price
12V125W				C17312-3		40-0028	040-0028	$21.60
24V150W	-	-	-	-	-	40-0003	040-0003	$22.00
U303			GE-303	303			11-01948	$3.10
U327			GE-327	327			11-01949	$0.65
U330			GE-330	330			11-01950	$0.53
U387			GE-387					
U1163	11631						11-01953	$15.70
U1512	1512			1512			11-01954	$16.75
U1524	1524			1524			11-01955	$17.75
U1687	1687						11-01956	$12.75
U1940	1940	WRM-1940	GE-1940	1940			11-01958	$11.55
U1982-SP	LP-1982SP		GE-1982SP		761-214		11-01960	$25.85
UA-7079B-12	1-7079B-12			A-7079B-12			11-01962	$21.85
UA-7079B-24	A-7079B-24			A-7079B-24			11-01963	$25.50
UA-7512-12	A-7512-12	W1290-14		A-7512-12			11-01964	$16.75
UA-7512-24	A-7512-24	W1290-28		A-7512-24	753-478		11-01965	$16.75

GALAXY LANDING LIGHT BULBS

Bulb #	Volts	Watts	Par #	Part No.	Price ea
4313	13	250	36	11-03524	$13.75
4509	13	100	36	11-02219	$7.95
4509Q	13	100	36	11-02220	$19.65
4522	13	250	46	11-03525	$16.85
4537	13	100	46	11-03526	$13.50
4553	28	250	46	11-03527	$16.75
4570	28	150	46	11-03528	$14.85
4580	28	450	46	11-03529	$21.85
4581	28	250	46	11-03530	$17.35
4587	28	250	36	11-03531	$14.95
4591	28	100	36	11-03532	$12.65
4594	28	100	36	11-03533	$8.95
4595	13	100	36	11-03534	$9.80
4596	28	250	36	11-03535	$15.75
4626	28	150	36	11-03536	$13.75

AML Q4509 SEALED BEAM

This sealed beam is 30 volt, 100 watts and is 4 1/2" in Diameter. Features: • 13 Volts • 100 Watts • 4 1/2" Diameter • 114 MM.

P/N 11-12157 ..... $12.95

GRAIN OF WHEAT INSTRUMENT BULBS

Replace burnt out Grain of Wheat Bulbs that are used to illuminate many instrument panels & instruments. These blue-white silicone booted lamps are filtered for illuminating integrally white-lighted aircraft instruments and panels as called out in MIL-L-27160. Available in 14/28V.

14V.....P/N 11-02052..... $5.75
28V.....P/N 11-02053..... $5.60

GRIMES LAMPS FOR EXTERIOR LIGHTS

Lamp No.	Volts	Application	Price
11-02601	12	Wing Tip Lights, Model E	$13.95
11-02603	24	Wing Tip Lights, Model E	$29.90
11-03661	12	Rot. Bcn G7740A, G8400, D7080A	$85.75
11-03739	24	Rot. Bcn G7740A, G8400, D7080A	$17.50

WHELEN LAMPS FOR EXTERIOR LIGHTS

Lamp P/N	Application	Price
11-03219	Wing Tip Strobe, Xenon Flash	$76.75
11-03697	Tail Strobe, Xenon Flash	$83.75
11-03225	Flash Tube for SA & A450	$71.85
11-03274	Flash & Socket for A500	$139.75
11-03216	Halogen Lamp, A500/A555/A600	$24.50
11-02602	Replacement bulb (14V)	$38.90
11-02604	Replacement bulb (28V)	$29.90
11-03897	(12V) Rotating Beacon	$13.75

NORMAN AIRCRAFT LAMPS

Since 1985 Norman Lamps, a U.S. based corporation, has been a valued supplier of certified aircraft lamps to the U.S. Defense Department (DOD), Naval Air Systems Command (NAV-AIR), and the Federal Aviation Administration (FAA). We are specialists in design, development, production and worldwide distribution of high quality, long life lighting products.

SEE WWW.AIRCRAFTSPRUCE.COM FOR A LIST OF PART NUMBERS AND PRICING.

RAPCO REPLACEMENT LAMPS

Rapco P/N	Our P/N	Price
WL1512	11-04358	$17.50
WL1524	11-04359	$17.50
WL330	11-10968	$0.38

Rapco P/N	Our P/N	Price
WL327	11-10946	$0.26
WL7079B-12	11-04364	$17.50
WL7079B-24	11-03739	$17.50
WL7512-12	11-04366	$16.80
WL7512-24	11-04367	$16.80

SEE RAPCO LAMP CROSS REFERENCE CHART AT WWW.AIRCRAFTSPRUCE.COM

WHELEN FLASH TUBE FOR GRIMES STROBES

This flash tube replaces Grimes P/Ns 30-0467, 30-1467, 30-1331, 30-1172-5, & 30-0515 series. Used on many Cessna aircraft.

W55-0221-1..... P/N 11-02780 .....$65.75

3 WATT LED NAVIGATION LIGHT BULBS

High-Output 3 Watt LED navigation light bulbs. LED retrofit for older Grimes navigation lights. Models: 1156, 1157 and 1076..... P/N 13-15810 .....$17.95

LED MIDGET FLANGED BI-POLAR LAMP T1-3/4 (5-28 VOLTS)

Replaces miniature lamps: # 328, 345, 350, 7335 (5/6V), 330, 382, 394 (12/14V), 327, 376, 387 (24/28V)

P/N 11-09629 .....$6.95

MINIATURE BAYONET BASED T3 1/4 LED LAMP

Replaces miniature lamp: # 6MB, 44, 47, 755, 1302, 1847 (5/6v); 12MB, 57, 386,756, 1445, 1815, 1889, 1893 (12/14v); 1437, 24MB (24V); 28MB, 313, 757, 1819, 1829 (28V); 48MB (48V); 60MB, 1835 (60V); 120MB, NE51H, 967 (120VAC); 130MB (130V) P/N 11-09628 .....$6.95

MARTEK AIRCRAFT 4509 LANDING LIGHT LAMP

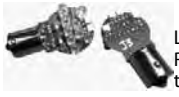
Lamp	Part No.	Price	Lamp	Part No.	Price
4509	11-08431	$7.95	Q4509	11-08432	$13.95
4537	11-08433	$12.85	4570	11-08434	$17.75
4580	11-08435	$24.75	4587	11-08436	$15.85
4591	11-08438	$14.50	4596	11-08439	$15.85
4626	11-08440	$12.95			

WHELEN REPLACEMENT REFLECTOR LAMPS

Whelen Replacement Reflector Lamps: W678, W1512, W1524, WA7079B12.

Description	Part No.	Price
W678 Reflector Lamp, 28V, 21W	11-10069	$31.80
W1512 Reflector Lamp, 12V, 21W	11-10067	$33.50
W1524 Reflector Lamp, 24V, 21W	11-10068	$32.60
WA7079B12 Reflector Lamp, 14V, 40W	11-10071	$37.50

REPLACEMENT PADDLE LAMPS



LED Replacement Navigational / Position Lamps in RED or GREEN, 14 or 28 volts, weighing in at less than .0285 lbs. drawing .12 amps, and packing a powerful 100+ Foot Candles of light. They are "Plug & Play" with no modification or alterations required and no flashing, just the continuous output required day or night. Visit aircraftspruce.com for a listing of direct replacements.

Description	Color	Voltage	Part No.	Price
P7512-14VR	Red	14	11-12241	$73.50
P7512-14VG	Green	14	11-12242	$73.50
P7512-28VG	Red	28	11-12243	$73.50
P7512-28VG	Green	28	11-12244	$73.50

EL

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

REPLACEMENT LAMPS

GE Lamp No.	Volts/Amps/Watts	WAMCO P/N	AML P/N	Price
43	2.5V 500mA	11-10886	11-12699	$0.50
44	6.3V 250mA	11-10974	11-12702	$0.50
53	14.4V 120mA	11-11039	11-12388	$0.56
55	7V 410mA	11-10978	11-12724	$0.52
67	13.5V 590mA	11-10979	11-12705	$0.52
81	6.5V 1020mA	11-10957	11-12712	$0.40
85	28V 40mA	11-10945	11-12707	$0.30
93	12.8V 1040mA	11-11040	11-12411	$0.84
94	12.8V 1040mA	11-11041	11-12412	$1.00
209	6.5V 1780mA	11-11062	11-12768	$1.12
301	28V 170mA	11-10990	11-12729	$0.62
302	28V 170mA	11-11055	11-12692	$1.04
303	28V 300mA	11-11042	11-12679	$0.94
304	28V 300mA	11-11043	11-12689	$0.94
305	28V 510mA	11-11008	11-12418	$0.66
306	28V 510mA	11-11044	11-12396	$1.10
307	28V 670mA	11-11024	11-12380	$0.94
308	28V 670mA	11-11013	11-12398	$0.86
309	28V 900mA	11-11045	11-12693	$0.94
311	28V 1290mA	11-11027	11-12683	$0.90
313	28V 170mA	11-10953	11-12377	$0.42
315	28V 900mA	11-11046	11-12756	$0.94
316	6V 700mA	11-10954	11-12694	$0.38
327	28V 40mA	11-10946	11-12662	$0.44
328	6V 200mA	11-10952	11-12382	$0.45
330	14V 80mA	11-10968	----	----
334	28V 40mA	11-10965	11-12387	$0.50
336	14V 80mA	11-10993	11-12690	$0.64
356	28V 170mA	11-10955	11-12401	$0.58
382	14V 80mA	11-10969	11-12402	$0.52
385	28V 40mA	11-10982	11-12726	$0.59
386	14V 80mA	11-10984	11-12417	$0.62
387	28V 40mA	11-10944	11-12383	$0.40
388	28V 40mA	11-10970	11-12416	$0.54
425	5V 500mA	11-10949	11-12710	$0.32
623	28V 370mA	11-10971	11-12722	$0.94
685	5V 60mA	11-11010	11-12738	$0.76
715	5V 115mA	11-10975	11-12626	$0.60
718	5V 115mA	11-11011	11-12739	$0.76
757	28V 80mA	11-10947	11-12709	$0.30
1251	28V 230mA	11-11063	11-12682	$1.14
1252	28V 230mA	11-11064	11-12770	$1.14
1308	28V 560mA	11-10991	11-12664	$1.34
1309	28V 520mA	11-11073	11-12842	$1.36
1315	2.5V 1000mA	11-11047	11-12757	$0.94
1317	6V 510mA	11-11069	11-12775	$1.20
1385	28V 720mA	11-11094	11-12678	$3.35
1495	28V 300mA	11-10976	11-12390	$0.62
1512	14V 21W	11-11116	----	----
1524	28V 21W	11-04359	----	----
1619	6.7V 1900mA	11-11054	11-12764	$1.02
1665	28V 800mA	11-11056	11-12467	$2.06
1680	6V 4100mA	11-11057	11-12765	$1.04
1691	28V 610mA	11-11058	11-12687	$0.30
1769	2.5V 200mA	11-10958	11-12713	$0.40
1815	14V 200mA	11-10985	11-12680	$0.60
1816	13V 330mA	11-10951	11-12663	$0.34
1819	28V 40mA	11-10966	11-12395	$0.94
1820	28V 100mA	11-10950	11-12378	$0.37
1864	28V 170mA	11-10972	11-12391	$0.44
1873	28V 200mA	11-11000	11-12695	$0.70
1982	28V 75W T-3	11-11115	----	----
1987	28V 150W	11-11128	11-12468	$35.60
2182	14V 80mA	11-10948	11-12687	$0.30
2232	28V 640mA	11-11080	11-12783	$1.56
2233	28V 770mA	11-11081	11-12784	$1.56
3011	28V 1290mA	11-11082	11-12686	$1.56
3071	5V 60mA	11-11051	11-12685	$1.00
3150	5V 60mA	11-11028	11-12629	$1.08
3335	28V 16mA	11-11061	11-12384	$1.30
4009	28V 40mA	11-11029	11-12748	$0.90
6180	5V 60mA	11-10973	11-12625	$0.94
6832	5V 60mA	11-11016	11-12393	$0.94
6838	28V 24mA	11-11025	11-12386	$0.94
6839	28V 24mA	11-11001		
7009	28V 20mA	11-11078	11-12385	$1.80
7132	5V 75mA	11-11030	11-12749	$0.90
7152	5V 115mA	11-10980	11-12389	$0.76
7153	5V 115mA	11-11009	11-12691	$0.72
7265	5V 60mA	11-11017	11-12628	$1.02
7267	5V 115mA	11-11049	11-12760	$0.96
7327	28V 40mA	11-10986	11-12419	$1.08
7382	14V 80mA	11-10987	11-12463	$0.80
7387	28V 40mA	11-10956	11-12624	$0.58
7715	5V 115mA	11-11067	11-12773	$1.18
7839	28V 24mA	11-11018	11-12784	$1.56
8552	28V 20mA	11-11095	11-12795	$4.35
8623	28V 40mA	11-11088	11-12789	$1.90
8628	6V 200mA	11-11019	11-12743	$0.80

GE Lamp No.	Volts/Amps/Watts	WAMCO P/N	AML P/N	Price
8918	14V 100mA	11-10998	11-12706	$0.66
11631	6.2V 40W	11-11121	11-12847	$14.95
16870	6.2V 40W	11-11126	11-12814	$20.55
1044-1	28V 40mA	11-11070	11-12776	$1.20
1044-06	28V 40mA	11-11065	11-12771	$1.16
1044-08	28V 40mA	11-11068	11-12774	$1.18
1098BPEG- PL	10V 27mA	11-11020	11-12744	$0.80
120MB	120V 25mA	11-11071	11-12777	$1.30
1280-01	28V 24mA	11-11075	11-12779	$1.38
1280-08	28V 24mA	11-11076	11-12780	$1.38
1280-481	28V 24mA	11-11052	11-12762	$1.00
1280-482	28V 24mA	11-11053	11-12763	$1.00
1309IF	28V 520mA	11-11083	11-12785	$1.56
1495X	28V 300mA	11-10999	11-12708	$0.66
1665AF (1665IF)	28V 800mA	11-11084	11-12698	$1.56
1970X	28V 100W	11-11122	11-12813	$17.90
1978X	10V 100W	11-11114	11-12812	$15.90
1982SP	28V 75W	11-11118	11-12846	$14.60
2059X	12V 10W	11-11108	11-12799	$7.50
2232SB	28V 640mA	11-11096	11-12796	$3.85
"305AF (WL-305IF)"	28V 510mA	11-11048	11-12758	$0.94
3071AS15	5V 60mA	11-11077	11-12781	$1.44
3071BPE	5V 60mA	11-11031	11-12750	$0.90
3071BPEG- PL	5V 60mA	11-11002	11-12621	$0.78
307IF	28V 670mA	11-11060	11-12697	$1.07
327AS15	28V 40mA	11-11003	11-12735	$0.70
376AS15	28V 60mA	11-10988	11-12627	$1.58
382AS10	14V 80mA	11-11014	11-12741	$0.78
385AS15	28V 40mA	11-11026	11-12747	$0.88
387AS15	28V 40mA	11-10981	11-12725	$0.56
387BPGPL	28V 40mA	11-11050	11-12761	$0.98
4009BPE	28V 40mA	11-11032	11-12751	$1.07
4009BPEG- PL	28V 40mA	11-11012	11-12740	$0.76
565-101	28V 24mA	11-11111	11-12803	$8.00
6034BPGPL	28V 24mA	11-11072	11-12778	$1.30
6180AS15	5V 60mA	11-11004	11-12736	$0.70
6832AS15	5V 60mA	11-10994	11-12684	$0.64
6833AS15	5V 60mA	11-10983	11-12727	$0.58
6838-1001	28V 24mA	11-11074	11-12466	$2.40
6838AS15	28V 24mA	11-11033	11-12752	$0.90
6839AS15	28V 24mA	11-11034	11-12754	$0.90
6839BPE	28V 24mA	11-11005	11-12413	$1.08
683AS15	5V 60mA	11-10992	11-12730	$0.62
685AS15	5V 60mA	11-11066	11-12772	$1.16
7009AS15	28V 20mA	11-11085	11-12786	$1.66
7132AS15	5V 75mA	11-11021	11-12703	$0.80
7132AS15T- PL	5V 75mA	11-11022	11-12745	$0.80
713AS15	5V 75mA	11-10977	11-12723	$0.50
7152AS15	5V 115mA	11-11035	11-12704	$0.90
7153AS15	5V 115mA	11-11036	11-12755	$0.90
7153SAS15	5V 115mA	11-11059	11-12766	$1.04
715AS15	5V 115mA	11-11037	11-12696	$0.90
718AS15	5V 115mA	11-11038	11-12701	$0.90
737AS15	28V 50mA	11-11079	11-12782	$1.50
7715AS15	5V 115mA	11-11015	11-12742	$0.78
8GH003912-06	6V 12W	11-11107	11-12798	$7.00
8GH004554-28	28V 11.5W	11-11109	11-12802	$7.80
8GH005448-28	28V 11.5W	11-11110	11-12848	$7.80
"8GH005597- 12"	12V 25W	11-11113	11-12810	$10.00
"8GH005678- 06"	6V 10W	11-11106	11-12797	$6.60
"8GH007429- 28"	28V 11.5W	11-11112	11-12843	$11.50
A1G	65VAC 90VDC Max	11-11086	11-12787	$1.70
A1H	95VAC 135VDC Max	11-11089	11-12790	$1.90
A1H-R18	95VAC 135VDC Max	11-11090	11-12791	$2.10
A3C	95VAC 135VDC Max	11-10989	11-12728	$0.60
A-4174-12	14V 40W	11-11127	11-12815	$19.50
A-4174-24	28V 40W	11-11123	11-12845	$14.95
A-4174-24X	28V 40W	11-11130	11-12816	$40.95
A-7512-12	14V 26W	11-04366	----	----
A-7512-24	28V 26W	11-04367	----	----
A-7079B-12	14V 40W	11-11124	----	----
A-7079B-24	28V 40W	11-11125	----	----
A-7796A-24	28V 14W/40W	11-11129	11-12844	$27.50
A9A	65VAC 90VDC Max	11-10959	11-12715	$40.00
B1A	65VAC 90VDC Max	11-11006	11-12737	$0.70
B2A	95VAC 135VDC Max	11-11023	11-12746	$0.80
C7A	65VAC 90VDC Max	11-11091	11-12792	$2.10
C9A	95VAC 135VDC Max	11-11087	11-12788	$1.70
DT1673A	5V 21mA	11-11093	11-12794	$2.50
G9B	95VAC 135VDC Max	11-11092	11-12793	$2.20
KPR102	2.4V 700mA	11-10995	11-12731	$0.64
KPR103	3.6V 700mA	11-10996	11-12732	$0.64
KPR104	2.2V 470mA	11-10997	11-12734	$0.64
PR12	5.95V 500mA	11-10960	11-12716	$0.40
PR18	7.2V 550mA	11-10967	11-12721	$0.42
PR2	2.38V 500mA	11-10961	11-12717	$1.20
PR3	3.57V 500mA	11-10962	11-12718	$0.40
PR6	2.47V 300mA	11-10963	11-12719	$0.40
PR7	3.7V 300mA	11-10964	11-12720	$0.40

EL

GE REPLACEMENT LAMPS

GE MINIATURE LAMPS FOR COCKPIT/WING/TAIL LIGHTS

Lamp No.	Primary/Application	Volts	Amps/Watts	Part No.	Price
B-31/2 Bulb 7/16" (11mm) Diameter					
GE-PR3	Flashlight-3D Cells	3.57	.50A	11-03071	$0.59
GE-PR6	Flashlight-2D Cells	2.47	.30A	11-03070	$0.54
GE-PR7	Flashlight-3D Cells	3.70	.30A	11-03072	$0.74
GE-PR12	Flashlight-5D Cells	5.95	.50A	11-03073	$0.58
GE-PR18	Flashlight-6D Cells	7.20	.55A	11-03074	$0.78
B-6 Bulb 3/4" (19mm) Diameter					
GE-1308	Reading Light	28	.56A	11-03076	$2.95
GE-1309	Aircraft Interior	28	.52A	11-04162	$3.85
GE-1317	Emergency Landing	6	.51A	11-03075	$2.95
G-31/2 Bulb 7/16" (11mm) Diameter					
GE-356	Map Light	28	17A	11-04184	$3.35
GE-1450	Indicator	24	.035A	11-03077	$7.25
G-41/2 Bulb 9/16" (14mm) Diameter					
GE-55	Panel Indicator	7	2 CP	11-04194	$1.49
GE-57	Panel Indicator	14	2 CP	11-04195	$0.88
GE-456	Instrument	28	.17A	11-03080	$1.15
G-5 Bulb 5/8" (16mm) Diameter					
GE-302	Aircraft	28	.17A	11-03038	$4.15
GE-1315	Emergency Lighting	2.5	1.0A	11-03037	$3.35
G-6 Bulb 3/4" (19mm) Diameter					
GE-81	Wing/Tail	6.5	1.02A	11-04196	$2.90
GE-303	Cockpit Light	28	.30A	11-04172	$3.45
GE-304	Cockpit Light	28	.30A	11-04173	$3.20
GE-623	Aircraft - 2 Filaments	28	.37A	11-03041	$3.35
GE-1251	Aircraft - 2 Filaments	28	.23A	11-03039	$0.93
GE-1252	Aircraft - 2 Filaments	28	.23A	11-03040	$3.95
S-8 Bulb 1" (25mm) Diameter					
GE-305	Wing/Tail	28	.51A	11-04174	$3.90
GE-305AF	Wing/Tail-All Frosted	28	.51A	11-03027	$3.10
GE-306	Wing/Tail	28	.51A	11-04175	$4.95
GE-307	Wing/Tail	28	.67A	11-04176	$3.35
GE-308	Wing/Tail	28	.67A	11-04177	$1.29
GE-315	Wing/Tail	28	.90A	11-04180	$3.95
GE-1619	Instrument	6	4.1A	11-03025	$3.85
GE-1665	Aircraft	28	.80A	11-03034	$3.35
AML-1665AF	Aircraft	28	.80A	11-10813	$2.35
GE-1680	Wing/Tail	6	4.1A	11-04165	$3.40
GE-1691	Aircraft - 2 Filaments	28	.61A	11-03029	$8.25
GE-1692	Marine - 2 Filaments	28	.61A	11-03030	$8.75
GE-1777	Aircraft Tail Light	12.8	1.52A	11-04014	$6.95
GE-2232	Spiral Lead	28	6.43A	11-03031	$1.95
GE-2233	Spiral Lead	28	.766A	11-03033	$2.40
S-11 Bulb 1-3/8" (35mm) Diameter					
GE-309	Aircraft	28	.90A	11-03036	$4.95
GE-311	Wing/Tail	28	1.29A	11-04178	$3.95
T-1 Bulb 1/8" (3mm) Diameter					
GE-685	Aircraft	5.0	.06A	11-03042	$1.35
GE-718AS15	Aircraft - 1 Filament	5.0	.115A	11-03043	$1.63
T-13/4 Bulb 7/32" (5.5mm) Diameter					
GE-85	Indicator	28	.04A	11-03044	$2.30
GE-327	Eyebrow/Post Lt.	28	.04A	11-04015	$0.88

Lamp No.	Primary/Application	Volts	Amps/Watts	Part No.	Price
GE-328	Panel Indicator	6	.20A	11-04181	$1.40
GE-330	Eyebrow/Post Lt.	14	.08A	11-04016	$1.25
GE-334	Panel Indicator	28	.04A	11-04182	$1.32
GE-387	Panel Indicator	28	.04A	11-04185	$0.98
GE-388	Panel Indicator	28	.04A	11-03045	$1.19
T-21/4 Bulb 9/32" (7.5mm) Diameter					
GE-786	Emergency-Halogen	6	2.0A	11-03046	$7.60
T-3 Bulb 3/8" (9.5mm) Diameter					
GE-1978X	Navigation	10	100W	11-03047	$22.30
GE-1982	Navigation	28	75W	11-03048	$19.95
T-31/4 Bulb 13/32" (10mm) Diameter					
GE-43	Indicator	2.5	.50A	11-03049	$1.65
GE-44	Panel Indicator	6.3	.25A	11-04186	$0.97
GE-316	Instrument	6	.70A	11-03050	$4.35
GE-400	Aircraft	28	.10A	11-03054	$1.93
GE-757	Indicator	28	.08A	11-03053	$1.46
GE-1813	Wing/Tail-All Frosted	14.4	.10A	11-04166	$1.85
GE-1815	Indicator	14.0	.20A	11-03052	$1.37
GE-1816	Map/Dome Light	13	.33A	11-04167	$1.43
GE-1818	Panel Indicator	24	.17A	11-04168	$2.60
GE-1819	Panel Indicator	28	.04A	11-04169	$1.58
GE-1820	Panel Indicator	28	.10A	11-04170	$1.86
GE-1873	Aircraft	28	.17A	11-03056	$5.60
GE-464	Aircraft	28	.17A	11-03055	$1.55
GE-1864	Panel Indicator	28	.17A	11-04171	$1.66
T-4 Bulb 1/2" (13mm) Diameter					
GE-1986	Navigation	28	250W	11-03058	$69.75
GE-1987	Navigation	28	150W	11-03057	$31.75
T-5 Bulb 5/8" (16mm) Diameter Electric Discharge Lamps					
GE-1978X	Navigation	10	100W	11-03047	$22.30
GE-1982	Navigation	28	75W	11-03048	$19.95
GE-5004CW	Cool White	A.C.	4W	11-03060	$7.35
GE-5004WW	Warm White	A.C.	4W	11-03061	$7.35
GE-5008CW	Cool White	A.C.	8W	11-03063	$7.05
GE-5008WW	Warm White	A.C.	8W	11-03064	$7.05
GE-5013CW	Cool White	A.C.	13W	11-03066	$6.00
GE-5013WW	Warm White	A.C.	13W	11-03067	$7.95
GE-5104WW	Warm White	A.C.	4W	11-03062	$5.35
GE-5108WW	Warm White	A.C.	8W	11-03065	$6.85
GE-5113WW	Warm White	A.C.	13W	11-03068	$6.90
T-7 Bulb 7/8" (20mm) Diameter					
GE-1940	Rotating Beacon	14	3.57A	11-03794	$13.75
Cockpit & Wing/Tail Lights					
GE-53	Panel Indicator	14.4	1 CP	11-04193	$0.99
GE-67	Clock, tail, cargo area	13.5	8	11-01394	$3.55
GE-89	Cockpit Light	13	6 CP	11-04197	$1.35
GE-93	Wing/Tail	12.8	15 CP	11-04199	$2.60
GE-94	Wing/Tail	12.8	15 CP	11-04200	$3.45
GE-313	Cockpit Light	28	.17A	11-04179	$1.85
GE-336	Post Light	14	.08A	11-04183	$1.10
GE-356	Map Light	28	17A	11-04184	$3.35
GE-1073	Illuminator Lights	12.8	1.80A	11-04012	$2.60
GE-1141	Wing/Tail	12.8	1.44A	11-04161	$1.25
GE-1495	Panel Indicator	28	.30A	11-04164	$3.15

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GE SEALED BEAM LAMPS FOR LANDING & TAXI LIGHTS

Lamp Diameter	Lamp No.	PAR	Design Volts	Watts	Part No.	Price
4 1/2" (114mm)	GEH-7604	36	12.8	50	11-04023	$16.50
4 1/2" (114mm)	GE-4509	36	13	100	11-03796	$12.85
4 1/2" (114mm)	GE-4700	36	13	100	11-03807	$60.25
4 1/2" (114mm)	GE-4595	36	13	100	11-03081	$24.90
5 3/4" (146mm)	GE-4522	46	13	250	11-03797	$34.85
4 1/2" (114mm)	GE-Q4631	36	13	250	11-03083	$68.90
4 1/2" (114mm)	GE-4313	36	13	250	11-03795	$29.75
4 1/2" (114mm)	GE-4537	36	13	100	11-03798	$29.75
4 1/2" (114mm)	GE-4502	36	28	50	11-04187	$18.50
8" (203mm)	GE-4552	64	28	250	11-04189	$94.50
8" (203mm)	GE-4557	64	28	400	11-04190	$64.75
8" (203mm)	GE-4559	64	28	600	11-04017	$34.85
4 1/2" (114mm)	GE-4627	36	28	100	11-03088	$53.85
4 1/2" (114mm)	GE-4626	36	28	150	11-04191	$30.50
4 1/2" (114mm)	GE-4589	36	28	50	11-03084	$18.95
4 1/2" (114mm)	GE-4593	36	28	50	11-03085	$23.85
4 1/2" (114mm)	GE-4591	36	28	100	11-03802	$39.75
4 1/2" (114mm)	GE-4594	36	28	100	11-03803	$17.75

Lamp Diameter	Lamp No.	PAR	Design Volts	Watts	Part No.	Price
4 1/2" (114mm)	GE-4713	36	28	150	11-03089	$135.75
4 1/2" (114mm)	GE-4587	36	28	250	11-03090	$26.50
5 3/4" (146mm)	GE-4551	46	28	250	11-03093	$19.65
5 3/4" (146mm)	GE-4553	46	28	250	11-03799	$29.50
5 3/4" (146mm)	GE-4554	46	28	450	11-03095	$95.00
5 3/4" (146mm)	GE-4571	46	28	150	11-03092	$33.75
5 3/4" (146mm)	GE-4581	46	28	450	11-03097	$41.75
5 3/4" (146mm)	GE-Q4681	46	28	450	11-03101	$89.90
5 3/4" (146mm)	GE-4582	46	28	450	11-03098	$59.75
5 3/4" (146mm)	GE-Q4566	46	28	450	11-03096	$94.75
5 3/4" (146mm)	GE-Q4597	46	28	450	11-03099	$176.75
7" (178mm)	GE-4541	56	28	450	11-03102	$46.75
8" (203mm)	GE-4559X	64	28	600	11-03104	$46.50
8" (203mm)	GE-Q4559	64	28	600	11-03103	$56.75
4 1/2" (114mm)	GE-4505	36	28	50	11-04188	$19.90
5 3/4" (146mm)	GE-4580	46	28	450	11-03901	$41.85
5 3/4" (146mm)	GE-4570	46	28	150	11-03801	$14.95

AIRCRAFT SPRUCE WEST
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PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

GARMIN PORTABLE GPS

GARMIN AERA 500 SERIES GPS

The Garmin aera™ lineup of touchscreen GPS portables. Featuring crisp 4.3-inch QVGA wide-format displays with menu-driven tap-and-drag user interface. Transition seamlessly from runways to roadways with the best in Aviation and Automotive moving-map navigation. Leveraging Garmin's industry-leading expertise in integrated systems design, the aera series offers a full range of smart, easy-to-use guidance solutions for today's pilot/motorist. In your aircraft, the aera's detailed Sectional chart-style shaded mapping and extensive terrain and aviation databases (including private airports and heliports) help you visualize your flight path in relation to nearby navaids, terrain, SUAs, obstructions, and so on. For added safety, a database-driven terrain advisory feature offers TAWS-like color coding and pop-up alerts when possible obstructions or ground proximity conflicts loom ahead. Garmin's patented Panel Page affords a reassuring backup to your panel-mounted instruments with its exclusive display of GPS-derived HSI, altimeter, groundspeed, vertical speed and turn indication. Plus, on the aera 550 and 560 models, preloaded Garmin SafeTaxi® charts provide detailed taxiway diagrams and position information for over 950 U.S. airports – while an included AOPA Airport Directory database gives you detailed listings, phone numbers, facilities and fuel location information on over 7,400 U.S. landing sites, as well as airports of entry for Canada, Mexico and the Caribbean. Other premium aera 550/560 features include high-resolution 9 arc-second terrain/obstacle detail, database-derived IFR airways map mode, and more. Further, TIS traffic alerting is supported by all four aera models (through an interface with your aircraft's Garmin GTX 330 Mode S transponder or other compatible third-party traffic devices). Weather-watchers take note: For continuous inflight weather awareness, both the aera 510 and 560 models provide access – via Garmin's GXM 40 Smart Antenna/Receiver – to the latest in XM WX™ Satellite Weather capabilitiesYou can even access select XM weather products in auto mode as well. Plus, the simplicity of a single integrated cabling solution for power, music and datalink weather antenna options makes for easy, clutter-free aera connectivity in your choice of cockpits. Flying or driving, you're covered: When your aircraft lands, your aera journey continues with full automotive GPS navigation and preloaded City Navigator® NT street map coverage for North America or Europe. Operating much like Garmin's popular nüvi line of touchscreen auto navigators. Other premium features available on the aera 550 and 560 models include lane assist with junction view, speed limit notification, Navteq traffic alerts2, and more. Skyways or highways, from driveway to destination: When you travel with Garmin's aera series, you've got a world of navigation capability at your fingertips. And with four great models to choose from, it's easy to find the aera portable solution that perfectly matches your needs and budget.

Description	Part No.	Price
aera 500 The most affordable aera touchscreen unit, the 500 model features a crisp 4.3-inch QVGA wide-format screen and preloaded graphical mapping. Go from runways to roadways with preloaded City Navigator® NT street mapping.	11-08044 Americas	$599.00
	11-08049 Pacific	$599.00
	11-08048 Atlantic	$599.00
aera 510 adds support for NEXRAD imaging and other great XM WX™ satellite weather capabilities. It also comes with detailed terrain mapping, Garmin's patented Panel page, preloaded street maps and touchscreen control.	11-08045 Americas	$899.00
aera 550 With higher-resolution 9 arc-second terrain graphics, offers detailed aviation and automotive mapping with preloaded SafeTaxi® charts and AOPA Airport Directory. Also includes built-in support for premium auto navigation and traffic features.	11-08046 Americas	$999.00
	11-08052 Pacific	$999.00
	11-08051 Atlantic	$999.00
aera 560 Garmin's premiere fly/drive touchscreen portable, with support for XM WX™ satellite weather capabilities. It also comes with preloaded SafeTaxi® charts, AOPA Airport Directory, City Navigator® NT street mapping, and support for premium auto features.	11-08047 Americas	$1,299.00

Accessories for the 500, 510, 550, and 560	Part No.	Price
Garmin aera Power Data Cable	11-08088	$63.95
Garmin aera Lithium-Ion Battery	11-08090	$32.95
Garmin aera Battery Pack Combo with Charger	11-08091	$59.95
Garmin Portable Friction Mount	11-08118	$27.75
Garmin aera Yoke Mount	11-08085	$48.95
Garmin aera Cigarette Lighter Audio Cable	11-08086	$48.95
Garmin 496 696 aera USB Cable	11-07503	$13.95
Garmin Vehicle Power Cable	11-08120	$22.95
Garmin Carring Case	11-08121	$23.95
Garmin GA 25MCX Antenna	11-07281	$24.75
Garmin GA 27C Remote Antenna	11-00052	$73.50
Garmin GA 27 8FT Extension Cable	11-07283	$29.85
Garmin GA 26C Suction Cup Mount	11-02685	$13.90
Garmin Dashboard Disk, 2-pack	11-08123	$14.50
Navishield Garmin aera Series	11-08217	$14.95
Airgizmo Garmin aera Dock	11-08321	$116.75
Glare Wizard for Garmin aera	11-08392	$34.75
Garmin aera Automotive Mounting Kit	10-05521	$27.95

Accessories for the 510 and 560 Only	Part No.	Price
Garmin GXM 40 XM Antenna 696	11-07058	$234.95
Garmin aera Cigarette Lighter Audio/USB	11-08087	$63.75

Accessories for the 550 and 560 Only	Part No.	Price
Garmin GTM 20 Traffic Cable	11-08124	$111.95

GARMIN AERA 795/796 GPS

Revolutionary new 3D Vision technology shows a virtual 3-D behind-the-aircraft perspective of surrounding terrain derived from GPS and the onboard terrain database – a feature previously only available in our panel-mount avionics. Simply slide your finger across the touchscreen to rotate the view and show land and water features, obstacles, runways and airport signposts in relative proximity to the aircraft. Internal GPS provides position updates at a rate of 5 times per second (5 Hz). aera 796's bright 7" diagonal high-definition sunlight-readable display makes detailed mapping easy to see in any lighting conditions and works in both portrait and landscape mode. The physical design has been optimized to fit on the yoke or for use as a knee-mounted device. There are only 4 touch keys on the bezel representing "Back", "Menu", "Direct-to" and "Nearest" for quick navigation to the most frequent used functions. All other functions are quickly accessed through Intuitive onscreen icons with labels. This unique touchscreen interface even allows you to quickly pan across the map screen and pinch to zoom. Fullfills the role of either a Class I or Class II electronic flight bag, greatly reducing the need to rely on paper charts in the cockpit. Initial georeferenced VFR sectional and IRF enroute charts come preloaded that show your aircraft's position overlaid directly on the relevant chart. When in IFR map mode, the 796 can display victor airways, jet routes, minimum enroute altitudes and leg distance, much like what's found on traditional enroute charts. A "scratch pad" feature also allows you to quickly jot down clearances and other pertinent notes while in route, while a checklist viewer allows you to create customized and interactive electronic checklists. Also allows for a top-down view of your entire route. To help you navigate around unfamiliar airports, SafeTaxi® provides detailed taxiway diagrams and position information for over 1,000 U.S. airports, while a private airport and heliport database greatly expands your emergency "nearest" options. FBO, ground transportation, lodging and other facility information for most U.S. airports are also available through preloaded AOPA Airport Directory Data; international pilots may choose to opt for global AC-U-KWIK airport directory data instead. A GXM 40 smart antenna is included with aera 796, giving you access to high-resolution weather and audio entertainment right in the cockpit (XM subscription required). XM WX™ Satellite Weather includes next generation radar (NEXRAD), aviation routine weather reports (METARs), terminal aerodrome forecasts (TAFs), temporary flight restrictions (TFRs), lightning, winds aloft and more for the U.S. and Canada. In addition, the 796 can receive PIREPs, turbulence forecasts, icing forecasts and more. The weather data can be laid directly over the unit's navigation and topographic map databases. Plus, with 170+ channels of digital music, news and programming through your aircraft headset or cabin audio system, you'll stay informed and entertained. Allows for simultaneous connectivity with other hardware. With an optional Garmin GTX 330 Mode S Transponder Interface, you can access Traffic Information Service (TIS) alerts, where available, right on the device while also sending frequencies to a Garmin SL30/40 radio or relaying position reports to other devices.

aera 795 Americas.....P/N 11-10034 ..... $1,699.00
aera 795 Atlantic.....P/N 11-10035 ..... $1,699.00
aera 795 Pacific.....P/N 11-10036 ..... $1,699.00

aera 796 Americas without XM Weather .....P/N 11-12654 ..... $1,699.00
aera 796 Americas GPS With GMX 40 Weather Antenna
P/N 11-12869 ..... $1,933.95

Accessories	Part No.	Price
795/796 Power Data Cable	11-10044	$59.95
795/796 AC Power Home Dock	11-10045	$139.50
795/796 Carry Case	11-10046	$46.95

Accessories	Part No.	Price
795/796 Battery Pack	11-10047	$187.95
795/796 Lap Mount	11-10048	$46.95
Touchscreen Clean Cloth	11-10049	$4.75

GARMIN GMX 42 SIRIUS XM RECEIVER/GMX 40

Check the weather and listen to satellite radio with this receiver and a subscription to SiriusXM™ services. To set up, simply position the antenna and then connect it to your device. At this time, the GXM 42 is only compatible with the aera™ 796.

GMX 42 .....P/N 10-05525.....$599.00
GMX 40 .....P/N 11-07058.....$234.95

AV

GARMIN PORTABLE GPS

GARMIN GPSMAP 696 & 695

See the Big Picture - The GPSMAP 696's bright 7-inch diagonal high-definition sunlight-readable display makes detailed mapping easy to see day or night — you can even view an entire approach plate on the large-format display. For easy operation, the bezel around the screen includes soft keys and a joystick control. And with a fast 5 Hz GPS update rate, the 696 renders graphics and presents flight data smoothly and continuously.

No Charts? No Problem. - With the addition of Garmin FliteCharts®[1] and IFR map mode, the GPSMAP 696 has Class 1/Class 2 electronic flight bag (EFB) capability, reducing the use of paper charts in the cockpit. With FliteCharts, you can quickly find and view all U.S. NACO departure procedures (DP), standard terminal arrival routes (STARs), approach charts and airport diagrams. If the current approach is known, GPSMAP 696 automatically selects the correct chart based on the flight plan. When in IFR map mode, the 696 can display victor airways, jet routes, minimum enroute altitude and leg distance, much like found on paper enroute charts.

Add Weather and Radio - The GPSMAP 696 includes a GXM 40 smart antenna, which gives you access to high-resolution weather and audio entertainment right in the cockpit (XM subscription required). XM WX™ Satellite Weather includes next generation radar (NEXRAD), aviation routine weather reports (METARs), terminal aerodrome forecasts (TAFs), temporary flight restrictions (TFRs), lightning, winds aloft and more for the U.S. and Canada. In addition, the 696 can receive PIREPs, turbulence forecast and icing forecast information. The weather data can be laid directly over the unit's navigation and topographic map databases. With 170+ channels of digital music, news and programming through your aircraft headset or cabin audio system, you'll stay informed and entertained.

GPSMAP 695 With features that focus on aviation-only navigation and mapping, GPSMAP 695 is Garmin's ultimate portable MFD. Similar to the 696, the GPSMAP 695 comes with a large screen and detailed electronic charts — minus XM compatibility — at a price you'll love.

Garmin GPSMAP 696 Americas ..... P/N 11-07022 ..... $1,799.00
Garmin GPSMAP 695 Americas ..... P/N 11-07023 ..... $1,499.00

GPSMAP 696 & 695 ACCESSORIES

Description	Part No.	Price
Power Data Cable	11-07056	$27.95
Carrying Case	11-07049	$49.95
Lap Mount	11-07050	$49.95
Battery Pack	11-07051	$186.00
Yoke Mount	11-07057	$74.95
US AC Adapter	11-07052	$49.95
Intl. AC Adapter	11-07053	$49.95
12/24V Cig. Plug	11-07054	$29.95
Protective Cover	11-07055	$19.95
GMX 40 XM Antenna (696)	11-07058	$234.95
GXM 40 Flange Mount	11-07059	$3.95
Mag Mount GXM Antenna	11-07060	$14.75
MCX to BNC Antenna Cable	11-90210	$18.85
696 Audio Jack	11-07783	$13.95
GA25MCX Antenna	11-07281	$24.75
Airgizmo 695/696 Panel Dock	11-09439	$178.95
Glare wizard for 695-696	11-08027	$36.75

GPSMAP 296, 396, 495, & 496 ACCESSORIES

Description	Part No.	Price
Garmin Power Data Cable	11-02694	$21.95
Garmin Battery Pack	11-04856	$42.95
City Navigator Europe	11-01192	$149.95
Auto Mount	11-03900	$28.50
Yoke Mount	11-02691	$51.75
Garmin GPS Handheld Antenna	11-02681	$44.95
GA 26C Remote GPS antenna	11-00051	$74.50
GA 56 Low Profile External Antenna	11-18756	$294.00
GMX 30 Flange Mount with screws	11-06267	$7.25
GMX 40 Replacement Antenna for GMX series only	11-07058	$234.95
Cigarette Adapter with speaker (car only)	11-02693	$33.85
Cigarette Adapter	11-02696	$17.85
AC Power Adapter	11-02676	$32.85
USB Cable	11-02692	$12.95
Carrying Case	11-18863	$24.75
GPS Protective Cover	11-02701	$12.95
Garmin 512MB Data Card	11-06268	$159.95
Garmin 256MB Data Card	11-02697	$105.95
Naishield Garmin 495/496 Screen Protector	11-07165	$13.95
Make it Glare Wizard Glareshield for 495/496	11-07939	$34.95
Jeppesen Using the Garmin 496 CD	11-05024	$74.95

GARMIN GDL 39/393D ADS-B RECEIVER

The GDL 39 portable ADS-B receiver combines a dual-link ADS-B receiver and a GPS receiver into a single unit that streams ADS-B traffic and subscription-free weather to Garmin aviation portables, iPads and a wide array of other mobile devices. The GDL 39 provides wireless support for the aera 796/795 and compatible mobile devices, such as the iPad, via built-in Bluetooth connection. Other Garmin portables including the GPSMAP 696/695 and the aera 500 series can connect to the GDL 39 with a single cable.

Description	Part No.	Price
GDL39 Portable ADS-B and GPS Receiver for GPS-MAP696/695	11-10725	$599.00
GDL39 Portable ADS-B and GPS Receiver for GPS-MAP396/496/495	11-10726	$599.00
GDL39 Portable ADS-B and GPS Receiver for aera 500 Series	11-10727	$599.00
GDL39 Portable ADS-B and GPS Receiver with DC Power Cable "IPAD" and Android /795	11-10728	$599.00
GDL39 Portable ADS-B and GPS Receiver for aera 796/795	11-10729	$599.00
GDL39 Portable ADS-B and GPS Receiver with Bare Wire "BT"	11-10730	$599.00
GDL 39 Portable Receiver for iPad/Android/795 w/Battery	11-11587	$649.00
GDL39R Remote Mount Remote Mount Portable ADS-B & GPS Receiver	10-05503	$799.00
GDL 39 3D Portable Receiver for iPad/Android/795 w/Battery	11-12368	$899.00
GDL 39 3D Portable ADS-B / GPS Receiver	11-12367	$849.00
Power/Data Cable,GDL39 to GPSMAP696/695	11-10732	$63.75
Power/Data Cable,GDL39 to GPSMAP 396/496/495	11-10733	$64.00
aera 500 Series Aviation Mount,CLA w/audio, mini-B & GDL39	11-10734	$63.75
Power/Data Cable,Bare Wire,GDL39	11-10735	$63.75
aera 796/795 Aviation Mount,CLA w/audio, mini-B & GDL39	11-10736	$63.75
Battery,GDL39	11-10737	$99.00
GDL 39 Mount	11-10799	$48.95
GDL 39 Carry Case	11-10800	$17.95
GDL 39 Replacement Antenna	11-10802	$27.50

SANDIA SAI 340 QUATTRO 4-IN-1 INSTRUMENT

The SAI 340 Quattro is Four-In-One standby instrument that gives you precision Airspeed, Attitude, Altitude and Slip indications, all in an easy to read EFIS presentation. The Quattro can serve as a cost effective replacement for steam-gauge standby instruments in retrofit EFIS equipped aircraft, providing for a more consistent user interface during emergency operations. It can also be an excellent safety enhancing addition to your traditional six pack panel.

With its built-in battery, the SAI 340 Quattro provides up to 2 hours of stand alone operation, ensuring an unprecedented level of redundancy. Yet it weighs in at a scant 1/2 pounds - less than a typical airspeed indicator.

The fully TSO'd display fits directly into a standard round 3" instrument hole with no panel modification, making it a near drop-in installation. Stunning air-transport quality graphics provide amazingly smooth, fluid motion, making the SAI 340 an investment to be proud of - and at a price that won't break the bank.

Features:
- TSO'd Airspeed, Attitude, Altitude and Slip
- Full Solid State Reliability • Integral Backup Battery
- Air-Transport Quality Graphics
- Standard 3" Instrument Hole Mounting.

P/N 11-12817 ..... $2,995.00

AV

GARMIN GLO FOR AVIATION

Fly with the portable device of your choice and Garmin-caliber GPS data at the same time. GLO for Aviation brings you the best of both worlds by combining GPS/GLONASS receivers with Bluetooth® technology so you can get precise position information on your iPad, iPhone or Android device.

GLO for Aviation can receive position information from both the GPS and GLONASS satellite constellations, allowing it to connect to up to 24 more satellites than devices that rely on GPS alone. This allows GLO to lock on to satellites approximately 20% faster and keep up with even the most demanding jet speeds. What's more, GLO updates its position information 10x per second – up to 10x more often than the GPS receivers in many mobile devices. When you access geo-referenced charts, Garmin SafeTaxi or the moving map display in Garmin Pilot (6 months of which come free with your GLO purchase), you'll know that what you see is the most precise picture possible.

Using Bluetooth® technology, GLO for Aviation wirelessly pairs to your mobile device. Just use the included mount to set GLO on your glare screen and within moments, you'll be receiving GLO's position data. The device features up to 12 hours of battery life to keep your position on even the longest of flights, and charging GLO between uses is a cinch with the included USB cable or 12/24 Volt cigarette lighter adapter

In the Box: • GLO Unit • Cigarette Lighter • Mount • USB Cable • 6 month trial for Garmin Pilot App.

Note: Garmin Pilot app only serves USA for charts and navigation. Expanded coverage expected in future. Garmin GLO will provide aviation grade GPS signal worldwide.

Description	Part No.	Price
Garmin GLO For Aviation	11-10779	$129.00
Garmin GLO GPS with Vehicle Power Cable	11-11571	$99.00
Accessories	Part No.	Price
Garmin Pilot App Basic Unlock	13-11866	$74.99
Garmin Pilot App Pro Unlock W/ Safetaxi & Geo Ref Charts	13-11867	$149.99

FREEFLIGHT XPLORER ADS-B RECEIVER

Unit does not come with UAT (transponder) antenna. Must be ordered seperately.

Note: For use only with Freeflight's app or WingX at this time.

The XPLORER system delivers superior value because it gives pilots access to free datalink weather today and a built-in upgrade path to fully compliant ADS-B capabilities to meet the 2019 equipage deadline. The system is based on FreeFlight Systems' proven and highly regarded RANGR family of 978MHz UAT ADS-B systems and receives the full ADS-B Flight Information Service Broadcast (FIS-B) that includes graphical weather.

XPLORER connects wirelessly to any suitable display including the iPad running FreeFlight System's free app.

The FreeFlight Systems XPLORER solution is permanently installed with no cockpit or wire clutter. It also includes an externally mounted ADS-B antenna for unimpeded reception of broadcast data. When installed with a certified ADS-B Out transmitter, the XPLORER system also becomes a full-featured, ADS-B traffic receiver. Unlike other low-cost receivers, it will not display incomplete and therefore potentially hazardous traffic information.

Features: • Power: 9 - 40 VDC, Typical 0.1A @ 28 VDC • Dimensions: 1.4 X 3.3 X 4.68 (H x W x L in) • Weight: 4.5 oz • Uses TSO-C190 or TSO-C144 GPS Antenna or any standard antenna compliant with RTCA/DO-301

Please note any ADS-B unit will operate within the USA only when in clear line of sight of an ADS-B tower (flying at a higher altitudes may be required to gain proper signal).

For more information please visit: http://www.faa.gov/nextgen/implementation/portfolio/trans_support_progs/adsb/

P/N 11-10806 ..... $695.00

Accessories	Part No.	Price
TED XPDR Antenna	11-17995	$17.95
RA Miller AV-22 XPDR Antenna	AV-22	$52.75
Comant CI-101 XPDR Antenna BNC	11-17970	$144.95
RA Miller AV-74 DME XPDR Antenna	11-05846	$109.85
Comant CI-105 DME XPDR Antenna BNC	11-17965	$143.85

G-FORCE MOUNTS

The powerful G-Force vacuum base can withstand 23g of shear force, making a sturdy, lasting bond wherever you have a smooth, non-porous surface. That includes glass, plastic, even gelcoat. Creates a stable, reachable platform for your portable GPS that makes programming a breeze Take it from airplane to auto. It even works in the boat. All G-Force Mounts include appropriate mounting hardware and an easy-to-follow User Guide.

Mount for Garmin aera 700 Series - The G-Force GF220 Mount is all you need to turn your portable, large-format GPS into a heads-up display that will confirm your skill to think past the yoke.

P/N 11-10740 ..... $68.50

Mount for Apple iPod - The G-Force GF260 iPad Mount comes complete: with a custom-designed cradle, tailored to your iPad-1 or iPad-2, secured to the remarkable G-Force GF2 Twin base.

P/N 11-10741 ..... $64.75

Mount For Mini-tablet PC'S - I f you want to turn your mini-tablet PC into a heads-up display, you want the G-Force GF163 Mount. The G-Force GF163 mount connects to your mini-tablet with the legendary Air Base.

P/N 11-12115 ..... $56.90

Mount for Early Garmins - The G-Force Mount docks directly to the OEM cradle supplied by Garmin International with its GPS/MAP models 195 through 496. Other Garmin models and units from other manufacturers may require an interface cradle at additional cost. Cradles are not included with purchase. P/N 11-08097 ..... $42.75

Mount for Garmin 695/696 - This G-Force GF2 Mount is all you need to turn your portable, large-format GPS into a heads-up display that will confirm your skill to think past the yoke. In the time it takes to unravel your headset, your portable, large-format GPS will look like a fixed addition to your panel instrument array. P/N 11-08099 ..... $73.85

GF1.2 Aera Mount - The G-Force GPS Mount Manages your cockpit Resources, Restores your priorities, Returns valuable seconds to your command P/N 11-08773 ..... $42.75

GF3 Antenna Farm - Collects Garmin's multiple antennas on the G-Force GF3 Mount, and locates them under the window canopy for superb clear satellite contact. A great way to manage that tangle of antenna wires. P/N 11-08101 ..... $41.95

GF7 Camera Mount - Now, High-Speed Photography is a One-handed No-Brainer. Attach your lightweight camera or video to this G-Force GF1 Mount, fitted with an industry standard 1/4-20 camera stud.

P/N 11-08103 ..... $42.50

GF27 Camera Mount -Twice the holding power means double security. Dock your heavier camera to the G-Force GF2 Mount, fitted with an industry standard 1/4-20 camera stud. P/N 11-08104 ..... $79.50

FAT GECKO CAMERA MOUNTS

Secure cameras to any smooth surface including: motorcycles, cars, airplanes, and more. Fat Gecko's suction cups are so strong they can safely secure hold a camera weighing up to six pounds. Allows for 360° tilt, 360° turn, and 360° rotation for all the best filming angles in any activity The 1/4 x 20 tripod mounting screws means you can use virtually any digital still or video camera on the market. Equipped with a removable extension tube so you can film around tire wells or over windshields.

Description	Part No.	Price
Fat Gecko Camera Mount	11-07877	$79.99
Fat Gecko Quick Release GPSMAP 696 - A quick and easy attachment of the Garmin™ 695 & 696 GPS units to be used in conjunction with the Fat Gecko.	11-07918	$18.95
Fat Gecko Mini Mount - Single suction cup, with a 3" extension bar. Tested to carry 4 lbs.	11-07917	$38.95
Fat Gecko Mini Tree Antenna - Gives users a quick and easy way to mount GPS antennas and others out of the way. To be used in conjunction with the Fat Gecko Mini Mount	11-07919	$23.95
Fat Gecko Co-Pilot is an easy way to mount any camera in a vehicle, airplane or any place two windows face each other. For example the Co-Pilot allows the camera to be suspended in the rear of the plane looking between the seats. Once attached, the camera can be adjusted to shoot up or down, turned sideways or even reversed by loosening the two adjustment knobs on the mount.	11-10722	$89.00

GARMIN PORTABLE GPS

GARMIN D2 PILOT GPS AVIATION WATCH

Garmin re-imagines the aviation portable with the first highly capable GPS watch designed specifically for aviators. D2's features include Garmin's signature direct-to and nearest navigation functions, as well as a built-in altimeter with adjustable baro setting, altitude alerting capabilities, display of both local and Zulu/UTC time, and the ability to seamlessly integrate with the Garmin Pilot™ app, VIRB™ action camera, and more.

Description	Part No.	Price
Garmin D2 Pilot GPS Aviation Watch	11-12088	$449.99
Garmin D2 Usb Charger Cable	10-05481	$19.99
Garmin D2 Euro Ac Adapter	10-05482	$24.75
Garmin D2 Ac Adapter	10-05483	$16.75
Grmin D2 External Battery Pack	10-05484	$78.75
Garmin D2 GPS Abc Watch Band Olive Green	10-05485	$15.26
Garmin D2 GPS Abc Leather Watch Band	10-05486	$34.95
Garmin D2 GPS Abc Watch Band Light Gray	10-05487	$15.25
Garmin D2 GPS Abc Watch Band Dark Gray	10-05488	$15.25
Garmin D2 GPS Abc Watch Band Black	10-05489	$15.25
Garmin D2 GPS Abc Watch Band Orange	10-05490	$15.25
Garmin D2 Tempe	10-05491	$28.95
Garmin D2 Fabric Wrist Strap Kit	10-05492	$21.25
Garmin D2 Bicycle Mount Kit	10-05493	$12.75
Garmin D2 Carabiner Strap	10-05494	$28.75
Garmin D2 Official Geocaching Kit	10-05495	$19.75
Garmin D2 Speed Cadence Bike Sensor	10-05496	$49.95
Garmin Heart Rate Monitor	10-05497	$49.95
Garmin D2 Foot Pod	10-05498	$68.75
Garmin Soft Strap Premium Heart Rate Monitor	10-05499	$68.75
Uma 2-1/4 Vsi 0-2000 Ft.	10-05500	$283.00
Garmin Elastic Strap For Heart Rate Monitor	10-05501	$7.25
Garmin Chirp	10-05502	$26.50

INREACH FOR EARTHMATE ANDROID PHONES

Use the inReach satellite communicator by itself and stay connected with pre-loaded text messages, delivery confirmation, SOS, and remote tracking. Or, pair inReach with a PN-60w (see accessories) for exclusive two-way messaging.

Features: Two-way satellite messaging. Interactive SOS. Message delivery confirmation. Pole-to-pole global coverage. inReach users can communicate directly with one other to share information and locations. You can also post messages to Facebook and Twitter and enable remote tracking so others can follow your travel online. Box Includes: inReach, Quick Start Guide, Micro USB cable, 2 lithium AA batteries, and Lanyard.

For Android Phones ..... P/N 11-10448 ..... $249.95

DELORME INREACH SE GENERATION 2

Satellite Communicator that sends and receives messages with GPS, color screen and virtual keyboard. Combines the latest satellite communication technology and product innovation to make it the most feature-rich, and easy to use satellite communicator that both sends and receives messages available on the market at an affordable price point. With a color screen and virtual keyboard, standalone mode provides full, free-form texting capabilities to any cell phone number or email address, social media posting, the ability to change service modes and configure user settings – all without the need for a paired, companion device. Offers a sleek, pocket-sized design, intuitive LED indicator for satellite availability, audible message notifications, and a long-lasting internal rechargeable lithium battery for ultimate convenience and portability.

P/N 11-11425 ..... $299.95

DELORME INREACH EXPLORER

Navigate, create waypoints, log your trip and find your way back. Send and receive text messages. Trigger an interactive SOS. Plan, track and share your journey. You can do all of this from one rugged handheld device with 100% global coverage from Iridium. You can also pair it with your mobile device to access topographic maps and U.S. NOAA charts.

P/N 11-12868 ..... $379.95

ACCESSORIES FOR GPSMAP 196, 96C AND 96

Description	Part No.	Price
Power Data Cable	11-90345	$19.95
AC Adapter	11-02299	$15.90
Cigarette Adapter	11-18759	$18.95
PC Interface with AC Adapter	11-00713	$34.50
PC Interface Cable	11-90346	$27.95
USB To RS232 Cable Converter	11-01037	$58.95
GA 27C Remote Antenna	11-00052	$73.50
8 Foot Extension cable for GA 27C	11-07283	$29.85
Antenna Flange Mount	11-02683	$16.50
MCX to BNC Antenna Cable	11-90210	$18.85
GA 26C Suction Cup Mount	11-02685	$13.90
Dash Mount Disk	11-18862	$9.50
Auto Mount	11-03900	$28.50
Temp. Adhesive 3-Pack	11-02689	$4.75
Permanent Adhesive Disk	11-00547	$2.65
Carrying Case (96C & 96)	11-90325	$9.95

GARMIN GPS TRADE-IN / TRADE-UP PROGRAM

Trade-in only applies towards a purchase of a new Garmin unit listed below (one unit per trade-in). Trade-in must be complete, having all accessories, and the unit must be in good cosmetic and working condition. Any unit not meeting this requirement can receive a lesser trade-in value or have the unit returned.

1. Purchase a new GPSMAP 695, 696, or Aera 500, 510, 550, 560.
2. At the time of order, our sales representatives will give you your customer number and order number to use when sending in your trade-in unit.
3. Once you receive your new Garmin unit, please call our customer service number at 800-861-3192 and reference your customer number and order number to receive an RMA to ship your trade-in to Aircraft Spruce and Specialty.
4. After we receive your trade-in, we will verify that the unit is complete and in good cosmetic and working condition. Once verified we will credit you the trade-in value. Units with missing accessories will add delay to the credit process.

GDL 39 ..... $250.00
GPSMAP 496 ..... $900.00
GPSMAP 495 ..... $750.00
GPSMAP 396 ..... $650.00
GPSMAP 296 ..... $500.00
GPSMAP 196 ..... $200.00
GPSMAP 696 ..... $1,100.00
GPSMAP 695 ..... $900.00
aera 560 ..... $1,075.00
aera 550 ..... $725.00
aera 510 ..... $600.00
aera 500 ..... $350.00

*Verify current trade-in values at time of order by calling 877-477-7823 or email us at info@aircraftspruce.com. We will beat any other supplier's price on any unit. Aircraft Spruce no longer accepts the Pilot III, 90 Series, 195 or 295 for trade.

USED GARMIN GPS UNITS

Used Garmin GPS units are subject to availability.
Please call 877-477-7823 for availability and current prices.

Description	Part No.	Price
Used GDL 39	11-12370	$350.00
Used Garmin GPSMAP 196	11-02713	$300.00
Used Garmin GPSMAP 296	11-03593	$525.00
Used Garmin GPSMAP 396	11-04737	$750.00
Used Garmin GPSMAP 495	11-07063	$825.00
Used Garmin GPSMAP 496	11-07064	$1,075.00
Used Garmin GPSMAP 695	11-10051	$1,100.00
Used Garmin GPSMAP 696	11-10050	$1,275.00
Used Garmin aera 500	11-09522	$425.00
Used Garmin aera 510	11-09521	$700.00
Used Garmin aera 550	11-09520	$825.00
Used Garmin aera 560	11-09519	$975.00

GARMIN PORTABLE GPS - ACCESSORIES

GARMIN PILOT™ AVIATION APP

Garmin is excited to announce Garmin Pilot, a new aviation app for the iPad, iPhone, and Android mobile devices. The app brings Garmin's industry-leading aviation technology to mobile devices; offering pilots complete trip planning, DUATS filing, weather, navigation and electronic flight bag capabilities. Garmin Pilot is the perfect complement to our extensive line of aviation navigation products and services. Garmin Pilot incorporates the intuitive icon user interface and many of the same great features from our other popular products. Pilots will find it very familiar and easy to use. The Garmin Pilot app will help with every facet of your trip - Planning, Filing, and Flying.

Note: Garmin Pilot app only serves USA for charts and navigation. Expanded coverage expected in future.

Basic ..... P/N 13-11866 ..... $74.99

Pro with Safe Taxi and Geo-Ref Charts ..... P/N 13-11867 ..... $149.99

GARMIN GMX 42 SIRIUS XM RECEIVER

The Garmin GXM 42 portable SiriusXM Aviation weather receiver that when paired with an aera 796 allows pilots to access new weather services made available by SiriusXM's enhanced satellite network. The updated SiriusXM Aviation service gives pilots access to comprehensive weather products as they become available, allowing operators to make educated decisions in-flight as it relates to weather. The GXM 42 is the latest addition to a vast lineup of weather antenna receivers to offer state-of-the-art SiriusXM Aviation information. GXM 42 can also receive SiriusXM Satellite Radio for an additional fee. P/N 10-05525 ..... $599.00

GARMIN TRIP AND WAYPOINT MANAGER CD

Make trip planning simple for your next outdoor adventure with MapSource Trip and Waypoint Manager. This computer software allows you to transfer waypoints, routes and tracks between your Garmin device and your computer. For reference, Trip and Waypoint Manager provides general worldwide maps that include interstates, motorways, political boundaries, principal cities and towns, oceans and other general reference details to place your GPS data in context. Provides basic worldwide maps to help you understand your GPS data in context, including major interstates, boundaries, oceans, principal cities and towns, and other general reference details. Offers an easy and convenient way to archive your GPS data for future use. Does not contain detailed maps. You cannot use this product to load maps to your Garmin device. P/N 11-02703..... $22.95

GARMIN ETREX 20

eTrex 20 takes one of the most popular and reliable GPS handhelds and makes it better. Redesigned ergonomics, an easier-to-use interface, paperless geocaching and expanded mapping capabilities add up to serious improvements for an already legendary GPS handheld. Features: • Automatic routing (turn by turn routing on roads): yes (with optional mapping for detailed roads) • Electronic compass: no • Touchscreen: no • Barometric altimeter: no • Camera: no • Geocaching-friendly: yes (paperless) • Custom maps compatible: yes • Photo navigation (navigate to geotagged photos): yes • Sun and moon information: yes • Tide tables: yes • Area calculation: yes • Custom POIs (ability to add additional points of interest): yes • Unit-to-unit transfer (shares data wirelessly with similar units): no • Picture viewer: yes • Garmin Connect™ compatible (online community where you analyze, categorize and share data): yes.

P/N 11-11422 ..... $199.99

GARMIN GPSMAP 696 / 695 QUICK REFERENCE GUIDE

This reference guide is compatible with the GARMIN GPSMAP 696/695. P/N 11-07351 ..... $39.99

GARMIN 296/396 HOW TO DVD

P/N 11-07816 ..... $25.00

GARMIN HIGH SPEED MULTI CHARGER

Add 2 high-speed USB ports to your vehicle's 12 V outlet without losing the ability to power your compatible device. Use each USB port to charge a phone, tablet or any other device that needs power on the go. P/N 11-12113 ..... $27.50

QREF GUIDES FOR GPS UNITS

Now you've got a choice. The quick reference books feature easy-to-use tabbed pages for concise procedures and navigation help in a compact size, prefect for someone who wants complete information or is new to a system. The cards provide all the essential information in a 5" x 8" full-color, hard plastic card for those who are already familiar with their system. Either way, Qref keeps you in the know, quickly and easily.

GPS Model	Card P/N	Price	Book P/N	Price
Garmin aera	13-07064	$13.95	13-07063	$27.95
GPSMAP 195	13-06355	$13.95	13-06291	---
GPSMAP 196	13-06356	$13.95	13-06292	$18.95
GPSMAP 295	13-06357	$13.95	13-06293	$22.95
GPSMAP 296	13-06360	$13.95	13-06294	$22.95
GPSMAP 396	13-06362	$13.95	13-06295	$27.95
GPSMAP 495	13-06362	$13.95	13-06313	$21.95
GPSMAP 496	13-06362	$13.95	13-06315	$25.95
GPSMAP 696/695	13-06363	$13.95	13-06316	$27.85
GMX200	13-06353	$13.95	---	---
GNS 430	---	---	13-06288	$27.95
GNS 480/CNX80	13-06418	$13.95	13-06289	$27.95
GNS 530/430	13-06354	$13.95	13-06290	$27.95
G1000 Card	13-06417	$13.95	---	---
G1000 non WAAS	---	---	13-06423	$48.95
G1000 WAAS	---	---	13-06424	$48.95
Garmin Cirrus	---	---	13-06425	$48.95
AIRMAP 2000C	13-06365	$13.95	13-06317	$21.75
AIRMAP 600C	13-06364	$13.95	13-06318	$16.95
AV8OR	13-06348	$13.95	13-06287	$27.95
AV8OR Ace	13-07066	$13.95	13-07065	$28.95
GEOPILOT II	13-06347	$13.95	13-06286	$24.95
EKP-II			13-06285	$27.95
EKP	13-06322	$13.95	---	---
KLN 89B	13-06368	$13.95	---	---
KLN 90B	13-06367	$13.95	---	---
KLN 94	13-06366	$13.95	13-06422	$23.95
KLN GX Series	13-06369	$17.25	---	---
Avidyne Entegra version 3-5	---	---	13-06358	$48.95
Avidyne Entegra version 6-7	---	---	13-06359	$48.95

VISIT OUR WEBSITE FOR A COMPLETE LIST OF QREF GPS GUIDES.

JEPPESEN GARMIN GPSMAP TRAINING CDS

The Jeppesen Training CDS let pilots learn at their own pace, practicing procedures at the comfort and safety of a computer desktop, rather than flying heads-down. Easily and quickly get the users familiar with operations by using a visual hands-on approach.

Description	Part No.	Price
Jeppesen GPSMAP 196 Interactive	11-02442-1	$52.25
Jeppesen GPSMAP 296 Interactive	11-02848-1	$43.75
Jeppesen GPSMAP 396 Interactive	11-04514-1	$63.95
Jeppesen GPSMAP 496 Training CD	11-04766	$57.85
JS202402 JEPP 430W/530W WAAS CD	13-05646	$114.75
Jeppesen Weight & Balance Graphic Planner CD	11-04767	$41.75

GPS MANUALS

Pilot-friendly manuals are available for most receivers. Our task-oriented manuals are simplified directions that lead you step-by-step through all the GPS operations. Includes descriptions of all pages.

Description	Part No.	Price
G1000W WAAS Manual	13-05694	$36.95
G1000W WAAS Ebook Manual	13-09879	$46.50
GNS-430W WAAS Manual	13-05129	$39.95
GNS-430 Guidebook	11-04307	$49.50
GNS-530 Guidebook	11-04308	$29.85
G1000 Guidebook	11-04309	$39.95
GPSMAP 295	11-04310	$27.50
Learn How to Use Your GPS 496	11-05024	$74.95
Garmin aera 560 Manual	11-10829	$34.95
Garmin GPSMAP 795/796 Manual	11-10828	$27.50
Garmin GPSMAP 795/796 Manual ebook	13-12667	$33.70
Garmin GNS 480 WAAS Manual	11-08788	$29.95
GPSMAP 695/696 Manual	11-07937	$35.75
GPSMAP 695/696 Ebook Manual	13-09880	$33.70
GPSMAP 695/696 Guidebook	11-07937	$35.75
GPSMAP 496 Guidebook	11-05581	$35.75
GPSMAP 396 Guidebook	11-04311	$40.00
GPSMAP 296 Guidebook	11-04312	$36.75
GPSMAP 196 Guidebook	11-04313	$36.75
Garmin G300 Manual	11-09130	$49.95
Garmin G300 Ebook Manual	13-09877	$33.70
Garmin G900X Manual	11-09093	$54.95
Garmin G900X Ebook Manual	13-09878	$46.50
Bendix/King KLN-90B Guidebook	11-04303	$39.95
Bendix/King KLN-900 Guidebook	11-04304	$45.00
Bendix/King KLN-90B/900 Guidebook	11-04305	$45.00
Bendix/King KLN-89B/94 Guidebook	11-04306	$31.50

AV

GPS PROTECTORS

NAVIGATION SCREEN PROTECTORS

The Pre-cut navigation screen protectors provide excellent protection from scratches. The anti-glare layer reduces unwanted reflections, increasing contrast, clarity, and viewing comfort even with the use of polarized lenses. This film is thick enough to protect the screen, yet thin enough to have no effect on touch screen sensitivity. Light tack adhesion provides for residue-free removal. Does not require special cleaners. Available for: ADR, Anywhere Map, Avidyne, Apollo, Chelton, Eclipse Avio, Garmin, King, Vista Nav, and more.

Description	Part No.	Price
Flight Bag NAV	11-07140	$21.25
Map LS-800	11-07141	$22.25
CNX-80	11-07142	$13.50
Aspen EFD PRO	11-07143	$16.50
1 pc. Avidyne	11-07144	$28.75
2 pc. Avidyne	11-07145	$48.00
5 pc. Piper Models	11-07146	$72.00
1pc FlightMax 500	11-07147	$14.50
1pc Chelton IDU	11-07148	$16.95
4 pc. 2G-430	11-07149	$43.25
4 pc. 2G-430	11-07150	$57.75
2PC C-P	11-07151	$57.75
3PC Eclipse Avio	11-07152	$96.00
1PC G-1000	11-07153	$34.75
1 pc AV8OR	11-08214	$14.85
2PC G-1000	11-07154	$48.50
3PC G-1000	11-07155	$81.75
Garmin 430	11-07157	$12.95
Garmin 480	11-07158	$13.95
Garmin G600/G500	11-07161	$31.75
Garmin 796/795	11-10723	$19.85
Garmin GTN 650	11-10855	$14.95
Garmin GTN 750	11-10854	$17.95
Garmin 696	11-09441	$18.75
Garmin aera	11-08217	$14.95
GMX-20	11-07163	$16.50
GMX-200	11-07164	$17.50
196,296,396,496	11-07165	$13.95
KMD 250	11-07166	$12.50
King KMD550	11-07167	$14.95
CIS-1000	11-07168	$22.25
AV8OR Ace	11-08216	$18.75

KNEEBOARD FOR HANDHELD GPS & PDAS

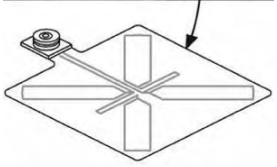
This angled kneeboard accommodates virtually every handheld GPS or PDA. The circular base is slightly cone-shaped for a leg-conforming fit and is wiggle-free secured around either upper leg with a velcro tape. The GPS or PDA attaches with velcro on a slant surface, which is angled about 30° and permits a perpendicular view on the screen.

P/N 11-01285 ..... $19.95

TABLET MOUNTING SYSTEM

For iPad®, iPad2, iPad (3rd Generation), iPad Mini and other Tablet PCs by simply changing the mounting claws. Sturdy, durable high quality frame construction. Touch points securely hold your tablet in place without any damage. The mount is suitable for iPad®, iPad2, iPad (3rd Generation) and other Tablet PCs by simply changing the mounting claws. Universal metal tube clamp securely mounts to microphone stands and keyboard stands with tube diameters of up to 28mm. Multi-angle adjustment allows universal positioning of the tablet. The adapter allows for mounting the plate directly to a microphone stand. Quick set-up and release. Weight Packed: 0.88 lb(0.4 kg) Width Packed: 6"(15.24 cm) Height Packed: 8"(20.32 cm) Depth Packed: 3"(7.62 cm) P/N 11-11869 ..... $29.95

CLEAR-NAV TRANSPARENT GPS ANTENNA FOR GARMIN UNITS



Clear-Nav is the aviation version of transparent GPS antennas using the design, development and manufacture of technologically advanced antenna systems for wireless applications. Features: Flick the GPS antenna from your dash-board, or the from the air-stream. Easy to install on plexi-glass, lexan or perspex windshields (Code X77P) .... also works well when installed on the inside of fiberglass upper fuselage - (for glass version please ask for Code X77G). UV resistant and virtually damage proof once it is installed. The supplied high quality RG174 thin (1/8") coaxial cable is easy to route around frame(s) and cabin linings. Specifications: Radiator: 2 x half-wave dipole 90 degrees phase shift(RHCP when Installed with adhesive side to sky), Antenna Gain: (Passive) 3dBi, LNA Gain: (Active) 27dB, System Gain: 30dB = Antenna + LNA, VSWR: < 1.2:1 @ Band center LNA Operating Voltage: +3 ~ +5v, Connector: MCX

For Garmin 296, 396, 496, 430, 530.....P/N 11-08586 ..... $69.95
For Garmin 696.....P/N 11-08536 ..... $69.95

EZCLEAR AND NAVISHIELD GPS PROTECTOR KITS

The pre-cut Navishield screen protectors provide excellent protection from scratches. The anti-glare layer reduces unwanted reflections, increasing contrast, clarity, and viewing comfort even with the use of polarized lenses. This film is thick enough to protect the screen, yet thin enough to have no effect on touch screen sensitivity. Light tack adhesion provides for residue-free removal.

These EZCLEAR products meet Garmin G1000 Pilot Guide specs for cleaning and is safe to use on glass panels. EZCLEAR Instrument Cleaning provides a safe, effective way to remove fingerprints and dust from glass panels, instruments and more. Click here to see EZCLEAR featured in the February 2011 edition of AOPA Pilot. The kit contains three EZCLEAR Cleaning Packs and one Polishing Cloth.

Description	Part No.	Price
GPS Protection Kit for Garmin aeras	11-09429	$29.50

EZCLEAR INSTRUMENT CLEANING KIT

This product meets Garmin G1000 Pilot Guide specs for cleaning and is safe to use on glass panels. EZCLEAR Instrument Cleaning provides a safe, effective way to remove fingerprints and dust from glass panels, instruments and more. The kit contains three EZCLEAR Cleaning Packs and one Polishing Cloth; these items have been specifically paired together to ensure safe and effective screen cleaning. Per the instructions, the user wipes the surface with the Cleaning Pack and then dries the area with the Polishing Cloth. The Cleaning Packs are ammonia free, aviation-grade and will not remove or damage any anti-reflective coating. The Polishing Cloth is washable. This kit will last between 3-4 months depending upon frequency of use. P/N 09-02394.....$14.85

AV

GARMIN PANEL PACKAGES – AIRGIZMOS

GARMIN AIRCRAFT PANEL PACKAGES

We have put together some avionics packages for VFR pilots using only the latest in Garmin technology. Some of the bundles are certified and others are for experimental application so be sure to choose the correct package for your aircraft needs. These bundles do include some cost savings versus buying each item a la cart so take advantage and get your panel set up in one quick order. We also offer a custom wiring harness that you can add-on to your package to make installation a breeze. Note: We can create a custom package with any combination of avionics units we carry so please contact our sales department if one of the combinations above is not exactly what you need.

Package	Part No.	Price
PACKAGE A - CERTIFIED		
• Garmin Aera 500 Americas • Airgizmos Panel Dock • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05044	$3,844.00
PACKAGE B - EXPERIMENTAL		
• Garmin Aera 500 Americas • Airgizmos Panel Dock • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05045	$3,844.00
PACKAGE C - CERTIFIED		
• Garmin Aera 510 Americas • Airgizmos Panel Dock • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05046	$4,695.00
PACKAGE D - EXPERIMENTAL		
• Garmin Aera 510 Americas • Airgizmos Panel Dock • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05047	$4,144.00
PACKAGE E - EXPERIMENTAL		
• Garmin Aera 510 Americas • Airgizmos Panel Dock • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05048	$6,494.00
PACKAGE F - CERTIFIED		
• Garmin Aera 510 Americas • Airgizmos Panel Dock • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05049	$5074.00

Package	Part No.	Price
PACKAGE G - EXPERIMENTAL		
• Garmin Aera 560 Americas • Airgizmos Panel Dock • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05050	$4,544.00
PACKAGE H - EXPERIMENTAL		
• Garmin Aera 560 Americas • Airgizmos Panel Dock • GTR 200 Com • GTX 330ES Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-05051	$6,894.00
PACKAGE I - CERTIFIED		
• Garmin Aera 796 Americas w/o XM Antenna • Airgizmos Panel Dock • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07124	$5,571.00
PACKAGE J - CERTIFIED		
• Garmin Aera 796 Americas w/o XM Antenna • Airgizmos Panel Dock • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable • Airgizmos Panel Dock • GTR 225 Com • GTX 330ES Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07125	$7,337.00

Package	Part No.	Price
PACKAGE K - EXPERIMENTAL		
• Garmin Aera 796 Americas w/o XM Antenna • Airgizmos Panel Dock • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable • Airgizmos Panel Dock • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07126	$5,021.00
PACKAGE L - CERTIFIED		
• Garmin Aera 795 Americas • Airgizmos Panel Dock • GDL 39 with Battery • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07127	$6,124.00
PACKAGE M - EXPERIMENTAL		
• Garmin Aera 795 Americas • Airgizmos Panel Dock • GDL 39 with Battery • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07128	$5,575.00
PACKAGE N - CERTIFIED		
• Garmin Aera 795 Americas • Airgizmos Panel Dock • GDL 39 3D with Battery • GTR 225 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07129	$6,274.00
PACKAGE O - EXPERIMENTAL		
• Garmin Aera 795 Americas • Airgizmos Panel Dock • GDL 39 3D with Battery • GTR 200 Com • GTX 327 Transponder • ACK A-30.9 Encoder • Garmin Power Data Cable	11-07130	$5,776.00
Custom Harness for Garmin VFR Pkgs	11-07573	$285.00

GARMIN AERA 500 SERIES DASHBOARD MOUNT

Dashboard Mount for Garmin Aera 500, 510, 550, 560. Adjusts easily, like a rearview mirror, so you can position your device for the best viewing angle. Secure the mounting base to your vehicle's dashboard with either permanent or temporary adhesive disks (included). P/N 11-09102..... $21.50

AIRGIZMOS GARMIN 695, 696, 795, 796, AERA XM ANTENNA DOCK

Here is the perfect companion to your new Garmin 695, 696, 795, 796, or aera 560 and the AirGizmos Panel Dock. Designed to mobilize your costly XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscriptions. P/N 11-09118..... $74.50

AIRGIZMOS GARMIN 396/496 ANTENNA DOCK PREMIUM SET

Designed to mobilize your costly 396 or 496 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscriptions. Kit Includes: 2 Cradles, 1 Base, 2 Cables P/N 11-09119..... $99.95

AIRGIZMOS IPAD MINI KNEE DOCK

AirGizmos Knee Dock has the ability to adjust the angle of the iPad mini for best viewing angle. This feature cuts down on glare and increases the enjoyment of using the amazing iPad mini in the cockpit.
P/N 11-12097..... $122.75

AIRGIZMOS PANEL DOCK SMALL MOUNTING RAIL KIT

For use with small format Panel Docks: 496 Panel Dock, AV8OR Panel Dock, AERA Panel Dock, etc. Mount the Panel Dock™ when you don't have any existing radio stack space available. P/N 11-12093..... $13.95

AIRGIZMOS GARMIN ANTENNA DOCK 696/796 PREMIUM SET

Designed to mobilize your costly Garmin 696 or 796 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscriptions. Kit includes: 2 cradles, 1 base, 2 cables. P/N 11-09121..... $99.75

AIRGIZMOS GARMIN 696/796 PREMIUM BEAN BAG SET

Designed to mobilize your costly Garmin 696 OR 796 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscriptions. Kit includes: 1 cradle, 1 base, 1 bean bag, 2 cables. P/N 11-09122.....$129.95

AIRGIZMOS GARMIN 396/496 PREMIUM BEAN BAG SET

Designed to mobilize your costly 396 or 496 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscriptions. Kit includes: 1 cradle, 1 base, 1 bean bag, 2 cables. P/N 11-09120.....$129.95

AIRGIZMOS IPAD MINI PANEL MOUNT

Designed to be screwed to a panel using a standard instrument mounting holes. The iPad mini snaps in and is held securely. Length: - 5.53 inches Height: - 8.18 inches Depth: - 1.76 in
P/N 11-12096..... $93.95

AIRGIZMOS PANEL DOCK LARGE MOUNTING RAIL KIT

For use with large format Panel Docks like the Garmin 695/696 and Bendix King AV8OR ACE. Mount the Panel Dock™ when you don't have any existing radio stack space available. P/N 11-12095..... $18.95

AV

AIRGIZMOS PANEL DOCKS

AIRGIZMOS PANEL DOCK FOR THE GARMIN AERA SERIES

Fits the aera 500 GPS like a glove. Replaces the 496 Panel Dock without modifying the panel. Installs easily in a standard 6.25" opening. Allows quick and easy removal of your portable GPS. Includes an integrated actuator for the power button. Gives your instrument panel a professional, finished look. P/N 11-08321.....$116.75

AIRGIZMOS PANEL DOCK FOR GARMIN 695/696

Securely mounts the Garmin GPSMap 695/696. Designed to allow quick and easy removal of your portable GPS. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look.

Garmin 695/696 Panel Dock.....P/N 11-09439 .....$178.95
GPSMAP Angle Adapter.....P/N 11-07310 ..... $46.85

AIRGIZMOS GARMIN AERA AND 696 GXM-40 ANTENNA AERO DOCK

Here is the perfect companion to your new Garmin 696 or aera 560 and the AirGizmos Panel Dock. Now you can move the XM antenna from plane to plane, or from vehicle to vehicle.

P/N 11-11289.....$72.50

AIRGIZMOS PANEL DOCK FOR GARMIN 196/296/396/495/496

Designed to securely hold your Garmin 196, 296, 396, or 496 portable GPS. It fits nicely in a standard 6.25" avionics stack. Allows you to quickly remove your portable GPS from your plane for upgrades, flight planning, or for use in your car or boat. The Panel Dock is shipped with a set of mounting hardware necessary for attaching it to an avionics stack. P/N 11-03509.....$89.95

AIRGIZMOS PANEL DOCK FOR GARMIN 295

The Garmin 295 is held safely and securely, but can be easily removed in a matter of seconds. The external power and antenna connections are made at the back of the unit, and the cables are secured from falling into the panel with special keyholes machined into the dock..... P/N 11-04315.....$89.95

AIRGIZMOS GARMIN HORIZONTAL PANEL DOCK ANGLE ADAPTER

The Vertical Tilt Adapter angles the viewing angle of the GPS so it is more readable when the GPS is mounted at the bottom of a tall instrument panel. This adapter fits the same opening as the Panel Dock itself, so adding the vertical tilt should be very easy for existing installations. REQUIRES P/N 11-03509.

P/N 11-05029.....$24.95

AIRGIZMOS HORIZONTAL TILT ADAPTOR FOR GARMIN UNITS

AirGizmos Horizontal Tilt Bracket angles the GPS at a fixed angle of 15 degrees, providing a much more convenient viewing angle. This adapter fits in the same panel cutout as the Panel Dock, so if you already have a Panel Dock you can attach this adapter without having to modify your installation. REQUIRES P/N 11-03509. P/N 11-04671.....$22.85

AIRGIZMOS 396 XM ANTENNA DOCK

Now you can move the XM antenna from plane to plane, or from vehicle to vehicle. It is designed to mobilize your costly 496 XM antenna. Using a simple twist & lock mechanism (no tools required) the base will lock your antenna into the preinstalled cradle, and your 396 XM antenna is ready to go! P/N 11-04694.....$74.95

AIRGIZMOS PREMIUM BEANBAG XM 396 & 496 ANTENNA MOUNT

Designed to mobilize your costly 496 XM antenna. It helps to maintain the clean look of a permanenet installation by organizing the antenna cable. Package includes: base, cradle, beenbag assembly, and two cables. P/N 11-07007 .....$117.50

AIRGIZMOS 396 & 496 XM CRADLE & CABLE

This product wil allow you to use the AirGizmos XM Antenna Dock in a second vehicle or aircraft. Use of this product requires that you first purchase the AirGizmos XM Antenna Dock. P/N 11-04781 .....$38.95

AIRGIZMOS PANEL DOCK COVER FOR GARMIN 196/296/396/496

This panel is for Garmin panel dock for models 196/296/396/496. Protects unit from UV rays and hides unit in the aircraft so that theft is less likely to happen. Can be used even if Garmin unit has not been installed yet.

P/N 11-04775.....$18.65

AIRGIZMOS IPAD MINI PANEL DOCK

Mount your iPad mini securely in the instrument panel while still allowing it to be easily removed when you are not flying. The iPad mini Panel Dock is designed to work with the existing Angle Adapter. Radio stack compatible at 8.0"H x 6.25"W x 1.32" D / 4.4 ounces . Fits the same opening as the 696/796/iFly Panel Docks. P/N 11-11460.....$116.95

AIRGIZMOS AV8OR PANEL DOCK

Securely mounts Bendix/King AV8OR GPS. Installs easily in a standard 6.25" opening. Designed to allow quick and easy removal of your portable GPS. Includes right angle extension cable for weather antenna. Gives your instrument panel a professional, finished look.

Width: 6.25" Height: 4.00" P/N 11-07782..... $83.75

AIRGIZMO AV8OR ACE PANEL DOCK

Designed to securely mount your AV8OR ACE in the panel, the AV8OR ACE Panel Dock is the perfect companion to this GPS from Bendix/King. Designed to match the styling of the rest of the avionics in your panel. It fits a standard 6.25" radio stack. The AV8OR ACE can be snapped into the Panel Dock with either the standard battery or the extended battery attached to the GPS.

P/N 11-08589..... $99.95

AIRGIZMOS PANEL DOCK FOR AVMAP EKP-IV

Now you can mount the beautiful, detailed display of the AvMap EKP-IV directly in your instrument panel using the AirGizmos EKP-IV Panel Dock. The AirGizmos EKP-IV Panel Dock is designed to hold the AvMap securely yet it allows you to easily remove your portable from your plane whenever the need arises. The AirGizmos EKP-IV Panel Dock offers easy installation, quick release, hassle-free management of cables, and elegance of design..... P/N 11-04371..... $109.95

AIRGIZMO GEOPILOT PANEL DOCK

This GPS has a nice large screen to go with it's small size. Our Panel Dock is designed to hold the GeoPilot securely in your panel while allowing it to be easily removed for portable use. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look..... P/N 11-05615 .....$96.95

AIRGIZMO GEOPILOT II PLUS PANEL DOCK

Fits in a standard 6.25" radio stack. Power and antenna cables are organized and managed. The included WxWorx weather receiver bracket provides additional organization in the cockpit by providing a secure mount for the WxWorx receiver box.... P/N 11-06855 ..... $109.95

AIRGIZMOS IFLY 700 / 720 PANEL DOCK

Mount your iFly 700/720 GPS in your instrument panel. Using our Panel Dock you can enjoy your portable GPS in a more stable and safe installation. We have added a space inside of the Panel Dock to hold the iFly 700 external battery. Designed to be mounted horizontally or vertically. P/N 11-10848..... $116.90

AIRGIZMOS PANEL DOCK FOR AIRMAP 1000/2000C

The cables supplied by Lowrance fit through keyhole slots on the back of the unit. The release latch at the top of the Panel Dock permits quick removal of the device for use in another vehicle or simply for security purposes..... P/N 11-04372..... $109.95

AIRGIZMO LOWRANCE 600 PANEL DOCK

Panel Dock will allow the AirMap 600c to be nicely mounted in your panel while still allowing it to be easily removed and used as a handheld. Made from durable, high quality plastic similar in appearance to the GPS itself. Gives your instrument panel a professional, finished look. P/N 11-05616..... $62.95

AIRGIZMOS AERO COVER

Fits all of the major brands of GPS and XM weather antennas. It will protect your antenna from the elements. It is streamlined and attractive. Best of all, it gets your antenna out of your way. P/N 11-04777..... $64.95

AIRGIZMOS XM ANTENNA CABLE

XM Antenna Cable. Straight, 2 meter extension for Garmin XM Weather AntennaP/N 11-04780.....$13.95

AIRGIZMOS AERO DOCK

Gives you the option of mounting the antenna on the outside. Designed to mobilize your costly 396 XM antenna. It helps to maintain the clean look of a permanent installation by organizing the antenna cable. Freely move ONE XM antenna from location to location, avoiding high costs of additional equipment and service subscription. Kit includes: 1 cradle, 1 base, 1 cable, mounting hardware. P/N 11-04778.....$74.75

AV

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

ADVENTURE PILOT IFLY 520 GPS

Note: USA Database Coverage Only.
A new level of value boasting versatility and portability with internal power in a smaller 5" form factor. Built for the harsh elements that iPads can't support. Superior reception, extreme operating temperature ranges pilots need at a fraction of the competition's price—even the updates are affordably priced. Sunlight readable and provides both VFR and IFR situational awareness in a simple-to-use 5" Touchscreen. Cord free flying up to 2 hours when ship power is not available. Go straight from the runway to the highway with iFly Streets™. Automatically transition to and from the Airport Diagram upon takeoff and landing. Plan your next flight on official VFR and IFR charts with access to public and private airports. Presents your position over official charts with un-paralleled clarity due to the extensive optimization process. Grab the latest TAF, METAR, Winds Aloft, TFRs and other data before takeoff for reference in flight. Active Alert System monitors and generates warnings of approaching concerns.
Without Street Maps ..... P/N 11-12034 ..... $399.00
With Street Maps ..... P/N 11-12033 ..... $449.00

ADVENTURE PILOT IFLY 720 GPS

Sunny days are no issue with the iFly 720. Perfect for those bright open cockpits. Automatic Wi-Fi Updating. Connect to a Wi-Fi hotspot to enjoy fast and easy automatic data updates. iFly Streets™ is Included. Now you can go straight from the runway to the highway with iFly Streets™. The iFly 720 outperforms the competition with a faster dual-core processor and memory. An advanced power circuitry ensures clean power for the ultimate safety and stability. What's in the Box: iFly 720 Sunlight Readable Moving Map GPS, 12V-28V DC Adapter, 110V AC Power Adapter, Multi-point articulating suction mount, Remote control, Soft Case, and 2 months of VFR/IFR Updates. Note: When data on your iFly expires, you will use a Wi-Fi Internet connection or a USB Flash Drive to perform an update. Dimensions: 7.25" x 4.5" x 0.75". Screen Resolution: 800 x 480. Weight: 12 ounces. LCD Size: 7.0 inch. Power Requirement: DC 12V~28V. GPS Type: SiRF Star – III. Operating Temperature: 14°F to 140°F. Storage Temperature: -4°F to 176°F.
IFLY 720 GPS - Standard ..... P/N 11-10480 ..... $749.00
IFLY 720 gps - without Streets ..... P/N 11-11358 ..... $699.00

WXWEATHER FOR THE AV8OR AND AV8OR ACE

WX WEATHER BLUE TOOTH KIT -

This is the weather kit for the Honeywell AV8OR & AV8OR Ace. The connection for this is a bluetooth receiver (no cable required to interface the two units). Includes: Basic Receiver, Bluetooth Interface Module, Portable Antenna, AC & DC Adapter, Mounting Hardware
P/N 11-06712 ..... $573.00

WX WEATHER PORTABLE ANTENNA - Small and portable, the XM Radio antenna allows you to receive a satellite signal from XM Radio and XM WX Satellite Weather (subscriptions required). A 23-ft. cable ensures flexible installation to the WxWorx receiver via an SMA connection. The antenna features a magnetic mount that firmly affixes it to metal surfaces, with rubber feet to prevent scratching. NOTE: This antenna is not compatible with the original WxWorx receiver (Model WXP03).
P/N 11-06716 ..... $27.95

AUDIO CABLE - Code:AUDCAB ..... P/N 11-06729 ..... $15.75

WX WEATHER DC POWER SUPPLY - 50 ft. extension cable for the XM Digital Antenna Code:DCDC2 ..... P/N 11-06730 ..... $18.95

WX WEATHER DC POWER WITH PLUG - Code:DCDCLUGS
P/N 11-06731 ..... $19.50

WX WEATHER AC POWER SUPPLY - Code:ACDC2
P/N 11-06732 ..... $17.75

WXWORX on Wings WR-10 USB Bundle ..... P/N 11-10871 ..... $955.00

WXWORX on Wings WR-10BT BT Bundle ..... P/N 11-10877 ..... $1,056.00

WXWORX XM Weather Package for iPad ..... P/N 11-10885 ..... $955.00

WXWORX Mobile Link DC Power Cable ..... P/N 11-11228 ..... $9.95

WXWORX Baron Mobile link Wi-Fi Antenna ..... P/N 11-11229 ..... $9.95

AVMAP EKP V HANDHELD GPS

Fully Portable: A brilliant 7" display, with built-in battery and GPS, only 0.8" thick. EKP V is slim and light, yet very powerful: with built in u-blox 5 GPS receiver, built-in battery and speakers.
Offering full Connectivity: Thanks to the special Docking Station, you can connect EKP V to several on-board devices at the same time (autopilot, XM WX, CAS, EIS, EFIS etc.) so that the large 7" LCD becomes multifunctional and capable to display different flight info.
Fully Customizable: Easily change the layout choosing what to see and where to display it: maps, taws, weather, vertical profile on map, nav data, HSI, EFIS. Set different PROFILES for different aircrafts with different settings for taws, selective display and even different hard keys configurations.
User Friendly: The new practical keyboard includes a configurable key, a progressive jostick and a smart wheel selector. Ease of use is ensured by the new graphic interface and the full qwerty virtual keyboard.
The cartography for AvMap aeronautical products includes information from several sources: Background and land elevation, Terrestrial data, Marine objects, Jeppesen data, Low Airways (Victor Airways), Private airports, Vertical obstructions, VFR reporting points, And more!
P/N 11-09748 ..... $1,349.00

ACCESSORIES

Description	Part No.	Price
AVMAP EKP V With Docking Station Bundle	11-11494	$1,865.00
AVMAP EKP V EFIS Bundle	11-11495	$2,567.00
AVMAP EKP V Option Cockpit Cradle Kit	11-11131	$149.00
AVMAP EKP V Option Docking Station	11-11132	$285.75
AVMAP EKP V PC Interface Cable	11-11490	$27.95
AVMAP EKP Leg Strap	11-11487	$11.75
AVMAP EKP V Knee Pad Bracket	11-11486	$22.75
AVMAP EKP V Li-Ion Rechargeable Battery	11-11491	$42.75
AVMAP EKP V USB to Serial Cable	11-11492	$27.75
AVMAP EKP V Serial Cable	11-11493	$26.75
AVMAP EKP V & Geopilot II Plus Dash/Panel Mount	11-11496	$21.85
AVMAP EKP V & Geopilot II Plus Yoke Mount	11-11497	$35.50
AVMAP EKP V & Geopilot II Plus Suction Dash Mount	11-11498	$30.50
AVMAP EKP V & Geopilot II Plus Mounting Bracket	11-11499	$5.70
AVMAP EKP V A2 ADAHRS	11-11488	$899.95
Accessories for Geo Pilot II/Plus	Part No.	Price
Airgizmo Panel Dock for Geopilot II	11-05615	$96.95
Airgizmos Panel Dock for Geopilot II+	11-06855	$109.95
GPS Antenna for EKP-IV	11-01276	$49.75

AVMAP ULTRA - EFIS

Note: Units are pre-loaded with the North American POI database. Other available coverage areas are South America, Europe+Africa, and Asia+Australia. Contact AvMap directly after purchasing the Ultra EFIS for more details on loading your device with the other databases.
The AvMap Ultra EFIS is a stand alone device with a 3.5" ultra bright, Sunlight Readable LCD display. The unit is compact (only 1.95" / 49.5 mm installing depth) and ultra light: only 5.1 oz / 145 g while other products on the market are around 1 lb 9 oz / 700 g.
Ultra light, Ultra bright the compact standalone EFIS for a safe flight!
Developed with UAV Navigation, the AvMap Ultra is a compact EFIS providing reliable and advanced ADAHRS.
Fitting in a 84 mm (3.3") panel hole, the AvMap Ultra EFIS can be easily installed in your panel and be connected to the GPS receiver (included) and to the aircraft Pitot-static system to provide reliable and advanced ADAHRS.
Designed for light-sport, ultra light and experimental aircrafts, the AvMap Ultra EFIS contains solid-state gyros, accelerometers, magnetic field sensors, air data sensors and UAV Navigation motion processor, the outcome of more than 8 years of motion and flight control experience at UAV navigation.
Ultra EFIS 3.5" PFD screen displays: • Attitude (roll, pitch and heading) • Airspeed from Pitot-static system • Altitude from Pitot-static system • Wind • Side Slip • Vertical Speed. P/N 11-12004 ..... $1,199.00

BAD ELF GPS PRO

The Bad Elf GPS Pro was designed specifically for pilots, boaters, and other outdoor enthusiasts based on feedback we've collected since we launched the original dock-connected Bad Elf GPS back in 2010. We didn't want to launch yet another generic external Bluetooth GPS receiver like those on the market today — so we're not. Instead, we packed a ton of great next-generation features into a small, rugged, and affordable package: Connect up to 5 devices at a time via Bluetooth The real-time GPS data from a single GPS Pro can be used by up to 5 devices simultaneously – any combination of supported iPad, iPhone, or iPod touch devices. This is great for: Jet pilots: the entire crew can share the data from a single GPS Pro sitting on the glareshield or in the side window. Or share your GPS data with passengers in the cabin so they can follow the flight on their own iPads. General aviation pilots: use your iPhone or iPod touch as a backup for charts on your iPad, switching instantly if needed without re-pairing or connecting. Road trips: the whole family can share the GPS data from a single GPS Pro. Features: Large LCD screen with backlight • Extra-long battery life and 10Hz reporting rate • Standalone GPS datalogger (100+ hours) • Rugged and splash-proof to IPX4 standards • Works with all location-based Apps. • iPod touch (2nd, 3rd, & 4th generations) • iPhone 4S, iPhone 4, iPhone 3GS, & iPhone 3G • iPad (3rd generation), iPad 2, iPad. Specs: Fast GPS lock times (45 seconds or less) • 2.5 meter accuracy • 60k feet maximum altitude • 1000 MPH maximum speed • Up to 10Hz position update rate • 66-channel MTK GPS chipset • SBAS/WAAS/EGNOS/MSAS • Mini-USB port for charging and ElfPort expansion • 128x96 dot LCD screen with backlight • 100+ hour datalogger memory • Upgradeable Firmware • Dimensions: 3" x 2.4" x 0.7" (76.5mm x 61.5mm x 17.5mm) • Weight: 3.2 oz (90 grams)

P/N 13-12274 ..... $149.99

BAD ELF BLUETOOTH GPS PRO+

PX4 certified, rugged, and splash-proof. Don't be afraid to take your GPS Pro along on your next adventure. Compact, rugged, and splash-proof, the GPS Pro will survive the journey and then let you share with your friends your amazing trip. Works with all location-based apps.Bad Elf GPS Pro in the cockpit Apps galore. The Bad GPS Pro meets all requirements under Apple's MFi program, and works great with any location-based app in the App Store. To simplify your search for great apps, we've categorized many apps that we know work well with the Bad Elf GPS Pro by your favorite activities. We've tested the GPS Pro with all the major flight planning and aviation chart apps as well as many marine, fitness, car navigation, and golf apps.

P/N 13-15933 ..... $249.99

BAD ELF GPS FOR IPAD / IPHONE / IPOD 30 PIN CONNECTOR

iPhone not included.

Bad Elf provides GPS information to popular aviation apps using a high quality 66 channel WAAS GPS. It works with all iOS devices such as iPad, iPhone and iPod Touch. Bad Elf plugs into the bottom of the iPad or iPhone and includes a USB port which can be used to sync and charge the iPad or iPhone. Furnished with a detachable lanyard. Compatible with iPad 1 and 2, iPhone 3G, 3GS, 4GS, and iPod Touch 1G-4G. Specifications: 66-channel MTK GPS chipset, Fast GPS lock times Up to 10Hz update rate, SBAS/WAAS/EGNOS/MSAS Assisted GPS (when network available), Micro-USB port and 6ft cable provided for charging / syncing during use, App available to update satellite data and firmware, Max altitude: 60K feet, Max speed: 1000 mph.

P/N 13-10273 ..... $99.00

BAD ELF GPS / GLONASS RECEIVER FOR APPLE LIGHTNING CONNECTOR

The Bad Elf GPS gets rave reviews from the most demanding customers in military, commercial, and private aviation. More and more blue water and freshwater marine enthusiasts have chosen the Bad Elf GPS for their adventures. Add a high performance GPS and voice guided turn-by-turn application with the included upgrade of the CoPilot street navigation app for your iPod touch, iPad, or iPad mini (USA purchases only).

Made for These Apple Devices:
iPod touch (5th generation)
iPhone 5
iPad (4th generation)
iPad mini

P/N 13-14960 ..... $99.99

DUAL XGPS170 GPS +ADS-B WEATHER RECEIVER

Note: For use with WingX App.

Enhance your situational awareness and safety with the new XGPS170, Which provides ADS-B Traffic and Weather data directly to an EFB app on your iPad or Android tablet - without subscription fees.

FAA's ADS-B Weather and Traffic Information in the Cockpit Introduced more than a decade ago by the FAA, ADS-B (Automatic Dependent Surveillance-Broadcast) provides weather and traffic information to all aircraft equipped with an ADS-B receiver, such as the XGPS170, subscription-free. The portable XGPS170 ADS-B In receiver provides ADS-B weather and traffic broadcasts, to a variety of compatible EFB apps (sold separately), for display on an iPad or Android tablet.

Features: • ADS-B Weather (FIS-B) • ADS-B Traffic (ADS-R/TIS-B) • Use with the included removable antenna or connect to the aircraft's external antenna • Bluetooth wireless connectivity: Connects to up to two iPad devices simultaneously • Leaves each iPad free to connect to other devices/service via WiFi or Bluetooth • Apple and Android support • Works with WingX Pro7, EFB, i1000 Flight System, Digital Sectional. Watch for more major app announcements soon. • Built-in Rechargeable Battery lasts up to 5 hours of continuous use • WAAS GPS also works with apps for car & boating navigation and many others • 12-30V charger included to charge the receiver or the iPad • The receiver can also be charged using the iPad wall charger • Adjustable brightness LEDs for day and night flying • Includes a non-slip pad

Please note any ADS-B unit will operate within the USA only when in clear line of sight of an ADS-B tower (flying at a higher altitudes may be required to gain proper signal).

For more information please visit: http://www.faa.gov/nextgen/implementation/portfolio/trans_support_progs/adsb/

P/N 11-10844 ..... $525.00

DUAL UNIVERSAL XGPS150 RECEIVER WITH BLUETOOTH

The XGPS150 is very simple to use. There is a quick set up process that includes pairing your device with the Receiver. Once this is done, the Receiver will automatically connect to the device it was last paired with, and you will be able to use it with hundreds of apps that require location information. The XGPS150 also comes with a useful GPS Status Tool App (available free on the iTunes store, not required for the device to work). The App is a simple utility application for use with the XGPS150. It shows detailed information from the XGPS150 including: Your location (or whether the device is still determining where you are) How many satellites the device sees and the signal strength of each satellite. The battery level of the XGPS150, and whether or not it is charging. Confirmation the XGPS150 is successfully connected to your iPad/iPod touch/iPhone

P/N 11-09941 ..... $98.95

DUAL SKYPRO GPS RECEIVER XGPS160 FOR IPAD & ANDROID

GPS Receiver with fast signal acquisition and 10Hz positioning updates, making it an ideal GPS for pilots, race car drivers and other fast moving applications. The WAAS receiver is compatible with both GPS (USA) and GLONASS (Russia) systems and it connects via Bluetooth to up to 5 Apple or Android devices.

Very simple to use. There is a quick set up process that includes pairing your tablet with the unit. Once this is done, SkyPro will automatically connect to the device it was last paired with, and you will be able to use it with hundreds of apps that require location information. The GPS receiver will run for up to 10 hours on a charge, and can be recharged using the included 12-28VDC cigarette lighter adapter, from any PC, or from the USB charger which came with your tablet/phone. This GPS Receiver also comes with a useful GPS Status Tool app. (Available free on the iTunes App Store). The SkyPro GPS Receiver also includes a non-slip pad for use in a cockpit, car or a boat.

P/N 11-11996 ..... $149.00

JEPP SKYBOUND G2 ADAPTER

Required for Skybound updates. The Adapter utilizes USB technology found standard on most computers.

Minimmun System Requirements:
- Pentium 266MHz or faster CPU
- 32 MB RAM minimum
- 10 MB free disk space
- Microsoft Windows 2000 SP3, or Windows XP SP1
- Microsoft Internet Explorer 6.0 or better
- Internet Connectivity
- Available USB port

P/N 11-08787 ..... $69.95

GARMIN PANEL MOUNT

GARMIN GTN 650 GPS/NAV/COMM SYSTEM

Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness

Garmin is changing the course of aviation yet again! Introducing the GTN 650 "next generation" touchscreen avionics. This panel-mount unit is certified and approved for installation in hundreds of makes and models of general aviation aircraft. The GTN 650 has GPS/NAV/COM capabilities and new features like intuitive touchscreen operation, graphical flight planning, victor airway and high-altitude jet route navigation, remote transponder, SafeTaxi® and more.

Thanks to built-in terrain, mapping and obstacle databases, the GTN provides a greatly enhanced, high resolution presentation of the surrounding area. A built-in terrain elevation database shows color-coded alerts when potential terrain conflicts are ahead. Full Class B TAWS alerting is also available as an option. The SBAS/WAAS equipped GTN 650 series lets pilots fly GPS-guided LPV glidepath approaches down to ILS-comparable minimums. In addition, precise course deviation and roll steering outputs can be coupled to select autopilots so that IFR flight procedures may be flown automatically. This includes all ARINC 424 leg types, excluding RF legs (for example, when coupled with a G500/G600 Flight Display, the aircraft can fly fully coupled missed approaches, including heading legs).

Included:

Garmin GTN 650 System (Black)

Garmin GTN Americas Database or Garmin International Database

Garmin GA 35 WAAS Antenna

Garmin GTN Harness

For certified aircraft please see our partner USA avionics shops.

Pricing below is for an experimental aircraft only with harness.

Garmin GTN 650 Americas w/ harness ..... P/N 11-09702.....$9,825.00
Garmin GTN 650 International w/ harness..... P/N 11-09706.....$10,296.00
Garmin GTN 650 W/ Custom Harness..... P/N 11-12957.....$9,875.00

GARMIN GTN 625

Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness

Introducing the next generation of aircraft navigation. The GTN 625 is a 2.64-in.-tall standalone GPS navigator that puts a wealth of features – like high-resolution terrain mapping, graphical flight planning, traffic display and more – right at your fingertips. With the GTN 625's revolutionary new touchscreen interface, you're rarely more than two taps away from all of the system's primary functions. Traditional concentric knobs are also available for those who are used to that style of data input. The GTN family makes it easier than ever to get where you're going. Graphical flight planning capabilities allow you to edit your entire route using the map screen and easily enter new waypoints or modify existing ones. The system's robust 15-channel GPS receiver generates five position updates per second. Packed full of multifunction display capabilities, the GTN 625 brings enhanced situational awareness to your cockpit. With high-resolution terrain mapping – including topography features, cities, airports, terminal areas, SUAs and more – and optional Class B TAWS alerting, you'll find your way around the airspace safely and with ease. The system even allows you to load and follow Victor and jet airways. On the ground, built-in Garmin SafeTaxi® U.S. airport diagrams give you geo-referenced runways, taxiways, FBOs and hangars. Couple the system with a GDL™ 69 series datalink receiver and XM® subscriptions, you can overlay NEXRAD radar right onto your moving map display and receive satellite music. Or add a Garmin traffic system and pinpoint other aircraft in your vicinity. The GTN 625 can control the GTX™ 32/33 remote transponder, which could also save you valuable panel space. The GTN 625 features a front-loading SD™ card reader, so you can easily update your databases. In The Box: GTN 625, Cleaning cloth, SD card with databases, Installation kit, Simulation software DVD, Familiarization video DVD, Pilot's guide, Cockpit reference guide, Complimentary database update certificate. ..... P/N 11-09973.....$7,923.00
Garmin GTN 625 W/ Custom Harness..... P/N 11-12959.....$8,495.00

GARMIN GTN 750 GPS/NAV/COM SYSTEM

Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness

Packed full of powerful avionics, the GTN 750 is a fully integrated GPS/NAV/COMM solution. The 6-in.-tall system's intuitive touchscreen controls and large display give you unprecedented access to high-resolution terrain mapping, graphical flight planning, geo-referenced charting, traffic display, satellite weather and much more. Touch and Go - With the GTN 750's revolutionary new touchscreen interface, you're rarely more than two taps away from all of the system's primary functions. Navigate with Ease - The GTN family makes it easier than ever to get where you're going. Graphical flight planning capabilities allow you to preview your entire route on the map screen and easily enter new waypoints or modify existing ones. The system even lets you load Victor and jet airways. In IFR conditions, you now have more landing options, as well. The SBAS/WAAS-certified, 15-channel GPS receiver generates five position updates per second, enabling you to fly GPS-guided LPV glidepath instrument approaches down to as low as 200 ft. The system also includes a complete package of VHF navigation capabilities, with a 200-channel VOR/ILS with localizer and glidescope.

A fully certified, 2,280-channel VHF communications transceiver provides a standard 10 W (or optional 16 W) of power output. See More than Ever Before - With a wealth of multifunction display capabilities, the GTN 750 brings enhanced situational awareness to your cockpit. Couple the system with a GDL™ 69 series datalink receiver and XM® subscriptions, you can overlay NEXRAD radar right onto your moving map display and receive satellite music. Or add a Garmin traffic system and pinpoint other aircraft in your vicinity. The GTN 750 can even control the GMA 35 remote audio panel with clearance recorder, advanced auto squelch and more.

Garmin GTN 750 Americas w/ harness ..... P/N 11-09703 ..... $14,522.00
Garmin GTN 750 International w/ harness..... P/N 11-09704 ..... $14,528.00
Garmin GTN 750 W/ Custom Harness..... P/N 11-12960 ..... $14,595.00

GARMIN GMA 35 REMOTE AUDIO PANEL

Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness

Features: • Remote mounted for use with the GTN 750 series • 6 or 7 position intercom: pilot, copilot, 4 or 5 passengers • 3 stereo headset amplifiers: pilot, copilot and passengers • 2 stereo music source inputs • Up to 8 selectable intercom operational modes with synoptic intercom routing • Independent pilot, copilot and passenger intercom volume controls • Individual VOX processing for each MIC input • Automatic selection of radio audio source when corresponding MIC is selected • Automatic volume adjustments based on ambient sound levels • Flexible split COMM transceiver function. Copilot may transmit and receive on one COMM while pilot transmits and receives on another. • Marker beacon receiver P/N 11-12196 .....$2,825.00

GARMIN GTN 725

**Note: Per Garmin, Aircraft Spruce can only offer this product to experimental aircraft with harness

With its 6.9-in. (diagonal) display, intuitive touchscreen interface and wide range of multifunction display capabilities, the GTN 725 is so much more than just a GPS navigator. The 6-in.-tall system puts high-resolution terrain mapping, graphical flight planning, charting, traffic display, satellite weather and much more right at your fingertips. With the GTN 725's revolutionary new touchscreen interface, you're rarely more than two taps away from all of the system's primary functions. Traditional concentric knobs are also available for those who are used to that style of data input. The GTN family makes it easier than ever to get where you're going. The system even lets you load Victor and jet airways. The GTN 725 also allows you to enter your most recently visited or nearest airports as waypoints or "Direct-To" destinations. Built-in Garmin U.S. FliteCharts™ or optional Jeppesen®-style geo-referenced ChartView™, provides you with approach plates and procedures, while Garmin SafeTaxi® lets you see geo-referenced runways, taxiways, FBOs and hangars. The GTN 725's robust 15-channel GPS receiver generates five position updates per second. Packed full of multifunction display capabilities, the GTN 725 brings enhanced situational awareness to your cockpit. With high-resolution terrain mapping – including topography features, cities, airports, terminal areas, SUAs and more – and optional Class B TAWS alerting, you'll find your way around the airspace safely and with ease. Couple the system with a GDL™ 69 series datalink receiver and XM® subscriptions, you can overlay NEXRAD radar right onto your moving map display and receive satellite music. Or add a Garmin traffic system and pinpoint other aircraft in your vicinity. The GTN 725 can even control the GMA 35 remote audio panel with clearance recorder, advanced auto squelch and more. Use the GMA 35 and a GTX™ 32/33 remote transponder to save up to 3 in. of panel space versus a typical GNS 430/530 install.

P/N 11-09972.....$12,417.00
Garmin GTN 725 W/ Custom Harness..... P/N 11-12961.....$12,995.00

AV

GARMIN PANEL MOUNT

GARMIN G3X EFIS / EMS / GPS TOUCH SYSTEM

The G3X Touch is a large touchscreen glass flight display system designed for installation in experimental amateur-built and light sport aircraft (LSA). The non-certified G3X Touch system offers pilots easy-to-read, easy-to-use, high-resolution 10.6-inch flight displays with split-screen functionality and a host of advanced interface options – all at a great price.

Large Touch Display: A large 10.6-inch display. Since G3X Touch is scalable and easily configurable, pilots can choose to install up to three G3X Touch displays in their panel. Incorporating the latest in infrared touchscreen technology, the display offers a resilient, high-resolution, sunlight readable screen that demonstrates Garmin's industry-leading experience in integrated flight decks.

Enhanced Functionality and Situational Awareness: The G3X Touch display provides pilots with an intuitive split-screen mode with the option to view PFD, MFD, and engine information on a single display. Synthetic vision (SVX™) is a standard feature on G3X Touch, which provides a rich, three-dimensional depiction of terrain, obstacles, water features, the runway environment, and more.

Seamless Integration and Familiar Interface: G3X Touch interfaces with Garmin's industry-leading experimental autopilot, which gives pilots autopilot control through the touchscreen interface, while still supporting the optional, stand-alone GMC 305 autopilot control panel.

New Comm Radio and AOA Indicator Support: Tucked away behind G3X Touch, pilots can choose to integrate the new GTR 20 remote transceiver for added functionality. The GTR 20 offers pilots an ideal solution for a clear, powerful communication radio and intercom, which is controlled from the G3X Touch display. The 10-watt radio provides advanced features such as 3D audio, stereo intercom, stereo music input, alert inputs, and standby frequency monitoring. Even more, frequency identification is available on the G3X Touch display so identifiers such as "KOSH ATIS" are displayed as the pilot tunes the frequency. For pilots who have incorporated the GTR 200 panel mount comm radio into their panel, full touchscreen control is also available through G3X Touch. The combination of the remote comm transceiver and transponder provide pilots the option to fly VFR with everything they need controlled from the display of G3X Touch, saving space and offering an immaculate panel.

Steps	Garmin #	Description	Part No.	Price
1. Pick Your System	K10-00016-40	Single Display GDU 460 System With Out EIS	11-12636	$5,499.00
--	K10-00016-41	Single Display GDU 465 System With SXM W/O EIS	11-12637	$5,999.00
--	K10-00016-45	Single Display GDU 460 System With EIS	11-12638	$6,099.00
--	K10-00016-50	Single Display GDU 465 System With EIS & SXM	11-12639	$6,599.00
--	K10-00016-55	Dual Display GDU 460 System With EIS	11-12640	$9,399.00
--	K10-00016-60	Dual Display GDU 460/465 System With EIS & SXM	11-12641	$9,899.00
Connector Kit	010-12150-00	GDU 460/465 Install Kit	11-12646	$50.00
--	K10-00181-00	GSU 25 Connector Kit	11-11433	$50.00
--	011-02886-00	GEA 24 Engine Module Connector Kit	11-11434	$100.00
--	011-00871-10	GMU 22 Install Kit	11-12213	$75.00
2. Select Antenna(s)	010-11373-00	GA 26 XM (remote dash mount) Antenna	11-09466	$99.00
--	010-10052-04	GA 26C GPS (remote dash mount) Antenna Kit	11-00051	$74.50
--	010-11370-10	GA 57X GPS/SM (external mount) Antenna	11-09467	$225.00
3. Add Engine Probe Package	K00-00512-00	4 Cylinder Lyc/Cont Probe Kit	11-09469	$999.00
--	K00-00513-00*	6 Cylinder Lyc/Cont Probe Kit	11-09474	$1,250.00
--	K00-00514-00**	Rotax 912 Probe Kit	11-09476	$299.95
--	494-30004-02	Fuel Pressure (Injected), 50 PSIG, 1/8-27 NPT	11-09477	$109.50
--	494-30004-03	Fuel Pressure (Carbureted) / Coolant Pressure,	11-09478	$106.25
--	494-10001-00	Fuel Flow, 1/4" Female NPT	11-09479	$272.50
--	494-50005-00	RPM, Hall Effect, Slick magneto	11-09480	$99.75
--	494-50005-01	RPM, Hall Effect, Bendix magneto	11-09481	$98.75
--	909-D0000-00	Ammeter, Shunt, +/-50 mV, 100 amps	11-09482	$33.65
--	494-70002-00	TIT, Type K thermocouple, 7/16-20, bayonet	11-09483	$85.75
--	494-70005-00	Carb Temp, RTD, 1/4-28	11-09484	$75.00
4. Add Transponder for Remote Mode S (Optional)	GTX 23	Remote Mount GTX 23 Mode S Transponder	11-10001	$2,199.00
5. Add Com for Remote Radio	010-01076-01	GTR 20 Remote Comm Radio for G3X Touch Only	11-12647	$995.00
6. Add Autopilot	GSA 28	GSA 28 Single Autopilot Servo	11-11450	$750.00
--	011-02950-000	GSA 28 Connector Kit	11-12171	$24.75
--	010-01068-00	GSA 28 Capstan Kit	11-11436	$149.00
--	011-02952-00	GSA 28 Servo Install Kit Without Mount Bracket	11-11437	$45.00
--	011-02952-01	GSA 28 Servo Install Kit Wit Mount Bracket	11-11438	$75.00
RV Aircraft Servo Packages	011-02952-10	GSA 28 Servo Install Kit for RV 6 Roll	11-11440	$75.00
--	011-02952-11	GSA 28 Servo Install Kit for RV 4 & 8 Pitch	11-11441	$75.00
--	011-02952-12	GSA 28 Servo Install Kit for RV 7, 8 & 10 Roll	11-11442	$75.00
--	011-02952-13	GSA 28 Servo Install Kit for RV 9 Roll	11-11443	$75.00
--	011-02952-14	GSA 28 Servo Install Kit for RV 6, 7 & 9 Pitch	11-11444	$75.00
--	011-02952-15	GSA 28 Servo Install Kit for RV 10 Pitch	11-11445	$75.00
7. Add Autopilot Control Panel	010-01169-00	GMC 305 Autopilot Control Panel	11-11446	$750.00
--	010-12034-00	GMC 305 Install Kit	11-11447	$50.00
8. Add ADS-B Weather	--	GDL 39 Portable ADS-B Receiver With Bare Wire Cable	11-10730	$599.00
9. Add Pitot Tube & AOA	010-01074-00	GAP 26 Unheated Pitot Tube	11-11448	$199.00
--	010-01074-10	GAP 26 Heated Pitot Tube	11-11449	$299.00
--	010-01074-20	GAP 26 Heated & Regulated Pitot Tube	11-12973	$449.00
--	--	PBK-12 PAINTABLE GRETZ BRACKET	10-01820	$102.95
--	010-01287-00	GI 260 Angle of Attack Indicator for G3X or G3X Touch	11-12648	$249.00
10. ARINC Interface	010-01172-00	GAD 29 ARINC Interface	11-11454	$425.00
--	011-03271-00	GAD 29 Connector Kit	11-11455	$50.00
11. Pick Wire Harness	--	G3X VFR Harness EFIS/EMS 4CYL CON/LYC	11-09485	$825.00
--	--	G3X IFR Harness EFIS/EMS 4CYL CON/LYC	11-09486	$885.00
--	--	G3X VFR Harness EFIS/EMS 6CYL CON/LYC	11-09487	$905.00
--	--	G3X IFR Harness EFIS/EMS 6CYL CON/LYC	11-09488	$985.00
--	--	G3X VFR Harness EFIS/EMS Rotax	11-09489	$685.00
--	--	G3X IFR Harness EFIS/EMS Rotax	11-09490	$745.00
--	--	G3X VFR No Engine Data Harness	11-09709	$585.00
--	--	G3X IFR No Engine Data Harness	11-11293	$635.00
--	--	G3X Screen Add-On Harness	11-12273	$95.00
--	--	Garmin G3X Auto Pilot Harness	11-11294	$275.00

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

GARMIN PANEL MOUNT

GARMIN GNS 430W

All-in-one GPS/Nav/Comm solution. It features a WAAS-certified GPS, 2280-channel capacity comm and 200-channel ILS/VOR with localizer and glideslope. High-speed 5 Hz processing makes navigation calculations and map redraw rates five times faster than earlier GNS series navigators.

Built-in WAAS navigation capabilities. It is approved to fly LPV "glideslope" approaches without reference to ground-based navaids of any kind. Featuring an advanced 15-channel receiver capable of five position updates per second, GNS 430W meets the FAA's stringent TSO C146a standards for WAAS "sole means" navigation — providing vertical and lateral approach guidance into thousands of U.S. airports previously inaccessible in IFR conditions.

4-inch high-contrast display with brilliant colors makes it easy to read and interpret pilot-critical information. Conveniently scan information from wide viewing angles, even in direct sunlight.

Integrates built-in terrain and navigation databases, providing a clear, concise picture of where you are and where you're heading. The 430W's huge Jeppesen® database, updated with front-loading data cards, contains location reference for all airports, VORs, NDBs, Intersections, Flight Service Stations, published approaches, SIDs/STARs, Special Use Airspace and geopolitical boundaries.

GNS 430W with harness (Exper. A/C)..... P/N 11-06750.....$8,522.00
GNS 430W/530W Wiring Harness..... P/N 11-06749.....$695.00
Navishield 430 Screen Protector..... P/N 05-04224..... $12.95
Flight Plan Migrator Kit..... P/N 11-07592.....$418.50
Flight Plan Data Card..... P/N 11-07593.....$324.00
Power Simulator Cable..... P/N 11-04870..... $55.95

The Garmin GNS 530W/430W can only be sold over the counter to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Garmin Dealer.
Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

GARMIN GPS 400W

Provides big-picture situational awareness and a host of interface capabilities. A color moving map and includes the popular features of the GNS 430 — minus the nav and comm. Upgrade GPS 400 with WAAS navigation capabilities. Easy to interface with a wide array of optional sensors and tracking systems. Optional subscription to XM WX Satellite Weather™ and the addition of the GDL 69 or 69A datalink receiver, you'll have access to high resolution weather for the U.S., right in the cockpit. Additional monthly service fee, the GDL 69A delivers XM Satellite Radio to your aircraft. Add the Garmin GTX 330 Mode S transponder, and GPS 400 will also display Traffic Information Services (TIS) alerts that identify surrounding air traffic.

P/N 10-05512.....$6,295.00

GARMIN 430 GPS GOAL PAGE SET-UP TRAINING MANUAL

This spiral bound book contains over 300 pages of clearly described procedures for the operation of the Garmin GNS-430. From updating the data system to shut down each phase of operation is explained with full color screen shots to help students relate to the real unit..... P/N 17-00050..... $65.50

JEPPESEN INTERACTIVE 530/430 TRAINERS

Computer based training program for the pilot who wants an audio-visual, hands-on way to quickly master the Garmin 530/430 GPS. Windows and Mac compatible.

Jeppesen GNS 530/430 Advanced
P/N 13-05645.....$114.75
Jeppesen GNS 530/430 Interactive
P/N 13-05644.....$133.75
Jeppesen GNS 530/430 Training ..... P/N 13-05646.....$114.75

GARMIN GTX 330 ES TRANSPONDER

Note: Sold with harness. Cannot be sold without harness.

A panel-mounted Mode S digital transponder series with traffic datalink capability and dedicated pushbutton keys for squawk code selection. With IFR-certified ES, or Extended Squitter, versions of the GTX 330, this offers an affordable pathway to ADS-B compliance for the Next Generation airspace system. Enables transponders to automatically transmit more accurate, and more useful, traffic surveillance data. Certified to TSO-C166b, authorization for 1090 MHz extended squitter transmission. The ADS-B reports provide ground controllers with considerably faster updates than traditional radar

All the features of the standard GTX 330 transponder are retained in the ES version. Unit dimensions, WxHxD: 6.25"W x 1.65"H x 11.25"D (15.9 x 4.2 x 28.6 cm). Weight: 4.2 lb (1.9 kg). In the Box: GTX 330/330D transponder, Installation Kit, and Pilot's Guide.

GTX 330 with harness..... P/N 11-10850.....$4,147.00
GTX 330 W/ Custom Harness ..... P/N 11-12955.....$4,180.00

GARMIN GTX 330 MODE S TRANSPONDER

Note: Sold with harness. Cannot be sold without harness.

A Level 2 Mode-S transponder with exciting datalink traffic capabilities. Sharing the same keypad & digital display with the popular GTX 327, the GTX 330 adds to the features with an outside air temperature display (temp. input required), altitude monitor with voice audio alert, and density altitude computations (temperature input required). But the real excitement lies in the GTX 330's datalink traffic capabilities through the FAA's Traffic Information Services. GTX 330 promises to deliver effective traffic information to the GA cockpit in busy terminal environments at a fraction of the cost of current traffic systems. The TIS system is available through 124 Mode-S Traffic Control radar sites throughout the U.S. Aircraft within a 60nm (expected to increase to 90+nm) radius of a Mode-S radar site will receive traffic advisories and warnings from ATC via Mode-S datalink, and this info will be displayed on Garmin 400/500 series products. This system will display 8 nearest targets within a 7nm radius and ±3,500 feet of the aircraft. Pilots will receive both visual traffic information (via 400/500 series products) and radio alerts of traffic in the area. The GTX 330 meets all requirements of the Mode-S mandate in Europe, which requires Mode-S for IFR traffic by 2003 and all VFR traffic by 2005. GTX 330 will be offered in diversity & non-diversity models to meet the requirements of a variety of aircraft and operations. The GTX 330D (diversity model) is the first panel-mount diversity-model transponder available. 2 year warranty.

The GTX 330 can only be sold over the counter to experimental aircraft owner's with a pre-wired harness.
Please call 1-800-826-3160 for partner shop location for certified installs.
(price of installation not included)

Description	Part No.	Price
GTX-330 Mode S Transponder w/ Harness	11-05893	$3,488.00
GTX 330 W/ Custom Harness	11-12954	$3,495.00

GARMIN GTX 327 MODE C TRANSPONDER

With the intro of the GTX 327, Garmin revolutionizes a part of the panel that has been long overlooked. This full-featured, TSO certified transponder brings a unique level of functionality and utility to your airplane.

Its solid state transmitter provides 200 watts nominal power output and eliminates the need for a cavity tube which will eventually fail and require expensive replacement. And since the GTX 327 design is 100% solid state there is no warm up time, lower power consumption and lower heat emission. All of which translates to a longer service life. Some of the GTX 327 biggest features are the easiest to see. Among them, the easy-riding DSTN Liquid Crystal Display which reverses yellow numbers out of black for optimal viewing. An innovative keypad makes entering a squawk code a snap. And a dedicated VFR button allows for quick and easy 1200/VFR squawking. The GTX 327 also offers two important timing functions.

The first screen shows the current time and count up timer. The second indicates flight time and a count down timer. Together they represent a whole new standard in transponder utility.

GTX 327 with Harness.....P/N 11-00329.....$1,840.00

GARMIN GTX 328 MODE-S TRANSPONDER

Note: Sold with harness. Cannot be sold without harness.

Designed exclusively for Europe, GTX 328 satisfies the European requirement for a Mode S solution that meets the reduced certification requirements for the VFR Mode S mandate. GTX 328 is intended to serve VFR/Class 2 aircraft where there is adequate size and power consumption support for a GTX 328 unit and is a straightforward retrofit. GTX 328 offers the same great value, reliability and innovation that pilots and aircraft owners have come to know from Garmin — at an affordable price..... P/N 11-05275.....$2,565.00
Garmin GTX 328 W/ Custom Harness ..... P/N 11-12956.....$2,615.00

For a quote on complete custom panels for experimental aircraft please email: avionics@aircraftspruce.com

AV

GARMIN GTR 225/ GNC 255 VHF NAV/ COM RADIOS

As the replacement products for the popular SL30 and SL40 models, the GTR series COM transceivers and GNC series NAV/COM radios include a breadth of new features to reduce pilot workload, while also offering an affordable solution to meet the requirements of the 8.33 kHz channel spacing mandate recently enacted by the European Union under the Single European Sky (SES) initiative. The SES mandate aims to enhance safety and efficiency of air transport in Europe by tripling the number of channels available for aircraft communications. This mandate requires all European aircraft using European airspace to be equipped with 8.33 kHz radios by December 31, 2017. Select GTR and GNC models offer both 25 kHz and the 8.33 kHz operational capabilities required to comply with the law. The GNC series NAV/COM radios offer all of the same COM features, while also adding navigation capability with VOR/ILS with Glideslope. The GNC series works well with select Garmin flight displays including the G500, G600, G500H and G3X to display the NAV indicators in the primary field of view, and can integrate with most autopilots. The GTR and GNC series are more powerful than their SL-series predecessors with versions available with 10- or 16-watt transmit power. The GTR 225 includes 10 watts of transmit power and 25 kHz frequency spacing. All products in the series have received the Federal Aviation Administration's (FAA) Technical Standard Order (TSO) authorization.

GTR 225 Com 10W with 5 ft. Harness.....P/N 11-11351 .....$1,797.00
GTR 225A Com 8.33 KHZ 10W with Harness.....P/N 11-11352 .....$2,583.00
GTR 225B Com 8.33 KHZ 16W with Harness.....P/N 11-11353 .....$3,493.00
GTR 225 COM with Custom Harness .....P/N 10-05721 .....$1,895.00
GTR 225 COM without Harness .....P/N 11-11345 .....$1,795.00
GNC 255A Nav/Com 8.33 KHZ 10W with Harness
P/N 11-11354 .....$3,943.00
GNC 255B Nav/Com 8.33 KHZ 16W with Harness
P/N 11-11355 .....$4,788.00

GARMIN GTR 200 PANEL MOUNT COM RADIO

The GTR 200 panel mount comm radio for experimental and light sport aircraft that offers a slim design and powerful features, including advanced auto-squelch, 3D audio, stereo intercom, stereo music input, alert inputs, best-in-class standby frequency monitoring, on-screen frequency identification, and much more. The GTR 200 is the first to integrate advanced audio panel features like a two place auto-squelch stereo intercom, which senses the amount of sound in the cockpit and automatically adjusts the mic squelch for effortless intercom use regardless of the cockpit noise level. With its advanced integration with the Garmin G3X glass flight display, or other compatible Garmin portable products, the GTR 200 is able to receive a frequency and identifier in the comm's standby position directly from the G3X's waypoint page, allowing the pilot to ensure accurate transfer and reduce workload.

Description	Part No.	Price
Garmin GTR 200 Com Radio - Standard Kit	11-11999	$1,199.00
Garmin GTR 200 Com Radio - Standard Kit + Harness to Audio Panel	11-12085	$1,264.00
Garmin GTR 200 Com Radio - Standard Kit + 2-Place Harness with Jacks Attached	11-12003	$1,296.00
Garmin GTR 200 Com Radio Standard Kit + Custom Harness	11-12084	$1,395.00

This is for experimental aircraft use only. Standard Kit comes with Rack, Connector Kit, and Back plate. "Standard Kit + Harness" model includes all the same + the harness.

GARMIN GMA 240 AUDIO PANEL

Non-TSO'd so it's priced really low. Yet, it includes an intercom and will support dual COMM, dual NAV, dual AUX receivers, and dual music audio inputs – plus up to three unswitched inputs for telephone ringers, altitude alerts, or other warning tones. Pilots can connect up to two dedicated music sources to the rear connector (e.g. XM music and CD player) and override one of those sources at any time by plugging-in a device (e.g. MP3 player) into the 2.5 mm front jack. The music source's volume can be increased or decreased with the GMA 240 by pulling out the copilot volume knob. The 2.5 mm front jack also makes it easy for pilots to make and receive cell phone calls. It has a full-duplex telephone interface with intercom isolation capability. Specifications: * Weight: 15.5 oz (440 g) * Dimensions: 1.3" x 6.29" x 7.12" * Power: Input voltage range: 11-33 Vdc, 4.3 W normal * Temperature range: -20C to +55C * Altitude: 55,000 MSL unpressurized * Transceiver inputs: 3 (including TEL) * Receiver inputs: 4 * Alert inputs: 3 * Input impedance: 500 Ohms * Input isolation: 60 dB min * Bandwidth: 100 Hz to 6.5 kHz * Music inputs (stereo): 2 * Music gain: -20 dB @ min. volume, +26 dB @ max. volume

P/N 11-06619 .....$845.00

GARMIN GMA 340 AUDIO PANEL

The Garmin GMA 340 audio panel is compact and lightweight, making it an excellent choice for panels with limited space. Audio panel features include 3 transceiver inputs, 5 receiver inputs, and 2 unswitched inputs. The intercom provides 6 positions, 3 volume controls, 2 VOX level controls, 6 VOX circuits, and 2 stereo music imputs. This unit features 3 stereo headphone outputs and 2 speaker outputs, and the marker beacon receiver features input impedance of 50 ohms. Size: 6.8"d x 6.29"w x 1.3"h. Power req.: 11-33 VDC

GMA 340 Audio Panel.....P/N 11-18960 .....$1,295.00
GMA 340 with basic harness.....P/N 11-08061 .....$1,319.00
GMA 340 with Harness (4 place).....P/N 11-07170 .....$1,843.00

GARMIN GMA 350 AUDIO PANEL

Note: Per Garmin we cannot sell the GMA 350 to certified aircraft. For experimental aircraft please contact us for the wire harness form that is required and allow 2-3 weeks to ship.

The first truly all-digital audio panel, Garmin's GMA 350 introduces a number of new technologies to the cockpit, including voice recognition, 3-D audio processing, advanced auto squelch and more.

Features: Intuitive front panel layout with cursor control and volume indicator. Six/Seven position intercom: pilot, copilot, four or five passengers. Three stereo headset amplifiers: pilot, copilot, and passengers. Two stereo music source inputs Five selectable intercom operational modes. Independent pilot, copilot, and passenger volume controls. Individual VOX processing for each mic input. Automatic selection of radio audio source when corresponding mic is selected. Split COM transceiver function. Copilot may transmit and receive on one COM while pilot transmits and receives on another. Voice recognition. Automatic audio adjustment for ambient noise. 3-D Audio. Marker beacon receiver with lamp driver outputs.

GMA 350 Audio Panel.....P/N 11-09667 .....$2,195.00
GMA 350H Audio Panel .....P/N 11-09668 .....$2,246.00
GMA 350 With Custom Harness.....P/N 11-12963 .....$2,395.00
GMA 350H With Custom Harness .....P/N 11-12964 .....$2,550.00

The Garmin GMA 350 can only be sold over the counter to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Garmin Dealer. Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

GARMIN GTN 635 GPS / COM SYSTEM USA

TThe 2.64" GTN 635 puts high resolution terrain mapping, graphical flight planning, multiple weather options and traffic display right at your fingertips. GTN 635

Features: • GPS TSO'd to C146c, authorized for Class 1,2,3 (LPV) • GPS WAAS-certified to Gamma-3 approach capability • WAAS-corrected GPS signal accuracy to 1 M RMS • graphical flight planning (including airway navigation) • VHF COMM transceiver: 8.33 or 25 kHz channel spacing • com transmit power: 10 W standard, 16 W optional • extensive optional interface capabilities: lightning, weather, traffic and TAWS-B terrain alerting • integrated control/display for remote transponder • flight control system interface for select autopilots • optional XM WX Satellite Weather and SiriusXM Satellite Radio • SafeTaxi® airport diagrams • award-winning product support and 2-year warranty • Unit dimensions, WxHxD:6.25"W x 2.65"H x 11.25"D (15.9 x 6.7 x 28.6 cm) • Display size, WxH: 4.46"W x 1.98"H (11.33 x 5.02 cm); 4.9" diag (12.4 cm).

GTN Unit Only.....P/N 11-11281.....$8,668.00
GTN Unit and Harness.....P/N 11-11282.....$9,218.00
GMA 635 With Custom Harness.....P/N 11-12958 .....$9,245.00

GARMIN GI 102A & GI 106A CDI'S

Call For Special Price!

The GI 102A and GI 106A course deviation indicators (CDI) from Garmin feature rectilinear meter movements, resolver output for GPS interface, and internal GPS mode annunciation & VLOC. Works with the Garmin 430W, 530W, & SL 30. The 102A is VOR/LOC CDI and the 106A is VOR/LOC/GS CDI. Size: 3.25"w x 3.25"h x 4.625"d. The GI 102 is designed for VFR use. The GI 106A is designed for IFR installations.

GI 102A CDI .....P/N 11-18980.....$2,079.00
GI 106A CDI .....P/N 11-05768.....$2,256.00

AV

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

KING KSN 770 INTEGRATED SAFETY NAVIGATOR

An affordable, WAAS-Enabled, Integrated MFD with a flexible hybrid user interface. Features: • High-res VGA display (5.7" diagonal, 5.25" high). • Hybrid user interface • Electronic charts and maps. • WAAS GPS enroute and approach navigation system. • **TCAS and Radar, **TAWS and Stormscope. • XM WX interface. • 10W COM with optional high-power 16W COM.-Digital radio core • Analog and digital inputs/outputs. • EPIC/ APEX FMS Core. • Simple to use • Affordable pricing • Enhanced ground proximity warning system (option). • Nav/Com (10W Com with 16W option).....P/N 11-12340.....$10,575.00

SILVER CROWN KX 165 NAV/COM

Solid state, 760 frequency COMM transceiver, 200-channel NAV receiver, 40 channel glidescope receiver and built-in VOR converter, 10W, 14V. Simultaneous, digital, gas-discharge display of active and standby NAV & COMM frequencies or select digital display of radial from the VOR or VORTAC in lieu of standy NAV frequency. Push button frequency flip-flop. Meets DO-156 frequency selectivity requirements.

14V.....P/N 11-03399.....$5,427.00
28V.....P/N 11-00199.....$5,667.00

SILVER CROWN KX-165A NAV/COM SYSTEM

Large, self-dimming, microprocessor-controlled gas discharge readouts and solid-state electronic tuning provide fast, accurate selection of all 200 Nav & 760 Comm frequencies. On the COMM side, the KX165 system gives you 10W minimum transmitter power for maximum range and clarity. And on the NAV side, the KX165's useful 'Radial' feature offers you an instant readout of the radial you're on (from the 'active' VORTAC station), digitally displayed in the 'standby' NAV frequency window. The KX-165A is TSO'd and offers 32 channels of com frequency memory, an additional CDI mode. The GPS "Quick Tune" feature allows the pilot to select and remotely tune the standby com & nav freq. from the KLN94 GPS 28V.....P/N 11-00644.....$5,047.00

SILVER CROWN KX-155 / 155A NAV/COM

Both the NAV and COMM frequency displays incorporate the popular "flip-flop" preselect feature. This function allows pilots to set up en route or approach frequency changeovers well in advance of the actual transition point of ATC handoff sequence, for true "stay ahead" flight management.

By selecting the NAV and COMM frequency in the "Standby" (STBY) display, pilots can "flip-flop" it into "active" status at the press of a button.

Large, self-dimming, microprocessor controlled readouts and solid-state electronic tuning provide fast, accurate selection of all 200 NAV and 760 COMM frequencies. Both the KX 155 and KX 165 feature a built-in 40-channel glideslope receiver. Both model are also available without the glideslope.

KX 155 NAV w/KI208 Indicator (14V) ..... P/N 11-03403.....$5,275.00
KX 155 w/GS & KI209 Indicator (14V)..... P/N 11-03404.....$6,132.00
KX 155 w/GS & KI209 Indicator (28V)..... P/N 11-03406.....$6,185.00
KX 155 NAV w/KI208 Indicator (28V) ..... P/N 11-03405.....$5,587.00
Approach KX-155 NAV Cable..... P/N 11-05668.....$139.95

CROWN KX 125 DIGITAL NAV/COM

The KX-125 is ideal as a replacement radio, a primary system for homebuilts or a very affordable back-up. pDespite its low price, it comes with a complete list of features. For example, its COMM section provides 760 frequencies, 'flip-flop' frequency selection, a built-in audio amplifier with sidetone and audio leveling, direct tuning, stuck-microphone alert, and even remote transfer of both COMM and NAV frequencies. Its separate NAV section offers 200 frequencies, including localizer.

14V.....P/N 11-03402.....$4,053.00
With Harness.....P/N 11-05026.....$4,410.00

CROWN KI SERIES INDICATORS

The KI203, KI208, KI204, & KI209 indicators feature an internal VOR/ LOC converter and are compatible with the KX155 transceiver. The KI203 & KI204 have rectilinear meter movement, while the KI208 & KI209 feature pivot needle action. The KI206 has rectilinear meter movement and works with the KX165 & KNS80. The KI209 includes GPS interface capability. Size: 3.125" x 8"D; Weight: 1.5lbs.

KI 203 NAV Indicator..... P/N 11-03407.....$2,782.00
KI 204GS Indicator..... P/N 11-03408.....$3,152.00
KI 209A GS Indicator..... P/N 11-03409.....$1,775.00
KI 208 NAV Indicator..... P/N 11-00876.....$1,392.00
KI 208A 14/28V with install..... P/N 11-07599.....$1,695.00
KI 209 GS Indicator..... P/N 11-00878.....$1,567.00
KI 206 GS Indicator..... P/N 11-04209.....$2,532.00
Approach KI 204 Indicator Cbl..... P/N 11-05669.....$154.95

BENDIX/KING KT 74 TRANSPONDER

The KT 74 transponder from Bendix/King is the easiest upgrade to the popular KT 76A/C and KT 78A models, with a 'plug and go' capacity. And it's ADS-B compliant, therefore meeting all 2020 requirements. It is low-cost, easy to install and fits into your existing panel. Suiting your needs now and in the future.

KT 74 ADVANTAGE: • Retrofit - 'plug and play' installation • Low-cost solution that will offset future costs • Low power consumption • ETSO and TSO approved Mode S • Accurate readings with updates every few seconds • More efficient routing and better situational awareness • Meets ADS-B 2020 requirements*.....P/N 11-12038.....$2,649.00

CROWN KY 96A & KY 97A COM

Bendix/ King has designed the KY 96A and KY 97A to operate on 760 frequencies from 118.00 MHz to 136.975 MHz. You can switch between active and standby frequencies. Simply tune the desired frequency into the standby window ("STBY") while monitoring the "USE" channel-when the time is right, simply push the frequency transfer button to transfer the standby frequency into the active window. A remote switch may be installed as an additional means of providing the "flip-flop" function. Up to nine channels can be easily programmed by the pilot into the memory of the KY 96A or KY 97A. The KY 96A & KY 97A remember displayed frequencies and stored frequencies without batteries or external hookup during power shutdown or in the event of a power interruption and have an easy-to-read, illuminated LCD display.

KY 96A (28V) .....P/N 11-03411.....$3,072.00
KY 96A (28V) With Harness.....P/N 11-03849.....$3,154.00
KY 97A (14V) .....P/N 11-03410.....$3,442.00
KY 97A Unit only P/N 11-02583 .....$3,166.00
KY 97A (14V) With Harness.....P/N 11-05028.....$3,407.00

Accessories

King Install Manual KY96A/97A .....P/N 11-18005..... $231.95
KY 96A / KY 97A Install Manual CD.....P/N 11-02374..... $5.95
Harness ONLY for KY 96A.....P/N 11-04021..... $235.95
Approach KY 96A / 97A COM Cable.....P/N 11-05666..... $102.95

CROWN SERIES KT-76A MODE C TRANSPONDER

The KT76A is a panelmount, class 1-A transponder and provides maximum performance at any altitude up to 35,000 ft. A compact unit with Large Scale Integrated (LSI) circuitry, reducing both weight and power requirements. All Mode A & Mode C transponders perform the same functions: replying to radar interrogations, providing Air Traffic Control (ATC) with positive identification, and showing your ground speed on the Controller's radar monitor. If you have an encoding altimeter or blind encoder, the transponder will transmit your altitude as well.

KT76A 06 14V (Transponder) .....P/N 11-02438.....$1,889.00
KT76A 06 14V With Harness .....P/N 11-02436.....$2,148.00
28V Dropping Resistor .....P/N 11-00913..... $142.95
Replacement Bulb Container.....P/N 11-00522.....$19.95

KING SILVER CROWN KT 76C MODE C TRANSPONDER

The unit features a bright, gas plasma display that shows the selected transponder code and, in a new feature, the encoder altitude output.The KT 76C will fit directly into the existing location of a KT 76A. However, in 28V installations the existing dropping resistor must be bypassed. Unit operates from 11-33VDC. Available with or without antenna.

Without KA 61 Antenna.....P/N 11-03413.....$3,011.00
Without KA 61 Antenna With Harness.....P/N 11-05034.....$3,085.00
With KA 61 Antenna Without Harness.....P/N 11-03414.....$3,204.00
With KA 61 Antenna With Harness.....P/N 11-05033.....$3,278.00

SILVER CROWN KY 196A & KY 197A COM

This unit measures a trim 1.3" x 6.3" and weighs just 2.8 lbs. The 28V KY196A delivers 16W minimum transmit output power and the 14V KY197A delivers 10W minimum transmit output power. Both units incorporate solid-state construction, with a digital frequency synthesizer generating all COMM frequencies. Total frequency storage capacity is eleven, including those in "USE" and "STBY". The 118.00MHz to 136.975MHz range of the KY-196A & KY-197A provide 760 COMM frequencies. An audio leveling feature automatically amplifies weak audio signals and mutes strong signals.

KY 197A (14V) .....P/N 11-03848.....$6,190.00

Honeywell Crown Series can only be sold over the counter. Silver Crown series can only be sold to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Honeywell Dealer. Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

AV

SILVER CROWN KMA 24 AUDIO PANEL

Bendix/King's easy-to-use KMA 24 & KMA 24H systems are self-contained, all solid-state and stand only 1.3" high in your Silver Crown stack. The "slant top" package tailors it for the top slot in your instrument panel. KMA 24 controls as many as 3 transceivers and 6 receivers, including the internal marker beacon receiver and its automatically dimmed 3-light presentation. KMA 24H controls up to 5 transceivers and 5 receivers, or 4 transceivers and 6 receivers. KMA 24H includes the internal marker beacon receiver & VOX intercom, which provides unprecedented flexibility.

KMA 24 with HF Auto ..... P/N 11-03381 ..... $2,088.00
KMA 24 with Tel Auto ..... P/N 11-03382 ..... $1,732.00

CROWN KR 22 AUDIO PANEL

The Bendix/King KR 22 Marker Beacon Receiver is a fully independent panel-mounted unit with its own audio output and self-test feature. The unit is all solid-state, and its compact size makes it an easy fit in virtually any panel.A crystal-controlled superheterodyne receiver and 3-light presentation ensures that the KR 22 will give precise visual and aural indications of marker beacon passage. Excellent receiver selectivity eliminates interference. Headphone audio is provided, or if speaker output is desired, the KR 22 may be interfaced with the KA 134 or other audio control panel. P/N 11-03843 ..... $1,438.00

BENDIX KING KMA 30 AUDIO PANEL

The KMA 30 is a convenient "slide in" replacement for select older audio panels. Saves the expense of re-wiring the entire avionics suite. Music and phone Bluetooth® capability provides unsurpassed audio flexibility throughout your airplane. Makes it simple for the pilot to control audio throughout the aircraft. Can even turn music on or off for the pilot while in isolate mode. Delivers full, duplex telephone capability.

KMA 30 ..... P/N 11-11262 ..... $1,829.00
Installation Kit ..... P/N 11-11263 ..... $93.75

Honeywell Crown Series can only be sold over the counter. Silver Crown series can only be sold to expermental aircraft (must verify) with harness. For certified aircraft, it must be installed by a Honeywell Dealer. Please call 1-800-826-3160 for partner shop location for certified installs. (price of installation not included)

MICHEL TKM SLIDE-IN REPLACEMENT RADIOS

MX 11R COM

The MX 11 Comm is designed as a slide in replacement for the Narco Com 11, Com 11B, Com 111, Com 111B, and Com 120. The unit will replace the com 10 and Com 110 when the Nav 10 and Nav 110 are not used in the system. The MX 11 is warranted for 2 years. The MX 11 is the same unit as the earlier MX \-11 except it does not come with the tray. P/N 11-18815 ..... $1,041.00

MX 12 NAV/COM

Direct replacement for Narco MK12A Nav/Com. P/N 11-18846 ..... $1,875.00

GLIDESLOPE ADAPTER CABLE FOR MX 12

Direct replacement for Narco MK 12 P/N 11-18847 ..... $153.95

MX 170C NAV/COM

An ideal Nav/Com unit to replace King KX 170 & 175 series Nav/Coms. 14VDC. Features active & standby display w/flip-flop capability, plus storage capability in Nav and Com.

P/N 11-18830 ..... $1,862.00

MX 300 NAV/COM

The MX 300 Nav/Comm is designed to replace the RT 328T, RT 308C, RT 328T, RT 328A, RT 528A, RT 328C, RT 528E, RT 328D, and RT 508A. The MX 300 is available in the black face plate shown above or in a beige face plate to match many Cessna panels. The MX 300 operates on 13.75 vdc with 7 Adc maximum current in transmit.

With Black Face Cover ..... P/N 11-18835 ..... $1,763.00
With Tan Face Cover ..... P/N 11-04825 ..... $1,865.00

MX 385 NAV/COM

MX 385 is a direct replacement for RT385 & RT485 series Nav/Com units. Features active & standby displays w/flip-flop capability plus storage in Nav & Com.; 28VDC.

Black Face ..... P/N 11-18845 ..... $1,863.00
Tan Face ..... P/N 11-09203 ..... $1,865.00

Note: All Michel radios are furnished standard with black face. Tan face for Cessna panels are available at same prices on special order.

AV

KING KI208A-10 VOR/LOC INDICATOR

The KI 208A VOR/LOC Indicator with VOR/LOC Converter and GPS Switching Relays has internal lighting. Internal relays allows from switching between VHF Nav and GPS. It is used with the KX 155 or KX 155A and KLN 89, KLN 89V, or KLN 94. Specifications: * Weight: 1.00 lbs. (0.45 kg) * Width: 3.25 in. (8.26 cm) * Power Required: 14/28 VDC @ 60 mA max. * Height: 3.25 in. (8.26 cm) * Length: 8.00 in. (20.32 cm) * Lighting Power: 14/28 VDC P/N 11-07599 ..... $1,695.00

KING INSTALLATION KITS

Model	Part No.	Description	Price
KMA 20	11-00897	Installation Kit	$528.00
KMA 24	11-00898	Installation Kit	$146.75
	11-00909	Mounting Tray	$170.90
KMA 24H-52	11-00899	Installation Kit	$189.95
	11-00909	Mounting Tray	$170.90
KMA 24H-70/71	11-00902	Installation Kit	$180.95
	11-00903	Mounting Tray	$152.75
KA 51B	11-00904	Installation Kit	$227.95
KN 53	11-00905	Installation Kit	$163.95
	11-00906	Mounting Tray	$334.00
KN 62A/64	11-00908	Installation Kit	$203.95
	11-00925	Mounting Tray	$403.00
KN 63	11-00929	Mounting Tray	$50.55
KN 72	11-00930	Installation Kit	$148.95
KT 76A	11-00912	Mounting Tray	$131.75
	11-00913	28 Volt Kit	$142.95
KT 76A / 76C	11-00935	Installation Kit	$177.75
KNS 80	11-00937	Mounting Tray	$327.00
KR 86	11-00940	Installation Kit	$1,015.00
KR 87	11-00942	Installation Kit	$425.00
	11-00943	Mounting Tray	$145.95
KLN 90B	11-00944	Installation Kit	$275.95
	11-00945	Mounting Tray	$408.00

Model	Part No.	Description	Price
KY 96A/ 97A	11-00914	Installation Kit	$153.75
	11-00915	Mounting Tray	$259.95
KG 102A	11-00947	Installation Kit	$749.00
KMT 112	11-00946	Installation Kit	$179.85
KX 125	11-00916	Installation Kit	$257.95
	11-00948	Mounting Tray	$226.95
KA 134	11-00986	Installation Kit	$117.95
	11-00949	Mounting Tray	$342.00
KLX 135	11-00053	Installation Kit	$181.75
	11-00950	Mounting Tray	$242.95
KX 155/165	11-00951	Installation Kit	$188.75
	11-00952	Mounting Tray	$85.75
KX 155/165 GS	11-00919	Installation Kit	$177.95
KX 170/170B/175B	11-00954	Installation Kit	$1,113.00
	11-00955	Mounting Tray	$340.00
KY 196/197	11-00957	Mounting Tray	$519.00
KY 196A/197A	11-00914	Installation Kit	$153.75
	11-00915	Mounting Tray	$259.95
KI 203 thru 207	11-00958	Installation Kit	$175.95
KI 208/209	11-00922	Installation Kit	$151.95
KI 209A	11-02342	Installation Kit	$191.95
KI 525A	11-00959	Installation Kit	$226.95
KDI 572	11-00961	Installation Kit	$210.95
	11-00962	Mounting Plate	$43.50

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Charts. Weather. Traffic. GPS.
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Actually, it's the combination of our premium Garmin Pilot™ iOS® app with the new GDL 39 3D portable ADS-B datalink[1]. Together, they not only enable you to view subscription-free graphical weather, TargetTrend™ traffic, and a backup attitude display – but now, they can also bring a whole new perspective to your iPad® navigation with our exclusive SVX™ 3-D synthetic vision. Database terrain details are clearly depicted, along with airport environments, obstacles, towers, traffic targets and more – all shown in relative proximity to your aircraft. In short, it's like having a clear-day "out the window" view from your cockpit – to aid situational awareness even in reduced-visibility conditions.

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To learn more, visit Garmin.com/ADS-B

©2014 Garmin Ltd. or its subsidiaries [1]NOTE: The GDL 39 3D is a non-certified receive-only product. It does not provide ADS-B 'Out' capability to satisfy FAA mandate requirements. Manufacturer's suggested retail pricing for the GDL 39 3D is $849.

For builders and pilots who want the big picture. Without the big pricetag.

Garmin G3X™ Touch makes it easy to install the perfect glass layout for your panel. Able to interlink up to three 10.6" touchscreen displays in your panel, our G3X™ Touch is a breakthrough in both configurability and affordability. Starting at just **$5,499** for a single screen[1], this versatile system uses the same connector found on Garmin's 7" G3X displays. So, it's "plug-and-play" simple to upgrade. Other highlights include standard SVX™ synthetic vision, GPS, ADAHRS, video input and EIS interface – plus options for autopilot, angle of attack and more[2]. There's also split-screen functionality that lets you pair PFD and MFD views on the same display – with smaller inset windows for optional weather, traffic, mapping, and video. Garmin G3X™ Touch: Inspired technology in the Team X tradition.

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[1]Manufacturer's suggested retail pricing (add GEA 24 engine indication (EIS) for an additional $600.)

[2]EIS engine monitoring, AOA indication, Garmin G3X autopilot, optional GMC 305 autopilot control panel and VIRB™ Elite aviation camera all sold separately.

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VIRB™ is the word for pilots who want to capture the pure adventure of flight. Hands-free. In crisp, clear 1080p HD. The VIRB Elite™ aviation camera mounts easily in your aircraft. And it's loaded for action with digital image stabilization, automatic distortion correction, prop filter, wireless remote control, headset audio cable, 3-hour battery life and more. VIRB from Garmin. Your ultimate flight recorder.

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A hands-on innovation in GPS flight navigation.

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To learn more, visit Garmin.com/aviation. Or see your Garmin dealer. Or tell Santa you've been extra good this year.

GARMIN®

D2 pilot watch

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[1]NOTE: This feature is only available with tablets that are Bluetooth Low Energy (BLE) compatible.

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When it comes to experience in touchscreen avionics, our GTN™ 750/650 series is in a league all by itself. Evolved from thousands of Garmin glass systems, this integrated GPS/Nav/Comm/MFD platform gives pilots the technology to make quicker, smarter, easier decisions in all phases of flight. It offers full WAAS LPV approach capability, preloaded FliteCharts® and SafeTaxi®[1], plus a wide range of display capabilities and inputs—including optional Doppler-enhanced onboard weather radar, digital autopilot interface, datalinks for worldwide weather, traffic alerting, voice/text messaging, position reporting, and more. There's also onscreen control for remote transponder and audio panel functions[2]—plus a GTN Trainer app you can download to preview the GTN on your iPad®.

To find out more, see your Garmin dealer or visit Garmin.com/aviation.

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[1]Initial U.S. FliteCharts® will disable when data is over 6 months out-of-date. Updates available on single-cycle or annual basis.
[2]Transponder and audio systems sold separately. Remote audio panel functions available on GTN 750 series only.
NOTE: GTN 750 shown with optional Garmin ChartView™, displaying Jeppesen JeppView™ charts.

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This year, we've reintroduced our flagship system with the addition of SkyView Touch. With a full set of buttons and joystick knobs for precise control in turbulence, SkyView Touch is designed to reduce your workload so you can just Go Fly.

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ICOM PANEL MOUNT TRANSCEIVERS

ICOM A210 25 COMM TRANSCEIVER

Note: Unit is not TSO'd (non-certified) A210 25 Comm Transceiver (replaced version A210 21). New version is now capable of 25kHz and 8.33kHz channel pitch. The new A210 25 will use the CS A210 version 1.3. Older software will not work for programming the new versions. The software is backwards compatible. Innovative airband that's easier to install and see in more places! Large, bright OLED display offers many advantages in brightness, vividness, high contrast, wide viewing angle and response time compared to a conventional display. Easy channel selection allows you to monitor two channels simultaneously. GPS memory function. 12V/24V DC power source. Intercom functions. The IC-A210 has a built-in voice activated intercom function allowing the pilot to talk with the copilot via the headset. The IC-A210 has adjustable audio level and squelch control functions. Easy installation. The IC-A210 neatly fits inside the common mounting brackets used on most airplanes including Icom's IC-A200. Two types of rear-panel adapters are included, allowing for streamlined plug-in connectivity.

Description	Part No.	Price
ICOM A210 Panel Mount	11-05618	$1,125.00
ICOM A210M Mobile Mount	11-05836	$1,379.00

ICOM HM-176 MICROPHONE

The iCOM HM-176 is the compatable microphone for the A210 A200 PS80. Works best with the A210 Air band panel mount transceiver with intercom and OLED display. PN 11-05618 P/N 11-06208 ..... $142.95

ICOM A210 ADAPTER MB113

MB-113 Rear Panel Adapter - For installation into a D-sub 15-pin connection system equipment.
P/N 11-08413 ..... $66.50

ICOM PS-80 BASE STATION POWER SUPPLY

The PS-80 offers quick, easy installation of the IC-A210 in one compact desk-top unit that combines a power supply, speaker, microphone, headphone and antenna connectors. Power Supply is user selectable for 110 or 220/240 V AC operation and supports a full 7 Watt transmitter output. Large internal speaker booms out 5 watts of audio. Microphone, headphone and antenna connectors are standard in the PS-80 so no wiring is necessary. Just plug in your selected hand or desktop microphone or headphone and outside antenna and youre on the air. Optional SM-6 Desktop Microphone, HM-7 or MIC Hand Microphone and B-ANT Base Station Antenna to complete the package are available and sold separately. Radio not included (use 11-05839 for complete system) Specifications: * Input voltage: * 117 V AC +/- 10%, * 220 V AC +/- 10%, or * 240 V AC +/- 10% (selectable) * Output voltage: 13.8 V DC +/- 5% (negative ground) * Output current: 6 A * Duty rate: 1 hour for maximum current * Ripple voltage: Less than 20 mV rms * Useable Temperature Range: -10°C to +40°C; +14°F to +104°F * Dimensions (projections not included): 200(W) x 200(H) x 300(D) mm; 7.9(W) x 7.9(H) x 11.8(D) in * Weight: 6.0 kg; 13.2 lb

Icom PS-80 Base Station Only.....P/N 11-00802..... $749.00
Icom IC A210 COM Panel Mount(not TSO'd) .....P/N 11-05618.....$1,125.00
Icom IC A210 & PS 80 Base Station.....P/N 11-05839.....$1,999.99
Icom A210B PS-80 Microphone .....P/N 11-18581..... $289.95
Base Station Antenna for Mounting Model B Antenna on top Buildings
P/N 11-18581..... $289.95

ICOM IC-A110-05B VHF AIR BAND TRANSCEIVER

The Icom IC-A110-05B is rugged and reliable for serious ground crew communications. The IC-A110-05B can plug right into an AC wall (110W) receptacle. Great for FBOs. The unit features a front mounted speaker, free from any obstacle blocking and puts out 10W of power for the external speaker. *Covers the 118-136.975 frequency range. Features: * Equipped EEPROM system provides maintenance free memory backup capability, without the use of a separate backup battery * Various scan functions, such as VFO and priority scans are available * Limited number of keys for simple manipulation, but providing advanced multi-functions * A total of 20 memory channels are available * 36 W (pep) of powerful output, 9W (Carrier) output. * Excellent durability to cope with even the toughest workplace Specifications * Dimensions: 150(W)x 50(H) X 180(D) mm * Weight: 1.5kg; 3lb. 5 oz. * Warranty 2 years * Power supply requirement: 13.75 VDC and 27.5 VDC * Current drain: Transmitting: 5.0 A max, Receiving: 4.0 A * Operating temperature range: IC-A110(-30° C to +60° C); IC-A110EURO(-20° C to +55° C) * Frequency stability: IC-A110 (5 ppm)

Icom IC-A110-05B Base Station.....P/N 11-02781 .....$1,099.99
Icom B-ANT Building Antenna.....P/N 11-18581 ..... $289.95
Icom K220A Magnetic Mount Car Antenna.....P/N 11-06196..... $59.75
Icom K220C Hole Mount Car Antenna.....P/N 11-06197..... $48.50
Icom OPC-871 Headset Adapter.....P/N 11-06198 .....$123.95
Hand Microphone for A110.....P/N 11-08864 ..... $39.75

ICOM IC-A110-25 VHF AIR BAND TRANSCEIVER BASE STATION

The Icom IC-A110-25 is rugged and reliable for serious ground crew communications. The IC-A110-25 can be installed in any vehicle and is adaptable to vehicles working on 12V or 24V power sources. The unit features a front mounted speaker, free from any obstacle blocking and puts out 10W of power for the external speaker.*

In The Box: IC-A110-25, Hand Mic HM-161, Mounting Bracket with hardware, DC power cable, and Mic mounting bracket

Features: Additional to the predominantly used 25 kHz channel spacing, an extra version complying to new regulations is available for 8.33 kHz channel spacing. Equipped EEPROM system provides maintenance free memory backup capability, without the use of a separate backup battery. Various scan functions, such as VFO and priority scans are available. Limited number of keys for simple manipulation, but providing advanced multi-functions. A total of 20 memory channels are available

Ideal compact size of 150(W) x 50(H) x 180(D) mm* to mount in various types of vehicles. * 5-29/32(W) x 1-31/32(H) x 7-3/32(D) in. 36 W (pep) of powerful output. Excellent durability to cope with even the toughest workplace. Memory channel only operation possible via PC programming. Hand microphone supplied

Icom ICA110-25 Panel Mount..... P/N 11-04352 .....$999.99
Icom K220A Magnetic Mount Car Antenna ..... P/N 11-06196 ..... $59.75
Icom K220C Hole Mount Car Antenna ..... P/N 11-06197 ..... $48.50
Icom OPC-871 Headset Adapter..... P/N 11-06198 .....$123.95
Icom B-ANT Building Antenna ..... P/N 11-18581 .....$289.95
BNC female to UHF Male Adapter..... P/N 11-09556 ..... $16.50
BNC male connect RG 58 ..... P/N 11-03992 .....$2.85
Hand Microphone for A110.....P/N 11-08864 ..... $39.75

MID-CONTINENT INSTRUMENTS AND AVIONICS INSTRUMENTS GPS ANNUNCIATORS

MD41-1510

MD41-1468A

MD41-1408A

Vertical View

With fingertip annunciation and flight information in the pilot's primary view, Annunciation Control Units (ACU) offer important features in an efficient design. As an interface with popular NAV and GPS systems, the ACU provides vital safety information including waypoint, approach status and integrity alerting. Approved to strict TSO standards, Mid-Continent Instruments and Avionics ACUs are engineered as a compact, affordable solution to the challenge of installing several switches. Most versions are configured 14V or 28V with vertical or horizontal mounting and feature long-life lamps with automatic photocell dimming.

GARMIN WAAS ACU - GNC 420W, GNS 430W/530W			
Model No.	Configuration	Part No.	Price
MD41-1510	28V Horz. for Garmin GTN650/750	10-04768	$1,165.00
MD41-1512	14V Horz. for Garmin GTN650/750	10-04769	$1,165.00
MD41-1464A	Horizontal, 14V (head only)	10-02665	$1,118.00
MD41-1468A	Horizontal, 28V (head only)	10-02663	$1,118.00
MD41-1474A	Vertical, 14V (head only)	10-02666	$1,118.00
MD41-1484W	Horizontal, 14V WAAS	10-02657	$679.00
MD41-1488W	Horizontal, 28V WAAS	10-02659	$679.00
MD41-1494W	Vertical, 14V WAAS	10-02660	$679.00
MD41-1498W	Vertical, 28V WAAS	10-02661	$679.00

GPS 400/500, GNC 420/520, GNS 430/530			
MD41-1404A	Horizontal, 14V (head only)	10-02669	$1,108.00
MD41-1404A	Horizontal, 14V (with remote relay)	10-02670	$1,895.00
MD41-1408A	Horizontal, 28V (with remote relay)	10-02667	$1,895.00
MD41-1418A	Vertical, 28V (head only)	10-02672	$1,148.00
MD41-1418A	Vertical, 28V (with remote relay)	10-02671	$1,895.00

FLIGHTLINE FL-760 TRANSCEIVER

One of the smallest and lightest in the industry! 2-1/4" Panel Mount Transceiver; compact size but loaded with what you need in your aircraft, with a one year warranty.

Features: Flip Flop Frequency Selection, Built-In 2-Place VOX Intercom, Backlit Display, 32 Programmable Memory Channel Call-Up, 5 w Carrier, 16 w PEP, 25 KHz Channel Spacing, One Year Limited Warranty, Non-TSO

Specifications;

- Frequency range : 118.00 to 136.975MHz (Receive:108.00 to 136.975MHz)
- Channel spacing : 25kHz
- Number of memory channels : 32
- Acceptable power supply : 11.7 V or 33 VDC (Negative ground only)
- Current drain : TX: 3A(max) RX 0.8A(max) Standby: 300mA
- Dimensions : W61 X D159 X H61 (mm)
- Weight : 430g/14.11oz
- Exposed dial face : 56.4mm 2 1/4.5 inches
- Certification: Not TSO
- Output power : 5 W (carrier), 16W (pep)
- Modulation : small stage modulation
- Audio output power : More than 4W (at 4)
- Audio output impedance : Ext. SP 4 (4 to 8), Side tone 600
- 2-1/4" panel mount P/N 11-06307 ..... $699.00

FLIGHTLINE FL-M1000AB BASE STATION

FL-M1000A Air Band Land Radio installed in an Astron Base Station.

The FL-M1000A is an Air Band Land Mobile Radio designed for land vehicles, or base station use, not for Aircraft. The radio can be operated with Hand Microphone or Headset. You can choose audio output from External Speaker and/or Headphone. The radio has various built-in Scan functions.

Features: Convenient Base Station Enclosure, Easy to read alpha/numeric display, Scanning, Usable in the 760 Channel VFO mode Simple to program, Compatible with a standard Push-to-Talk Switch and Air Band Headset, Priority scanning, Multiple speakers, antennas, cables and programming options, Front panel control of external speaker. Hand Mic is included. P/N 11-09190 ..... $895.00

FLIGHTLINE FL-M1000A AIR BAND RADIO

FL-M1000A Air Band Land Radio installed in an Astron Base Station.

The FL-M1000A is an Air Band Land Mobile Radio designed for land vehicles, or base station use, not for Aircraft. The radio can be operated with Hand Microphone or Headset. You can choose audio output from External Speaker and/or Headphone. The radio has various built-in Scan functions.

Features: Installs in any vehicle, Easy to read alpha/numeric display, Scanning, Usable in the 760 Channel VFO mode, Simple to program, Compatible with a standard Push-to-Talk Switch and Air Band Headset

Priority scanning, Multiple speakers, antennas, cables and programming options, Front panel control of external speaker. Hand Mic is included.

M1000A Radio ..... P/N 11-09189 ..... $565.00
Hand Microphone for M1000A ..... P/N 11-11381 ..... $144.75

DITTEL KTX2 MODE S TRANSPONDER

In Mode S operation in busy airspace it can cause some 10,000 queries per minute. In this case, the transponder will respond accordingly and frequently increasing the total energy consumption. In the technical data we provide to you data you can trust when you designing a battery-operated system. Installation is quite simple. The panel cutout corresponds to the standard 57 mm. The body length of only 144 mm allows plenty of room for the handling in full panels and greatly simplifies the installation. The installation of a level encoder may be omitted. KTX2 has already an integrated high-precision pressure sensor. About the data interface an opportunity is given for GPS data for 'extended squitter' to get ADS-B send out. For an ADS-B receiver on KTX2 an additional ADS-B antenna connection is available, making the necessary antenna module is redundant. In conjunction with a so called 'Traffic Monitor' you then get a professional collision warning system. Such accessory is currently under development and will be available soon. There is of course also the possibility to connect an already available 'Traffic Monitor' system to the KTX2.

P/N 11-12423 ..... $1,898.00

STX 165 MODE AIRCRAFT XPDR

The STX 165 Sports a professional 1/2 3ATI Bezel that compliments any aircraft panel. Its bright OLED display is readable in virtually all lighting conditions and automatically dims for night time operations. Check out just a few of the STX 165 features.

- Built-in Encoder: Simplifies installations and lowers cost.
- Three Timer Functions: Elapsed Flight Time, Up Timer, Down Timer
- Pressure Altitude Display: See what altitude your transponder is reporting to Center
- Optional OAT Probe Input: Displays Outside Air Temp.,Density Altitude, Icing Alert
- Small and Light Weight: 7.4" behind the panel depth, 1.3 lbs.

Specifications:

- Electrical Input Voltage: 11-33 Vdc
- Current Requirements: 500mA@28Vdc
- Power Output: 200 Watts Nominal
- Transmitter Freq: 1090 MHz
- Receiver Freq: 1030 MHz
- Receiver Sensitivity: -74dBm Nominal at 90% reply rate
- Dimensions: 1.78"H x 3.5"W x 7.34"L
- Weight: 1.30Lbs
- Alt. Encoder: Built-in 35K' Encoder; External RS-232
- OAT Probe: Sandia STP 78 (Optional)
- Temperature: -20 degrees to +55 degrees C
- Altitude: -1000 to 35,000 Ft.
- Certification: DO160F; DO178B Level C; TSO C74d; TSO C88a

Sandia STX 165 Panel Mount ..... P/N 11-09251 ..... $1,585.00
Sandia STX 165R Remote ..... P/N 11-09252 ..... $1,495.00
Sandia STX 165 OAT Option ..... P/N 11-09253 ..... $329.00

GARRECHT TRANSPONDER CLASS 1 AND CLASS 2

VT01 UltraCompact

The Garrecht Transponder VT-01 is a flexible and modular system concept, in a compact size (57mm) with a very low current and integral alticoder. Available as Class-1 (125 Watt) or Class-2 (71 Watt) System. Specifications: Cetification i.a.w: ETSO-2C112a, ED-73B

•Min. RF Output power @ Antenne: Class 1: 125 Watt Class 2:71 Watt. • Integral alticoder: Yes • Weight control unit: 0,21 kg. •Weight main unit: 0,61 kg •Supply voltage: 9-32 V DC • Power consumption (operation) @ 13,8 V (1200 Mode A/C or 50 Mode-S replies): Class 1: 0,24 A Class 2:0,22 A • Power consumption (on Ground) @ 13,8V (Squitter active): Class 1: 0,17 A Class 2: 0,16 A • Power consumption (Standby) @ 13,8 V: 0,005 A •Interfaces: RS232 + CAN •OPERATIONAL LIMITS • Max. Altitude: Class 1: 40.000ft Class 2: 15.000 ft (4.572 m) • Max. TAS: Class 1: 250 kts (463 km/h) Class 2: 175 kts (324 km/h • MTOW: Class 1: 5.700 kg Class 2: 5.700 kg

Transponder Class 1 ..... P/N 11-04529 ..... $2,595.00
Transponder Class 2 ..... P/N 11-04530 ..... $2,647.00
Transponder UltaCompact Class 1 ..... P/N 11-05869 ..... $2,420.00
Transponder UltaCompact Class 1 ..... P/N 11-05870 ..... $2,309.00

DITTEL KRT2 VHF TRANSCEIVER

The KRT2 VHF-AM transceiver has a full graphic LC-display that allows for easy reading under all light conditions, including full sun. Push button and display illumination can be dimmed. The KRT2 is, of course, prepared for 8.33 kHz spacing that will become the new international standard for airborne communication. Switching between the 8.33 and the 25 kHz mode is therefore made effortlessly simple. Standard or dynamic microphones can be used. A built-in-test facility increases flight safety. The dual watch mode that allows scanning of two different channels is included. The KRT2, with its integrated VOX/Intercom circuit, allows communication between pilot and co-pilot. Specifications: • Frequency Range: 118.000 MHz to 136.990 MHz • Channel Selection: 8.33 or 25 kHz (select automatically) • RF-Output Power: >6 W (carrier power) • Receiver Sensitivity: >12 dB sinad @ 2 uV • Input Voltage Range: 9 V DC to 36 V DC • Operating Temperature Range: -20°C to +55°C, for short time up to +70°C • Current Consumption: 1,6 A@12 V DC (transmit), 110mA@12 V DC (receive standby) • Certification: ETSO-2C169a, ED-23B Class 4, C, TSO-C169a, Class 6, H1 & H2 • Function: dual watch mode, integrated VOX/Intercom • Weight/dimensions: 360g /65 x 65 x 144 (+plugs) mm.

Transceiver ..... P/N 11-10691 ..... $1,350.00
Harness with open end ..... P/N 11-10692 ..... $109.75
Harness with jacks for dual seat ..... P/N 11-10693 ..... $131.75
Swan Neck Mic ..... P/N 11-10694 ..... $109.00

AV

USED AVIONICS FROM AIRCRAFT SPRUCE

Virtually all these avionics are in "Serviceable" condition. This is an FAA term that means that the radios have been repaired as needed, tested according to the manufacturer's procedure, and meet the manufacturer's performance specifications. These radios are legally approved for installation and use. These radios come with either a Yellow Tag or a 8130-3 Serviceable tag. Both tags certify that the radio is in "Serviceable" condition. The difference is the geographical area where the tag is accepted. The Yellow Tag is accepted in North America, while the 8130-3 tag is accepted worldwide. Generally 8130-3 tags are issued for our radios, because we rarely know exactly where it will be sent when it is in the shop. With an 8130-3 tag, we know that it can be used by any of our customers. Serviceable units carry a 90 day warranty. All used avionics are subject to availability, and will be shipped with the tray and connector included. Prices can vary. Please specify 14V or 28V when ordering.

Please call for price and availability.
Used avionics data bases are for North America Only.

3M	
3M WX-10 Stormscope	11-06005
3M WX-10A Stormscope	11-06006
3M WX-11 Stormscope	11-06007
3M WX-8 Stormscope	11-06008
ARC	
ARC (Cessna) IN-385A	11-06009
ARC (Cessna) IN-386A	11-06010
ARC (Cessna) IN-514B	11-06011
ARC (Cessna) IN-525B	11-06012
ARC (Cessna) R-446A ADF Receiver	11-06013
ARC (Cessna) RT-328T NAV / COMM	11-06014
ARC (Cessna) RT-359A Transponder	11-06015
ARC (Cessna) RT-385A NAV / COMM	11-06016
ARC (Cessna) RT-459A Transponder	11-06017
ARC (Cessna) R-485B NAV / COMM	11-06018
ARC (Cessna) R-443B Remote Glideslope Receiver	11-06019
ARNAV	
ARNAV STAR 5000 VFR GPS Navigator	11-06020
CENTURY	
Century NSD-360A Non-Slaved Compass System (HSI)	11-06021
Century NSD-360A Slaved Compass System (HSI)	11-06022
COLLINS	
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Narco DME-890 DME	11-06145
Narco ID-824 VOR / LOC Indicator	11-06146
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ALTITUDE ALERT – SANDIA SWITCHES/RELAYS

AIRSPORT ALTITUDE ALERT

Perfect model for pilots that fly at less than 18,000 ft. Pilots love our new extremely bright 32 character Vacuum Fluorescent Display. This IFR/VFD displays altitude from 0 to 99,900 ft and your Target Altitude is selectable to 17,900 ft. Barometric Pressure is adjustable from 27.90 to 31.21 inches Hg. Pressure Altitude, Density Altitude, MDA and many more features.

Features:

- 32 character Vacuum Fluorescent Display provides brighter images for viewing ease. 8 day/night brightness levels are pilot adjustable.
- Altitude displayed 0 to 99,900 ft.
- Target Altitude selectable 100 ft to 17,900 ft.
- Squawk Code always displayed.
- Approach function with gear reminder, MDA warning, and more.
- MDA adjustable from 100 ft to 17,900 ft.
- Digital Rate of Climb, resolution of 1 fpm.
- Mode A/C Reply count - provides information about the radar environment and TCAS.
- Barometric Pressure 27.90 to 31.21 inches Hg.
- Density Altitude displayed -8900 ft to 25,200 ft.
- Pressure Altitude displayed -1200 ft to 126,700 ft.
- Operates on 14/28 volts, or about 8 hrs on internal rechargeable battery.
- Includes: IFR/VFD, 14/28v Cigarette Lighter Cord, 110v Charger, Audio Cord, Velcro, User's Manual, and protective Carrying Case.
- Non-TSO'd

P/N 11-11147 ..... $675.00

TRANS-CAL NANO ADAPTER PLATE ACK

Trans-Cal Industries has developed Adapter Plates that allow the technician to quickly replace existing or legacy encoder installations in favor of the new Trans-Cal SSD120-(XX)N series of altitude digitizer/encoders. These plates simplify the installation task by providing an adapter designed for the Trans-Cal unit, while utilizing the exisiting mounting tray. All adapter plates include stainless steel mounting hardware and are approved for installation under TSO-C88a and ETSO-C88a

Adapter Plate	Part No.	Price
ACK	11-09603	$23.95
Ameri-King	11-09605	$23.95
Sandia	11-09602	$23.99
Shadin	11-09604	$23.99
SSD120 and Narco	11-09601	$23.95

SANDIA SRU MODULE ENCLOSURES

The SRU 1 is a single card enclosure which accepts any MARC70 interface module. The SRU 1 is ideally suited for installations where only one MARC70 card is required or where there is limited real estate for mounting the larger enclosures. The SRU 1 can be mounted in any axis and either inside or outside the pressure vessel.

SRU 1 ..... P/N 11-11325 ..... $174.99

The SRU 5 is a multi-card enclosure that accepts up to five MARC70 interface modules. The SRU 5 can be mounted either inside or outside the pressure vessel. When less than five interface modules are used with the SRU 5, cover plates are placed over the unused card slots. If additional cards are required at a later date, the cover plates can be removed and the appropriate interface card installed. When installing the SRU 5 ample room should be allowed for both connector clearance and for inserting and removing the interface modules. The SRU 5 as well as the interface modules can be mounted in any axis.

SRU 5 ..... P/N 11-11326 ..... $375.00
SRU5-1 ..... P/N 11-11327 ..... $375.00

The SRU 10 is multi-card enclosure that accepts up to ten MARC70 interface modules. It is ideally suited for installations that will require more than five interface modules. As with the SRU 5, unused slots are covered with cover plates included in the installation kit. These extra slots can be used on future installations, eliminating the need for additional mechanical engineering and approval. The SRU 10 can be installed either inside or outside the aircraft's pressure vessel. For installation flexibility, the SRU 10 and the installed interface modules can be mounted in any axis. Ample room should be allowed for both the connector and for inserting and removing the interface modules.

SRU 10 ..... P/N 11-11328 ..... $555.00

SANDIA SA 3 REGULATOR INCANDESCENT DIMMING MODULE

Regulator/Dimming Board. Provides .5 amps of annunciator drive for lighting display annunciator. Will provide 1 amp short term for test purposes. Switchable between bright and din with both modes field adjustable.

P/N 11-11314 ..... $535.00

SANDIA SA 3L REGULATOR LED DIMMING MODULE

Regulator/Dimming Board. Provides 0.5 amps of annunciator drive for lighting LED annunciators. Will provide 1 amp short term for test purposes. Switchable between bright and din with both modes field adjustable.

P/N 11-11315 ..... $535.00

SANDIA SA 15 SIGNAL INVERTER MODULE

Inverter Board converts a High to a Low or a Low to a High to provide common annunciator power. 14 inverter outputs. P/N 11-11317 ..... $530.00

SANDIA SA 24 DIODE ISOLATION MODULE

Diode Isolation Module. Provides 23 lines of diode ground in - ground out isolation. Internal FET allows simultaneous test of all lines to ground. Requires 28 Vdc for test

P/N 11-11318 ..... $430.00

SANDIA SR 263 DUAL 6 POLE RELAY MODULE

Two, six pole nitrogen filled relays. Can be activated simultaneously or individually

P/N 11-11319 ..... $3,100.00

SANDIA SR 343 TRIPLE 4 POLE RELAY MODULE

Three, four pole nitrogen filled relays. Can be activated simultaneously or individually.

P/N 11-11320 ..... $4,990.00

SANDIA SR 623 SIX 2 POLE RELAY MODULE

This SR 623 has a total of six, two pole relays in nitrogen filled metal cases.

P/N 11-11321 ..... $1,350.00

SANDIA SR 34-1 12 POLE SWITCHING MODULE

The SR34 uses three, four-pole sealed relays to provide a total of 12 lines of signal level switching.

P/N 11-11322 ..... $400.00

SANDIA SR 54-1 20 POLE RELAY SWITCHING UNIT

The SR54 switching is ideally suited for GPS and other Long Range Navigation Systems that share an HSI/CDI with a VOR/LOC receiver. The twenty poles of switching allow all resolver and steering lines to be switched simultaneously. And the built-in reversionary switching circuitry to ensure VOR/LOC steering is always displayed on the indicator should power be lost or if an ILS frequency is selected in the NAV receiver. P/N 11-11323 ..... $600.00

SANDIA SR 64-1 24 POLE RELAY SWITCHING UNIT

The SR64 has six, four-pole relays to provide a total of 24 lines of switching. This multi-purpose switching unit has its relays arranged in a group of four (16 poles) and two single relays (4 poles each). P/N 11-11324 ..... $600.00

SANDIA AIS RELAY SWITCHING UNITS

A general purpose Avionics units. Operates on 28Vdc; PMA'd NSN 5999-01-544-0513

20 Pole ..... P/N 11-11313 ..... $650.00
24 Pole ..... P/N 11-11302 ..... $486.00

SANDIA ST 26 TACH GENERATOR ADAPTER

The ST 26 is a Tach Generator Adapter that converts sinusoidal, 26vac – 400hz output of the Turbine Engine Tach Generators to a digital signal. This TSO approved adapter can be used for aircraft instrument displays or for other control – data collection systems. The ST 26 is approved to work with the most common aircraft tachometers models.

P/N 11-11331 ..... $810.00

AV

MID-CONTINENT INSTRUMENTS AND AVIONICS INSTRUMENTS 2 INCH CDI

This indicator will fit the need of aircraft owners of LSA all the way up to business aircraft. The CDI allows for precise and accurate readings. Nav, GPS and VLOC annunciation are built-in and backlit by LED lighting, providing enhanced nighttime and sunlight readability. The CDI has TSO approval from the FAA and will interface with most nav and GPS receivers.

Features:

- Compact 2-1/4 inch size saves panel space
- Innovative Safety Feature – pointers move out of view with invalid signal
- Precision replacement for older navigation indicators
- Rectilinear meter movements allow for more accurate readings.
- LED backlighting looks great and provides increased reliability.
- Built-in annunciations for NAV, GPS, and VLOC or BC.
- FAA TSO approved for use with most GPS and VOR systems
- Rugged construction includes ball bearings in critical areas.
- True course resolver output (1 volt, 30 Hz)
- Quality Mil-Spec connectors included
- One year limited warranty

Specifications:

- Power Input: Accepts 11 to 32 Volts DC.
- Lighting: Internal white LED. Lighting control voltage is selectable for 5, 14, or 28
- Weight: 0.6 lbs.
- Length: 3.5 inches

Mid-Continent Instruments and Avionics - CDI MD222-406 (This unit has the NAV/GPS & VLOC annunciations for the Garmin units)
P/N 11-05106 ..... $2,245.00

Mid-Continent Instruments and Avionics - CDI MD222-506 (This unit has the NAV/GPS & BC for all other applications)
P/N 11-05107 ..... $2,245.00

MD200-306 CDI GS Indicator ..... P/N 11-00184 ..... $2,035.00

MID-CONTINENT INSTRUMENTS AND AVIONICS HORIZONTAL ANNUNCIATORS

Incudes CDI and suspend mode switching, independent of OBS per new GTN requirements.

Features: Compatible with Garmin GTN 6XX/7XX WAAS Navigators. Compact, self-contained GPS annunciation control unit. Automatic-dimming and daylight readable LED lighting. Single cutout and locking D-subminiature connector reduces installation costs. Quality Mil-Spec connector included. TSO-C129 certified. Qualified to RTCA DO-160 environmental specs. Designed and built in Wichita, Kansas, USA. One-year limited warranty.

14V Horizontal ..... P/N 10-04769 ..... $1,165.00
28V Horizontal ..... P/N 10-04768 ..... $1,165.00

MID-CONTINENT INSTRUMENTS AND AVIONICS COURSE DEVIATION INDICATORS

Features:

- 3 in. model fits standard panel cutout. Lighted.
- All-metal construction with ball bearings in critical areas
- FAA TSO and ETSO approved for use with all GPS and VOR systems
- High-quality rectilinear meter movements
- Annunciations for NAV, GPS and Back Course
- True course resolver output
- Pin-for-pin replacement for Collins Micro Line IND 350 Series CDI
- Can be used to replace old-style navigation indicators
- Compatible with WAAS GPS receivers
- Quality Mil-Spec connectors included

Specifications

- Voltage input: 14 VDC or 28 VDC
- Current input: 0.3 amps max
- Standard cutout (3 1/8-inch round)
- Weight: 1.4 lbs.
- Altitude: 0 to 55,000 ft.
- Rear mount panel mounting

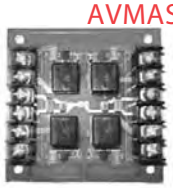
MD200-302 CDI ..... P/N 11-10022 ..... $1,482.00
MD200-303 CDI Course Deviation ..... P/N 11-10023 ..... $1,679.00
MD200-307 CDI Glideslope Course Deviation
P/N 11-10024 ..... $2,472.00

REMOTE SWITCHING RELAY UNIT

Remote mounted 24-pole unit features eight Nitrogen-filled relays (3 poles per relay) with Gold-plated contacts Ideal for GPS/VOR transfer and audio switching applications. Relays are activated individually by voltage or .....ground keying or as a group by ground keying. FAA PMA Approved (certified to 55,000 ft.) Versatile Mounting - Horizontal, Vertical or flat mount configurations. Fail-safe fault monitoring through interlocking of all internal relays. Adjustable dimmer output for external annunciations. Quality MIL-SPEC connector kit included. Specifications: Width: 2.86", Height: 1.52" , Depth: 2.6", Weight: .75lbs

Remote Relay Unit 14V..P/N 10-02125 ..... $886.00
Remote Relay Unit 28V..... P/N 10-02127 ..... $886.00

AVMASTER RELAY 14VOLT & 28VOLT



The AvMaster Relay is the first and only self contained, fail-safe, avionics master relay package to protect expensive radio tear at an affordable price. The AvMaster Relay is installed between the power bus and the protected radios. The Avionics Master Switch then controls the AvMaster Relay only and not the radios directly. Not only does the AvMaster Relay protect the system from transient electrical spikes during normal operations, its four parallel relay controlled, surge protected circuits allow for individual fusing that separate all radios from each other. The avionics master switch is a great idea. It protects against the large power surge potential during start up and shut down. It's also useful to prevent premature wear of each radio's switches and allow the benefit of maintaining the volume settings. But, it has a major weakness. An Avionics Master Switch becomes a potential single point of failure. If it fails, ALL radios shut down! A second Avionics Master Switch has been used as the solution to this problem. However, this offers no spike protection while on and it still connects all radios together. An overload in one radio can potentially spill over to the whole avionics circuit and take them all out. The fail-safe design of the AvMaster Relay eliminates the need for a backup Avionics Master Switch. If the Avionics Master Switch ever fails, the pilot won't even realize it until after the flight is over and the Avionics Master Switch doesn't shut down the radio stack. The radios will just be controlled individually until the problem is resolved. The AvMaster Relay will pay for itself with fewer repairs over the increased lifetime of the avionics stack.

14 Volt ..... P/N 11-04857 ..... $128.95
28 Volt ..... P/N 11-04858 ..... $126.95

AMERI-KING REMOTE RELAY ASSEMBLIES

FAA TSO'd approved remote Relay Assembly. It is designed to provide Switching Function, for HSI / CKE Data Inputs, between NAV (VOR) Receiver and the approached certified GPS receiver. The Assembly consists of a 24 pole buit-in relay to simplify installation of the Switching Function. All Relays have gold-plated contacts and are Nitrogen filled for high reliability. Consists of 2 sub-groups, A & B. Subgroup A includes 20 poles switching; A failure detection pole built in; and an ILS auto override (to reverse to NC (NAV) position upon ILS frequency is turned in). Subgroup B includes 2 poles switching. Each subgroup is controlled independently. Protection includes input power reverse polarity, power transient. All relay coils are protected against EMI and transient switching. Installation is extremely simple. All necessary hardware is provided.

AK-950-R8-14V	8 Poles Relay Ass'y	P/N 11-01407	$325.00
AK-950-R8-28V	8 Poles Relay Ass'y	P/N 11-01408	$299.95
AK-950-R12-28V	12 Poles Relay Ass'y.	P/N 11-01409	$325.00
AK-950-R12-14V	12 Poles Relay Ass'y.	P/N 11-01410	$223.95
AK-950-R24-14V	24 Poles Relay Ass'y.	P/N 11-01411	$359.95
AK-950-R24-28V	24 Poles Relay Ass'y.	P/N 11-01412	$374.00
AK-950-R48-14V	48 Poles Relay Ass'y.	P/N 11-01413	$637.00
AK-950-R48-28V	48 Poles Relay Ass'y.	P/N 11-01414	$639.00

9500001B Connector Kit, 78 female mach. pins, crimp type Ass'y.
P/N 11-01415 ..... $25.50

MID-CONTINENT INSTRUMENTS AND AVIONICS ANNUNCIATION CONTROL UNIT MD41-444

Annunciation Control Unit 14V, Horizontal. With internal relay.
P/N 11-00967 ..... $1,325.00

AVIONICS COOLING FANS

TROLL AVIONICS COOLING FANS

THE ICE BOX - Avionics cooling fan is designed to mount remotely and cool up to 3 radios. It is shielded and filtered and uses standard 5/8" CAT type hose to direct air from 3 outlet ports. Thickness of the unit is only 1.4", and it operates on 14 or 28 volts. Ice Box offers a thin profile, flexible mounting, and very quiet operation. 2 yr warranty.

12V ..... P/N 11-18350 ..... $163.95
28V ..... P/N 11-18360 ..... $163.95

SUPER ICE BOX - Same as above except w/5 outlet ports instead of three, to cool 2 extra radios. 12V ..... P/N 11-18365 ..... $224.95
28V ..... P/N 11-18370 ..... $224.95

CYCLONE - The Cyclone-21 is a compact (3 x 3 x 1") aircraft electronics cooling fan that delivers 21 cubic feet per minute of forced air cooling to a variety of avionics equipment

3-port 12V fan ..... P/N 11-18380 ..... $165.95
3-port 24V fan ..... P/N 11-18381 ..... $164.85
6-port 12V fan ..... P/N 11-05221 ..... $319.95
6-port 24V fan ..... P/N 11-05222 ..... $346.00
5/8" fan tubing ..... P/N 11-00504 ..... $5.50

LONE STAR FAN FAILURE WARNING SYSTEM

The Fan Failure Warning system (FFW) is designed to monitor the RPM/TACH output signal from a Cyclone 21 Blower. If the blower falls below a preset RPM, the warning LED will alert the pilot that avionics and or onboard electronics are no longer functioning within a safe operating temperature.
Note: Price listed below is for the Fan Failure Warning unit ONLY. You will need to purchase the Cyclone 21 Blower and the LED Panel Indicator separately to complete the system.

P/N 11-10590 ..... $249.95

AMERI-KING AVIONICS COOLING FANS

The Ameri-king AK-950F is part of a FAA TSO'd approved.kit. GPS/Avionics fan is compact and delivers up to 26.6 CFM cubic feet per minute of forced air cooling to a variety of avionics equipment. It features ball bearing for highest reliability and long lasting. The AK-950F fan may be behind or beneath aircraft instrument panel or avionics equipment rack or cabin pressure bulkhead. The small, one port direct mounting fans (Fld) are for internal cooling and there is a second port for external cooling. No remote hose is required.
Features Include: power reverse polarity protection; compact size; choices of 1, 2, 3, or 5 hose outputs; universal mounting; hoses; connector kit and hardware (included). 4-year extended warranty. Size for 1-3 ports: L- 5.75" W- 5.130" H- 2.080". 5 ports: L- 6.75 " W- 5.130" H- 2.080". Small F1d port: L- 2.60" W- 2.5" H- 2.5". Power 14 or 28 VDC.

Description	14V P/N	Price	28V P/N	Price
1-port w/hose	11-18385	$119.75	11-01416	$117.00
2-ports w/2 hoses	11-18386	$133.95	11-00177	$133.95
3-ports w/3 hoses	11-18387	$158.00	11-01417	$158.00
5-ports w/5 hoses	11-18388	$228.00	11-01106	$228.00
10-ports w/ 10 hoses	11-05825	$448.95	11-05820	$448.95
Small, 1 Port (Fld)	11-01418	$117.00	11-01419	$178.75

AMERI-KING AK950-FTR RFI DC LINE FILTER

The AK950-FTR RFI DC line filter is the only TSO approved RFI filter available. The AK950-FTR was designed to replace all Hisonic RFI filters. It replaces Hisonic RFI-40, RFI-70, and RFI-100 filters. Works on 40-100 amp operation, working voltage is 30VDC. FTR1 designed to reduce noise from alternator or generator.

AK950-FTR (pictured) ..... P/N 11-00182 ..... $98.85
AK950-FTR1 ..... P/N 11-00183 ..... $78.75

SANDIA ACF 314 (3 PORT FAN)

The ACF 314 and ACF 328 simultaneously cool up to three avionics units. Operating on 14Vdc and 28 Vdc respectively the ACF 314 and ACF 328 supply up to 20 cubic feet of cooling air per minute, helping maintain your avionics at a proper operating temperature. SANDIA Aerospace cooling fans use high quality, brushless blower motors and or RunQuiettm technology. These units are FAA PMA's and have passed stringent environmental testing to ensure years of reliable service. Specifications: • Operating Voltage: 14Vdc • Current Draw: 960mA (1.7A at startup} • Size: 5.18" x 5.18" x 2.1" • Weight: 1.18 lbs.

P/N 11-06345 ..... $193.75

CYCLONE 600 - 6 PORT AVIONICS COOLING FAN

The Cyclone-600 is a light weignt, highly reliable brushless DC avionics blower that delivers 45-50 CFM of forced air to onboard aircraft electronics. The universal mounting system mounts vertical, horizontally or at 45 degrees for straight forward installations for all aircraft make and models.
Features: * New DC Brushless Motor with FAA/PMA Approval. * High Performance 626ZZ Bearing for Extended Life. * High Impact Phenolic Housing. * Laser Balanced Impeller wheel. * Universal Front Plate (4,5,6, Ports). * Cable Harness (36"), included.
Benefits: * Over Current Protection * Locked Rotor Protected * Reverse Polarity Protected * FAA/PMA Approved * DO160 D Tested * Low Noise
Specifications: * Voltages: 12-14 VDC 600mA; 24-48 VDC 500mA * CFM: 45/50 CFM at 6000 RPM * Dimensions: 4.5in (H) x 3.0in (W) x 6.25in (L)

Description	Part No.	Price
Cyclone 600 6 Port Fan 12-14V	11-05221	$319.95
Cyclone 600 6 Port Fan 24/28V	11-05222	$346.00

LONE STAR 12/24 VDC BLOWER KIT

Lone Star Aviation's new 1 port blower is the smallest (1 x 2 x2), most efficient (brushless dc motor), and the most versatile avionics cooling fan in our industry today.
This New blower's universal mounting bracket makes it easy to set-up and install on a verity of aircraft Install immediately on experimental, sport and soon on general aviation, business, rotor-craft, commercial class aircraft as well as Land-Mobile, Marine and Military Vehicles.
Specifications: * Light Weight: 52 grams, 0.115 lbs * Enclosure: Aluminum, (powder coated) * Vdc, amperage: 12 = 10.2-15.8Vdc, 0.320ma * Vdc, amperage: 24 = 18.2-28.5Vdc, 0.300ma * 1 port = 5/8 inch x 1.0 * Max Static pressure: H2O = 0.64 * Max Air Flow: 6.7 CFM * Universal Mounting Bracket: (4)(mt)(h) * Operating Temp: -55C to +70C * FAA-PMA (pending), 6-30-08 * Ultra-Small Size: 2.0H x 1.00W x 2.0L * Easy Installation: (4 x 6-32) * 1 year Limited Warranty

Description	Part No.	Price
Lonestar 12 VDC Blower Kit LS03-02040	11-06567	$129.95
Lonestar 24 VDC Blower Kit LS03-02041	11-06568	$129.95

SANDIA SAFE 328 - 3 PORT COOLING FAN

The SAFE 328 is a three port blower that can effectively cool a complete avionics suite. Providing a nominal 20 CFM of cooling air (no load), the SAFE 328 provides an alert output should the blower RPM drop below a preset level.
Specifications: • Operating Voltage: 28Vdc • Current Draw: 400 MA Nominal (550MA stratup) • Size: 5.58" x 4.75" x 1.25" • Weight: 1.18 lbs.
Certification: PMA DO160D P/N 11-11301 ..... $430.00

SANDIA ACF 528 5 PORT FAN

The ACF528 is a FAA-PMA'd five port cooling fan that produces cooling air for one to five avionics units. Supplying up to 20 cubic feet of air per minute at 28 Vdc, the ACF528 can easily cool an entire stack of avionics. The ACF528 uses a brushless blower motor to provide years of reliable RunQuiet ™ operation. Specifications: * Operating Voltage: 28Vdc * Current Draw: 480mA (850mA startup) * Size: 5.13" x 6.77" x 2.1" * Weight: 1.18 lbs * Certification FAA-PMA: DO160C

P/N 11-08020 ..... $279.00

SANDIA SAFE 128 AXIAL FAN

The SAFE 128 is an axial fan that is designed to attach directly to an avionics unit's cooling port. Providing a nominal 20 CFM (no load) of cooling air. The SAFE 128 provides an alert output whenever the fan RPM drops below a preset level.
Specifications: * Voltage: 28 Vdc * Current Draw: 100mA nominal <.250mA Startup * Size: 2.36" x 2.87" x 1.44" * Weight: .25 lb. * Certification: PMA,DO160D * With Fault Detention P/N 11-08019 ..... $194.80

SANDIA SAFE 528 (5 PORT) COOLING FAN

The SAFE 528 is a five port cooling fan that provides a fault output anytime the fan RPM drops below a predetermined value. The SAFE 528 is ideal for use with flight display systems that require cooling as part of the certification. The SAFE 528 uses a brushless DC motor to provided 20 cubic feet of air with reliable RunQuiettm operation.
Specifications: * Operating Voltage: 28Vdc * Current Draw: 400 MA Nominal (550MA stratup) * Size: 5.13" x 6.77" x 2.1" * Weight: 1.23 lbs. * Certification: FAA-PMA Pending P/N 11-08017 ..... $550.00

AV

XCOM & TRIG TRANSCEIVERS

XCOM VHF TRANSCEIVER

With low power consumption this radio is ideally suited to use in gliders, homebuilts, and ultralights. A full 6-Watt carrier and 20 Watt PEP output ensure that you will be heard above the general chatter in a busy airspace and the VOX intercom system with music input will enhance your enjoyment of the flight. With expanded receive range from 108 MHz, the XCOM760 provides NOAA Weather reception ensuring that you are always aware of impending weather conditions.The XCOM 760 will also operate down to a 108 MHz so you can receive the VOR channels. Additional safely enhancements such as duel watch allows the pilot to listen to the standby frequency while still monitoring the primary frequency. The XCOM 760 also has 99 memory channels, large volume and channel selector knobs and well spaced buttons. This radio is extremely easy to operate even when wearing flight gloves and you can even check the condition of your battery with the built in voltage monitor. Software update capability and Internet downloads mean that you are always provided with the latest features.

760 VHF Panel Mount P/N 11-02206.....$1,553.00
Side by Side Standard Harness ..... P/N 11-07387..... $349.00
2 place 3 ft. harness with jacks attached
P/N 11-11934..... $147.95

XCOM INSTRUCTIONAL DVD

Instructional DVD explaining the complete operation and set-up of the XCOM VHF Transceiver. 30 minutes duration. P/N 11-05674 ..... $4.95

XCOM GLIDER BOOM MICROPHONE

Boom Microphone - More than 1200 made and used all over the world, 3 year guarantee.
P/N 11-05675.....$199.95

XCOM GLIDER SPEAKER

Glider Speaker - Clear sound and easy to understand 5 watts output 8 ohm.
P/N 11-05676..... $48.00

XCOM VOLTAGE CONVERTER 15-38V

Switch mode voltage converter with soft shutdown and intelligent control. Input Voltages 15 to 38 Volts, Output 13.2 Volts 7 amps. Compact, efficient, short circuit protected, reverse polarity protected, overload protected. Perfect for warbirds. Made in the UK. Lightweight 195 grams (6.8 oz), Mounting bracket supplied.
P/N 11-05680..... $210.95

XCOM STEREO VIDEO PATCH CABLE

Seamlessly connect a Stereo or Mono Video Camera, Tape Recorder or Digital Voice Recorder into your aircraft headsets and record all communications between the Pilot and Co-Pilot, ATC and other Aircraft. Perfect for making your own aviation videos with crystal clear narration, flight training or many other uses.
P/N 11-05658.....$43.00

XCOM REMOTE HEAD

he newest addition to the XCOM range is the XCOM VHF Remote Head option. Interfacing with the XCOM VHF, this tiny unit provides remote access to all of the capabilities of the XCOM VHF Radio in one quarter of the space. Ideal for training situations, tandem seat aircraft, limited space installations or simply to provide easy access for both pilot and co-pilot, this unit duplicates the entire XCOM VHF display and provides full access to all functions (except power on) from the front panel of the radio. The connection between the remote head and the XCOM VHF radio is via a simple cable allowing all of the controls on either panel to be duplicated on the remote. When the master unit is changed, the remote head follows and vice versa. For example, if the pilot in the front seat of the aircraft adjusts the radio to 123.450 then the remote display also adjusts to show 123.450. If the toggle button is pressed on the remote, then the frequencies are toggled on both units. All of the XCOM features apart from powering on can be duplicated with a remote head option. The remote head is extremely small, being less than 1 1/2" deep (40mm), allowing it to be installed in places where the XCOM will not fit such as in the very tight confines of the panel in the Pitts Special

P/N 11-04399 ..... $394.00

TRIG TY91 VHF RADIO SYSTEM

The majority of GA users including light sport, ultra-light, glider and balloon pilots will fit the Trig TY91 radio, this lower powered 6 watt model is ideal for the majority of applications. Compact size, low weight - takes minimal panel space, only 74mm deep. 8.33 and 25 kHz channel spacing. Dual watch – monitor two frequencies at the same time. Unique 'Push Step' feature provides the fastest frequency selection. Low power consumption. 6 Watts nominal output. Simple installation. EASA ETSO and FAA TSO certification. Unbeatable value and quality – designed and manufactured in the U.K.. Two year worldwide warranty.

Features:

- Can be set at 25 kHz and 8.33 kHz
- Receiver - Class C, Class E / Transmitter - Class 4, Class 6
- 6 Watt power output
- Compact and light weight
- Take up minimal space and weight
- Dual watch and two place intercom
- Operation is simple, rapid frequency selection
- Nine programmable memories
- Can be battery operated
- Full certified
- Compliments Trig's TT21 and TT22 Mode S Transponders
- Flexible installation options due to 2 piece design
- Can be mounted in a standard 2 1/4" hole or even smaller compact mount
- Once fitted, the depth of the radio control head is less than 1 1/2" deep
- Crisp display, visible in all lighting conditions
- TY91 is a lower powered model, ideal for light sport, ultra light, glider and balloon pilots and majority of GA users

P/N 11-10721 .....$1,739.00

ELECTROLYTIC CAPACITOR

Electrolytic Capacitor - 22, 000 uF 25V and absolute requirement to prevent regulator spikes on Rotax, Jabiru and other engines, the manufacturer recommend installing the electrolytic capacitor in nearly every installation to help protect your radio and other avionics from over-voltage.
P/N 11-07992 ..... $63.75

AV

FREE FLIGHT TRA 3000 RADAR ALTIMETER / INDICATOR

The TRA 3000 Radar Altimeter, combined with the TRI40 Radar Indicator, provides precise AGL information from 2,500 feet down to 40 feet. This real-time system offers an extra measure of operational safety during landing, navigation, and hovering. It is especially useful in flying search and rescue missions, forestry operations, pipeline maintenance, offshore helicopter operations, aeromedical emergency medical services, border patrol, and electronic news gathering operations. The transmitter / receiver and antenna fit in a single lightweight & aerodynamic unit that is easy to install.

TRA 3000 with TRI 40.....P/N 10-02519 .....$6,095.00

FREE FLIGHT RA-4000 RADAR ALTIMETER

Intended for Experimental Aircraft use only.

For critical flight regimes, the new TSO-certified RA-4000 Radar Altimeter provides today's pilots with highly accurate and reliable above-ground-level (AGL) information. This real-time system enhances operational safety during approaches, nighttime operations, and hazardous flight above rough terrain. One of our newest radar altimeters, the RA-4000 is especially valuable when flying search and rescue missions, forestry operations, pipeline maintenance, off shore helicopter ops, aero-medical emergency services, border patrol, and electronic news gathering operations. The RA-4000 Radar Altimeter is designed to be easily integrated with electronic flight information systems (EFIS), flight director systems, and terrain awareness and warning systems (TAWS), possessing serial inputs.

Proven and precise, the RA-4000 offers improved situational awareness for a broad range of fixed and rotary wing aircraft. Designed for applications where accuracy is needed down to zero feet, such as helicopter and seaplane operations, the RA-4000 provides precise AGL information from 2000 feet down to ground level.

RA-4000.....P/N 10-03976 ..... $11,465.00

FREE FLIGHT RA-45000 RADAR ALTIMETER

Intended for Experimental Aircraft use only.

For critical flight regimes, the new FreeFlight Systems RA-4500 Radar Altimeter (TSO-C87) provides today's flight crews with dependable, highly accurate and economical above-ground-level (AGL) information. This real-time system enhances operational safety during approaches, nighttime operations, and hazardous flight above rough terrain. The newest radar altimeter model, the RA-4500 is especially valuable when flying search and rescue missions, forestry operations, pipeline maintenance, off shore helicopter ops, helicopter emergency medical services (HEMS), other aero-medical emergency services, border patrol, and electronic news gathering operations. The RA-4500 Radar Altimeter with its ARINC 429 output can be easily coupled with modern electronic flight information systems (EFIS), flight director systems, and Terrain Awareness and Warning Systems (TAWS). Proven and precise, the RA-4500 offers improved situational awareness for a broad range of fixed and rotary wing aircraft. Designed for applications such as helicopter and seaplane operations where accuracy is needed down to zero feet, the RA-4500 provide precise AGL information from 2000 feet down to ground level.

RA-4500.....P/N 10-03977 ..... $12,545.00

AIRCRAFTSPRUCECANSELLTHESEFREEFLIGHTPRODUCTS FOR INSTALLATION IN EXPERIMENTAL AIRCRAFT ONLY.

TRIG TT21 MODE S TRANSPONDER

Trig makes the world's smallest and lightest Mode S certified GA transponders. The TT21 Trig compact transponder can fit into to the tightest panel space. This allows general aviation, light sport and glider pilots to fit other instrumentation or displays that otherwise might not have been possible. The TT21 is a class 2 transponder and our most popular compact transponder model. Compact size - takes minimal panel space, fits in a standard instrument hole. Integrated altitude encoder. Certified for IFR / VFR flight. Certified class 2 transponder 130 watts nominal output. Low weight – 440g (0.8 lbs). Low power consumption. 1090ES ADS-B Out capable. EASA ETSO and FAA TSO Certification – includes TSO C166b the latest ADS-B standard. Unbeatable value and quality – designed and manufactured in the U.K.. Two year worldwide warranty.

Features: • Low Weight • Minimal Panel Space • Low Power Consumption • 130 Watts Nominal Output • Integrated Altitude Encoder • Simple Installation • Easy to Use Rotary Knobs • Support for ADS-B Out.

TT21 Mode S Transponder Complete Kit.....P/N 11-07999.....$2,295.00
Install Kit.....P/N 11-09755.....$176.95
Mounting Tray.....P/N 11-09758.....$33.85
RAM Cradle UNI Thick Tablets.....P/N 11-09768.....$22.17
TC20 Control.....P/N 11-09762.....$580.00

TRIG TT31 MODE S TRANSPONDER

Trig's TT31 transponder is the perfect retro-fit for the popular Bendix King KT76A and KT78A transponders. The TT31 is a certified Class 1 transponder which will 'plug and play' straight into the existing Bendix King tray. This significantly reduces both installation time and cost. It provides pilots with class leading Mode S technology that is also 1090ES ADS-B Out capable too (ADS-B functionality requires a Trig tray). Retrofit – 'plug and play' installation for KT76A and KT78A transponders. Certified Mode S and 1090ES ADS-B Out capable. Certified for IFR / VFR flight. Lowest power consumption in class. 240 watts nominal output. Great functionality and performance - TIS traffic capabilities. Backlit LED display. No cavity tube – no warm up time required. No need for dropper resistors. EASA ETSO and FAA TSO Certification - includes TSO C166b the latest ADS-B standard. Unbeatable value and quality - designed and manufactured in the U.K.. Two year worldwide warranty.

Features: • European Mode S • Low Power Consumption • No Cavity Tube • 240 Watts Nominal Output • Plug and Play Installation • Backlit LCD Display • Easy to Use Rotary Knobs • Timer/Stopwatch Function • Altitude Monitor • Certified 1090ES ADS-B out

TT31 Mode S Transponder.....P/N 11-07997 .....$2,749.00
TT31 Mode S Transponder Replacement KT-76X
P/N 11-07998 .....$2,733.00

TRIG TY92 VHF RADIO SYSTEM

The TY92 is a high power performer, the perfect VHF comm radio for heavier aircraft and high performance types. It's the ideal retro-fit radio that can be installed out with the main avionics stack providing the option of a standby radio. Just like the TY91 the TY92 takes up minimal space and weight but is designed for aircraft with a 28 volt supply. Compact size, low weight - takes minimal panel space, only 74mm deep. 8.33 and 25 kHz channel spacing. Dual watch – monitor two frequencies at the same time. Unique 'Push Step' feature provides the fastest frequency selection. High Power Output – designed for 28 volt systems. 16 Watts Nominal Output. Simple Installation. EASA ETSO and FAA TSO certification. Unbeatable value and quality – designed and manufactured in the U.K.. Two year worldwide warranty.

Features: • Provides more installation options while saving space with a control head and separate radio hardware • Certified for 25 kHz and 8.33 kHz VHF transceiver • Requires minimal space and weight - can be mounted in a 2.25-inch round hole or in a smaller compact mount; when installed, the control head is only 3 inches deep • Equipped with 9 programmable memories and a dual watch function that allows users to monitor standby frequency • Simple installation • 16 watt version (see 01079-00 for 6-watt version) • Perfect partner for Trig's TT21 and TT2 Mode S transponders • Approved for fitting to European and FAA-registered aircraft • Easily operable with gloves • Includes a built-in speaker amplifier and two place intercom. P/N 11-11344 .....$4,075.00

AV

ACK A-30 ALTITUDE ENCODER

Add Mode C capability to your aircraft the most cost-effective way. The ACK encoder is the smallest, lightest, highest quality encoder available today and features the latest solid-state electronics for high reliability. Installation is quick and easy and usually is completed in less than 1 hour. It is compatible with most transponders in use today and reports altitude to 30,750 ft. Includes quick-release mounting tray, 4-ft. color-coded wiring harness with prewired jack, static line and fittings for installation in any aircraft, and installation manual with popular transponder pin-outs. 3yr. warranty. P/N 11-01561 ..... $197.00

ACK A30.9 (MOD 9) ENCODER

The ACK A30.9 (Mod 9) encoder is ideal for use with most GPS and TAWS systems, and works well with most of today's mode S transponders. Feature Gray code in 100ft. increments and RS-232 in 10 or 100 feet increments. Furnished with a 4 ft. harness, pre-wired jack, quick release mounting tray, fittings, static line, and installation manual. Reports altitude to 42,000 ft. One Year Warranty. P/N 11-02375 $248.00

AMERI-KING ALTITUDE ENCODERS

The Ameri-King AK-350 is the most advanced blind altitude reporter on the market, extremely accurate and reliable, the AK-350 is compatible with all transponders, is TSO-C88 approved, and reports altitude to 30,000 ft. Only 3.5"x 2"x 4.75" and weighs 0.4 lbs. Perfect for pressurized or non-pressurized installations and uses 14V or 28V power. Installation is very simple; all accessories and installation instructions are included. 3 year extended warranty. The AK-35, AK-40 and AK-50 encoders are designed for aircraft flying at altitudes higher than 30,000 ft.

Model #	Max. Altitude	Part No.	Price
AK-350	30,000 ft.	11-12010	$169.95
AK-35	35,000 ft.	11-12011	$387.00
AK-40	40,000 ft.	11-12012	$520.00
AK-50	50,000 ft.	11-12013	$787.00
AK-60	62,000 ft.	11-01250	$1,320.00

TRANS-CAL ALTITUDE ENCODER MODEL SSD120-30N

Reliable service for over 10 years. * Pin for pin replacement for most other manufacturers encoders. * Comes with Mating Connectors with Cable Clamps, and Mounting Bracket. * Optional: Available with two independent RS232 serial data ports selectable message protocols for most popular avionics interfaces. Programmable for 100' and 10' resolutions. See Part No. 11-06983 * Optional: Available with adapter plates that will allow the installer to mount the unit in another manufacturers mounting tray. Specifications: * Size: 2.5"W x 3.42"H x 1.38"L.* Weight: 5.9 oz. * Will operate on either 14 or 28 VCD at 0.270 Amps.

There are two versions of this model:

• Standard Version SSD120-30N

• Version SSD120-30N-MOD1 for NARCO AT-5A, 6A, 50, 50A Transponders. The Narco AT-5A, AT-6A, AT-50* or AT-50A transponder will not accept data from the SSD120-(XX)N() Altitude Digitizer. A recent modification to remove the output decoupling capacitors is required and this version includes that modification.

30,000 ft. Range ..... P/N 11-06489 ..... $232.95
35,000 ft. Range ..... P/N 11-09608 ..... $302.00
SSD120-30N-MOD1 ..... P/N 11-09916 ..... $237.95

TRANS-CAL ALTITUDE ENCODER MODEL SSD120-30N-RS232

Reliable service for over 10 years. Pin for pin replacement for most other manufacturers encoders. Optional: Available with adapter plates that will allow the installer to mount the unit in another manufacturers mounting tray. * Will operate on either 14 or 28 VCD at 0.270 Amps.

There are two versions of this model:

•Standard Version SSD120-30N-RS232

•Version SSD120-30N-RS232-MOD1 for NARCO AT-5A, 6A, 50, 50A Transponders. The Narco AT-5A, AT-6A, AT-50* or AT-50A transponder will not accept data from the SSD120-(XX)N-RS232 Altitude Digitizer. A recent modification to remove the output decoupling capacitors is required and this version includes that modification.

30,000 ft. Range ..... P/N 11-06983 ..... $299.00
35,000 ft. Range ..... P/N 11-09609 ..... $418.00
SSD120-3N-RS232-MOD1 ..... P/N 11-09917 ..... $306.00

SANDIA SAE5-35 ALTITUDE ENCODER

The SAE5-35 altitude encoder from Sandia is small (1" high), lightweight (12 oz.) and utilizes Gillham Grey code in 100' resolution for optimum performance and accuracy. Features two RS232 outputs in 10 foot resolution, simplifying installations. All connectors are on the same side for easy mounting, and digital calibration eliminates analog drift. Altitude In-Flight Monitoring (AIM) mode alerts the pilot when he strays off altitude. Requires virtually no warm up time and uses very little power. Fully TSO'd and backed by factory 3 year warranty. Power: 11-33VDC. P/N 11-00665 ..... $384.00

SANDIA SAC 7-35 AIRDATA COMPUTER

The SAC 7-35 is FAA TSO Approved as an altitude encoder. It provides standard Gillham Grey code for legacy transponders and RS-232 data for the new generations of transponders. Altitude Alerting. The SAC 7-35 has SANDIA Aerospace's exclusive AIM (Altitude Inflight Monitoring) that alerts the pilot anytime he deviates more than 100 feet from his selected altitude. Fuel Flow. The addition of a fuel flow transducer (two for a twin) and your SAC 7-35 provides all the fuel flow data your navigation systems needs to monitor your fuel situation. Airdata Computer. The SAC 7-35 is a full up TSO'd Airdata Computer offering all of the functions and capabilities of systems costing thousands of dollars more. The SAC 7-35 has multiple interface formats that allow it to provide data to a wide variety of avionics systems. Designed and manufactured to most exacting standards, you can depend on SANDIA Aerospace products to provide years of reliable service. And every product is backed by a three year warranty and personal service support.

P/N 11-07938 ..... $2,176.00

SANDIA SAC 7-35-01 AIRDATA COMPUTER

The SANDIA aerospace SAC 7-35-01 is an airdata computer and data translator that interfaces the Garmin 400W/500W navigators Downlinked Aircraft Parameters in ARINC 429/743 format to the Collins TDR 94D for ADS-B out capabilities.

Note: Interfaces with Garmin 400W/500W navigators.

Functions:

Altitude Encoder. The SAC 7-35 is FAA TSO Approved as an altitude encoder. It provides standard Gillham Grey code for legacy transponders and RS-232 data for the new generations of transponders.

Altitude Alerting. The SAC 7-35 has SANDIA Aerospace's exclusive AIM (Altitude Inflight Monitoring) that alerts the pilot anytime he deviates more than 100 feet from his selected altitude.

Fuel Flow. The addition of a fuel flow transducer (two for a twin) and your SAC 7-35 provides all the fuel flow data your navigation systems needs to monitor your fuel situation.

Airdata Computer. The SAC 7-35 is a full up TSO'd Airdata Computer offering all of the functions and capabilities of systems costing thousands of dollars more. The SAC 7-35 has multiple interface formats that allow it to provide data to a wide variety of avionics systems.

P/N 11-09321 ..... $4,194.00

AIRCRAFT CABIN SPEAKERS

Engineered for 10,000 hrs. of performance, (minimum), these flame retardant speakers sound clearer and last longer. The magnet assemblies are heavier than original equipment, yet the overall speaker depth is only 2". The voice coils are heat-proof to withstand high power levels & the gaskets are treated with a moisture barrier, for unprecedented reliability. P.C. = Pin cushion.

Part No.	Size in inches & Description	Mag. Wt. (oz.)	Imp. (ohms)	Prog. Power Watts)	Depth	Price
11-04649	6 x 4 x 1.878 P.C. Oval	4.8C	3.2	10	1.550	$31.65
11-04646	6 x 4 Round	4.8C	3.2	10	2.018	$27.85

MICROAIR EC2002 ALTITUDE ENCODER

EC2002 will accurately report the aircraft's altitude from -1000 to +35,000ft. The altitude output will be via the 10 line Gillham "Gray" code. Accuracy has been measured as a 40 foot drift over 35,000 feet. Lowest power requirements of any altitude encoder today. Typical current consumption of 10 – 90mA, this makes it the logical choice for all battery only operators. Small size and light weight make installation very simple. The chassis is flanged, and is predrilled with mounting holes for easy attachment. The connections consist of the well know DB-15 electrical connector with pin assignments identical to many existing encoders, and a 1/8" NPT fitting which is an industry standard for aircraft equipment. These connections make it compatible with all ATC transponders currently available. P/N 11-05105 ..... $294.95

AV

BECKER MODE S BXP-6403-2

The BXP6403-2-(01) is a compact and light-weight single block Mode-S transponder. It is certified according to ETSO-2C112b and is suited for VFR and IFR operations up to 15000 feet. The transponder is equipped with extended squitter and SI code function and it provides an interface to the central aircraft data system. Provides ADS-B via extended squitter. The BXP6403-2-(01) is designed for slide-in mounting (tray available) and fits into a 160.3 x 41.28 mm cut out. The use of an adapter (available as accessory) allows for retrofit in a KT 76 A tray.

Description	Part No.	Price
Bxp6403-2-(01) - Mode S Transponder with installation kit for retrofit of kt76a - for vfr installation type 175 watt power output, extended squitter	11-06608	$2,995.00
Bxp6403-1-(01) - Mode S Transponder with installation kit for retrofit of kt76a - for ifr installation type 250 watt power output, extended squitter	11-06609	$3,695.00
Mode S Tansponder with installation kit for new installation. Class 2 for vfr installation type 175 watt power output, extended squitter	11-06694	$3,085.00
Mode S Transponder with installation kit for new installation. Class 1 for ifr installation type 250 watt power output, extended squitter	11-06695	$3,465.00

BECKER RFA6403-1 RETROFIT ADAPTER FOR KT76A

Attach the RFA6403 adapter to the back of any Becker BXP6403 Mode A/C/S transponder and make it a "slide-in" replacement for a KT-76A transponder.

P/N 11-11462 ..... $326.00

BECKER ATC 4401 175W MODE C TRANSPONDER

The ATC 4401 has been designed as a part of the Becker Compact Line for all aircraft and helicopters where small dimensions and light weight are essential. It has the same look and similar size as the successful transceiver AR 4201. The mounting behind the panel is as simple as for the AR 4201. In The Box: • ATC 4401 175W Mode C • Connector Kit (Solder type) Specifications: • Weight: 1.59lbs • Width: 2.41in • Length: 2.41 in • Depth (w/0 connector): 7.55in • Warranty: 2 years • Power Requirement: 14-28 VDC• TSO/JTSO C74c, C88a

ATC 4401 175W ..... P/N 11-01094 ..... $1,995.00
ATC 4401 250W ..... P/N 11-01095 ..... $2,291.00
ATC 4401 Harness ..... P/N 11-07874 ..... $160.00

BECKER BE6400-01 BLIND ENCODER

The BE6400 blind encoder is designed with an integral plug to allow direct mounting to any Becker transponder. It also incorporates a built in port for simple connection to the static system. Other features include reporting increments of 100 feet and altitude capability up to 20,000 feet.

P/N 11-11461 ..... $348.00

BECKER AR 6201 TRANSCEIVER

Smaller and lighter than its legendary forerunner AR 4201 due to implementation of state-of-art DSP (Digital Signal Processing) technology. It is mountable in the 2 1/4 inch standard instrument panel recess, equipped with a highly efficient AM-transmitter, offering easy switching between the 8,33 and the 25 kHz mode. A built-in-test facility increases flight safety. The dual monitor mode allows scanning of two different channels. Specifications: • Frequency from 118.000 MHz to 136.990 MHz • 8,33 or 25 kHz channel spacing • RF-Output Power: > 6 W • Supply voltage 9 to 36 V DC

AR6201 with 8.33 kHz / 25 kHz spacing ..... P/N 11-08550 ..... $1,838.00
AR6201 with 25 kHz Spacing only ..... P/N 11-12272 ..... $1,628.00
Wiring Harness ..... P/N 11-07086 ..... $233.95

BECKER BXP6401-2-(01) MODE-S TRANSPONDER

Single block Mode-S transponder. It is certified according to ETSO-2C112a and is suited for VFR and IFR operations up to 15,000 feet. Equipped with extended squitter and SI code function and it provides an interface to the central aircraft data system. It allows ELS, supports EHS, as well as ADS-B via extended squitter. Designed for panel mounting and fits into a 2 ¼ inch cut out.

BXP6401-2-(01) ..... P/N 11-05326 ..... $2,895.00
Becker 1K6401 Harness ..... P/N 11-07192 ..... $200.00

BECKER CU 5401 CONTROL UNIT

The CU 5401 - ( ) control unit is designed for installation in the instrument panel of aircraft. The dimensions of the unit correspond to the ARINC standard for instruments. All controls are located on the front panel of the unit. The 15-pole unit connector is mounted on the back of the control unit.

CU 5401 Control Unit ..... P/N 11-07858 ..... $789.00
ATC 4401 Remote Harness ..... P/N 11-07320 ..... $160.00

BECKER GK 615 PORTABLE VHF STATION

The carrying case contains the battery, speaker, antenna socket, the 5 way DIN socket for the microphone or microphone speaker and the voltage converter. A microphone, a headset or a helmet (ultra- light) can be connected to the 5-way DIN socket. The built-in battery is a maintenance-free recharge- able 12 V / 2 Ah dry lead acid battery. The transmitter power is approximately 5 to 7 W. Charging voltage can be varied between 10 V and 32 V. Charging time approx. 8 hours. The nominal operating time for the portable VHF station is approximately 6 hours at a keying ratio of 1:10 normal ra- dio traffic) and transmitter output power of 5 W. Reception is then still guaranteed for a further 2 hours. The transceiver contains a monitoring stage for the battery voltage which is activated when the unit is switched on. "LOW BATT" is indicated (Appearance about every 5 seconds) if the supply voltage of the transceiver is below the threshold defined in the installation setup. The transceiver is still operable. Depending on supply voltage transceiver may have a reduced performance. Below 10 V speaker out- put is switched off. The portable VHF station is ready for operation after the antenna is screwed in place and microphone plugged in.

Features: • Frequency Range: 118.000 MHz to 136.990 MHz • Channel Spacing: 8.33 or 25 kHz • Channel Selection: 8.33 or 25 kHz (selectable) • RF-Output Power: > 6 W (carrier power) • Receiver Sensitivity: > 12 dB sinad for 2 uV.

Model No.	Watts	Description	Part No.	Price
0940.472 923	5	Becker GK 615-5 Portable VHF Station	11-12319	$3,023.00
0940.432 923	10	Becker GK 615-10 Portable VHF Station	11-12320	$3,569.00

BECKER CU 6401-1 CONTROL UNIT

Control Unit for the BXP 6402 series transponders. Together with the Mode-S transponder BXP 6402, the control unit CU 6401 forms the aircraft part of the air traffic control system.

CU 6401-1 P/N 11-07859 ..... $1,033.00

BECKER BXP6402-2-R TRANSPONDER

The BXP 6402-2R-(01) remote controlled Mode-S transponder forms, together with the corresponding control unit, the airborne component of the Air Traffic Control (ATC). It functions in accordance with the secondary radar principle and allows air traffic control to locate, identify and track aircraft.

BXP 6402-2 150W Remote ..... P/N 11-07860 ..... $2,630.00
BXP 6402-1 250W Remote ..... P/N 11-07861 ..... $3,320.00
BXP 6402 Remote Harness ..... P/N 11-07195 ..... $295.00

BECKER ATC 4401-2-175 TRANSPONDER

The ATC 4401-2 remote controlled transponder forms, to gether with a corresponding control unit, the airborne component of the Air Traffic Control Radar Beacon System ATCRBS. It functions in accordance with these secondary radar principle and allows the respective ground stations to locate, identify and track aircraft.

ATC 4401-2 175W Remote ..... P/N 11-07846 ..... $2,195.00
ATC 4401-2 275W Remote ..... P/N 11-07847 ..... $2,564.00

AV

FLIGHT HUB GX WITH HARNESS

Flight Hub GX streamlines avionics by replacing unreliable splices with a simple plug-and-play box paired with a powerful diagnostic tool.
Flight Hub GX is revolutionizing avionics wiring by eliminating unreliable splices and disorganized cables. The Flight Hub GX is a passive plug-and-play device that contains a unique diagnostic tool. Instruments are connected to Flight Hub GX with manufacturer provided mil-spec wiring harnesses to provide robust connections and diagnostic capabilities. The integrated patent pending diagnostic tool allows a service technician to easily test signals and find problems to reduce down time and increase TIME TO FLY. Flight Hub GX meets the installation requirements of Garmin, Bendix King, PS Engineering, and Avidyne. Flight Hub GX patent pending.
Specifications: • Weight: 2 lb. • Length: 10.1 in. • Width: 5.4 in. • Height: 1.7 in.....P/N 13-14950.....$4,750.00

APPROACH SPORT HUB AVIONICS WIRING SYSTEMS

Simply install the appropriate Approach hub for your instrument panel (basic, VFR or IFR), select the appropriate Approach cables for your avionics, and plug it in and your done. Upgrading and replacing avionics only requires a new Approach cable and future maintainability is greatly enhanced eliminating most hand writing and troubleshooting. All cabling is Milspec Tefzel and complies with FAA AC43-13B.

STEP 1: Select the appropriate Approach Hub for your instrument panel configuration.
Basic instrument panel configuration .....P/N 11-01457..... $199.95
VFR instrument panel configurations .....P/N 11-01458..... $372.95
IFR instrument panel configurations .....P/N 11-01459..... $575.00
Pro G Hub for Garmin Stacks.....P/N 11-01893..... $489.95
STEP 2: choose the Approach cables for your specific avionics.

SEE A COMPLETE LISTING OF APPROACH CABLES AT
www.aircraftspruce.com

MICROAIR MIC-45 MICROPHONE BM470D

A flexible gooseneck microphone. Mounting consists of a steel plate, with right angle flange for attachment of the flexible boom. Boom is fabricated from flexible aluminium conduit, with a conical aluminium housing at the tip to accommodate the microphone capsule. Offers superior noise cancellation and is terminated with a single core shielded 24awg wire. Approx 3m of free wire is provided for connection to the radio. Length: 470cm (18.5"). Cable Length: 3m (9' 8"). Weight: 480g (17oz). Microphone type: Omni directional with effective range 25-100mm (1-4"). Current Drain: 5-10mA Impedance: (600 ohm). Sensitivity: -80dB. Frequency Response: 60Hz to 12Hz
MIC-45 .....P/N 11-08148.....$109.75

ORDER ONLINE!
www.aircraftspruce.com
• 80,000 Parts!
• 24 Hour Access!
• Fast, Easy Navigation!

MICROAIR 760 COM REVISION P

Designed and manufactured in Australia, the Micro Air 760 VHF transceiver is ideal for aircraft requiring compact size and low power consumption. It has many of the features not found in radios costing much more and includes features not available in any other units. It's compatible with a variety of speaker & microphone combinations including all general aviation microphones. Standard model mounts in a standard 2-1/4" panel hole and weighs only 19.4 oz. It has been proven in high noise environments such as Rotax 2-stroke engines and is excellent for gliders, Ultralights, a general aviation aircraft. A unique LED multifunction annunciator located at the top right of the unit provides several alerts, and an external memory toggle switch allows remote control of the memory frequencies. Transmit output: 4W, Size: 2.56" x 2.44" x 7.779"d, 14V.
Standard 2-1/4" model.....P/N 11-18700 ..... $999.00
760 Harness rev Q.....P/N 11-06306 ..... $243.95
M760 Twin Gold Harness .....P/N 11-07113 ..... $233.95
Boom Mic BM470-E .....P/N 11-02864 ..... $132.75
Boom Mic BM470-D.....P/N 11-08148 ..... $109.75
Spaker Box SP01 .....P/N 11-02865 .....$42.50

MICROAIR T2000 TRANSPONDER

The Microair Avionics T2000SFL Transponder is a mode 3A/C aircraft transponder designed to operate in an ATCRBS environment. The T2000SFL has been designed to meet RTCA/DO-144 requirements, and has been tested to DO-160D for environmental and EMC requirements.
The T2000SFL software has been developed and approved under RTCA/DO 178B requirements. The T2000SFL is a small lightweight transponder with low power requirements. The T2000SFL is compatible with any C88a compliant altitude encoder, and offers the following features: * Mode 3 A response (4096 codes) * Mode C altitude response * SPI indent response * Encoder Altitude displayed * Altitude Alert (HI / LO) * Voltage alter (OV / UV) * Security coding of serial number * Option to power encoder only in mode C operation.
T2000 Transponder .....P/N 11-00990 .....$2,042.00
EC2002 Altitude Encoder .....P/N 11-05105 ..... $294.95
Harness T2000SFL Dynon .....P/N 13-08295 ..... $199.95
Harness T2000SFL Enigma.....P/N 11-12156 .....$79.25
Ameri-King Encoder AK-350 30K.....P/N 11-12010 ..... $169.95
T2000 Harness AK-350.....P/N 11-01361 .....$54.25
T2000 Coaxial Cable Kit 3.2M .....P/N 11-02862 .....$43.50

MICROAIR COMBO KITS

TRANSPONDER KIT TSO - Includes: T2000 Transponder, Ameri-King AK-350 Encoder, T2000 Wire Harness, Transponder Antenna, & Coax Kit Package.....P/N 11-02866.....$2,385.00
TRANSPONDER KIT NON TSO - Includes: T2000 Transponder, EC2002 Encoder, T2000 Wire Harness, Transponder Antenna, & Coax Kit Package.....P/N 11-05811.....$2,449.00
WORKS COMBO KIT- Includes: T2000 Transponder, EC2002 Encoder, Transponder Antenna, M760 Tranceiver, 4 place Voz Intercom, 2 wiring Harnesses, & Coax Kit Package.....P/N 11-02867.....$3,880.00

MICROAIR T2000UAV-L TRANSPONDERS

A special version of the T2000 Transponder, designed for operation in unmanned aircraft. This product is NOT TSO'd due to the OEM nature of the management software. It can help you to open ATC controlled airspace for your product, by making the UAV visible to ATC controllers. The UAV operator will be able to enter an ID code given by ATC, into the T2000UAV-L, to make the UAV uniquely identifiable. Transponder capability will make your UAV visible to TCAS operators, which affords great safety for commercial aircraft operators. The transponder will reply to all mode A and mode C interrogations, and will accept barometric altitude Gray scale (Gillham Code) data. It was designed for very low power consumption, which permits prolonged operation on battery. Can however still pulse out a 200W signal. Light at only 454g (16oz), and easy to istall. Available with either a standard BNC connector or standard TNC connector loaded on the rear face of the chassis.
T2000UAV-L TNC Connector.....P/N 11-07934.....$2,990.00
T2000UAV-L BNC Connector.....P/N 11-07935.....$2,745.00

PS ENGINEERING – AUDIO PANELS

PS ENGINEERING PAR100EX AUDIO PANEL

Eliminates the need for a stand alone radio. The small 4 X 4 X 2 inch remote mounted radio can be mounted anywhere. Includes their audiophile stereo intercom (4 places) and has their IntelliVox®, an automatic VOX. Enhanced IntelliVox® so it will accommodate even the noisiest of cockpits, including some open cockpits. You can pair any phone or Bluetooth® enable audio device. Fully independent power supplies. If you have a Navigator/Com, you can use it as Com 1 and use their remote radio as Com 2. Uses the same tray and connector as the GMA240, GMA340, PMA8000 series. However, there is additional wiring that is required to interface the Com Radio to the audio panel. Dimensions: Height: 1.3" Width: 6.25", Depth: 7.15" Weight: 1.34lb.. Note: Experimental Aircraft Only! P/N 11-09708.....$2,295.00

PMA 8000B AUDIO PANEL

Front-mounted, 2.5mm multipurpose jack give pilots unprecedented access to their audio panel, allowing connections to cell phones, portable music devices, or audio announcements directly into the audio panel. 6 user configurations that are front panel selectable. Original Karaoke Mode™ can be activated by pressing the front panel "Mute" button, allowing the music to be placed in the background while interruptions to the music will be eliminated. Pilot can receive and transmit on the selected VHF COM with ATC as well, for seamless integration in the cockpit. (Cellular telephone use in flight is not permitted, but remains a convenient and safe way to contact air-traffic control or a weather briefer while on the ground.) Six different configurations can be selected from the front panel. Internal Recording System (IRS) is now standard equipment. Backward compatible with the PMA 8000. Note: Use of the front panel jack is restricted to advisory information only, from portable systems. Signals required for certified equipment must be interface in accordance with their specific installation manuals.Specifications: Height: 1.3 inches, Weight: 6.25 inches, Depth: 7.15 inches, Weight: 1.34 pounds, Power Required: 12 to 24 VDC, Warranty: 3 Years, Unit is TSO'D.

PMA 8000B Audio Panel.....P/N 11-04354.....$1,595.00
PMA 8000BT Bluetooth capability. .....P/N 11-08537.....$1,795.00
Music Cable.....P/N 11-04377.....$28.95
Cell Phone Cable.....P/N 11-04376.....$28.95

PS ENGINEERING PMA8000D AUDIO PANEL

The PMA8000D is a ship set of two. With digital interface control, the pilot is always in control while allowing the copilot to off load not only radio communications, but also allow access to the passengers without interrupting the pilot. With two independent Bluetooth® interfaces, any one of a number of configurations will allow distribution of telephone and music. And like all of our PMA8000 series, there are front panel configuration that allows both the pilot and copilot to configure the intercom to best suite the needs of the cockpit crew and passengers. P/N 11-10774.....$6,995.00

PS ENGINEERING PMA8000C AUDIO PANEL

The front-mounted, 2.5mm multipurpose jack give pilots unprecedented access to their audio panel. Connect any Bluetooth® enabled phone into the audio panel for unprecedented amount of flexibility, both for phone calls as well as music streaming. It may also be possible to connect two different Bluetooth® devices at the same time. Three different configurations can be selected from the front panel, such as how the music is distributed, the way the intercom functions, and selecting the new Monitor Function. Monitor mode allows the pilot to designate one com radio as primary, while having the second com as the secondary audio source. When there is radio activity on the primary radio, the secondary com radio will temporarily mute. The Monitor mode will change your IFR approach environment, eliminating having to try to decipher two simultaneous radio receptions.

P/N 11-10773.....$1,895.00

PS ENGINEERING PAR200 AUDIO PANEL WITH COM RADIO

First FAA Certified Audio Panel with Com Radio! Combines an audio control panel, high fidelity 4-place stereo intercom with IntelliVox®, Bluetooth® connectivity, and a remote mounted EASA/FAA Certified Trig Avionics VHF aviation communications transceiver. Included in the audio panel is a highly acclaimed 4-place IntelliVox intercom. Even has the ability to set it for unusually high noise environments. Even open cockpits. A built-in 10 Watt speaker amplifier allows headset free aircraft radio listening. Included is a trademarked Bluetooth® technology; pairing of phone or Bluetooth® enable audio devices is easily and wirelessly achieved. P/N 11-11978.....$2,595.00

PS ENGINEERING PMA 6000B SERIES AUDIO PANEL / INTERCOMS

4-place mono intercom and now sports the same style tray and chassis the PMA8000B uses. The new sleek bezel is populated with tactile Elastomeric pushbuttons We have also changed from the two 44-pin Molex connectors to a single 44-pin sub-D connector, making the harness a lot easier to build. ..... P/N 11-08074 ..... $995.00

Call For Special Prices!

PMA 7000B/7000H AUDIO PANEL

Note: Slide in replacement for KMA 24 & KMA 28. Nice for upgrading an existing Bendix/King KMA 24 audio panel. KMA 24 pin compatible. None of the existing wires going to the KMA 24 have to be disturb. Renown 6-place IntelliVox® automatic Voice Operated Relay (VOX) intercom system. Provides 3-com capability with the option to easily convert Com 3 to a full duplex cellular telephone interface. Also has the pioneered "Split Mode". Allows the pilot to be on Com 1 while the copilot is on Com 2. Also expandable to accommodate up to 12 places (10 passengers) with the addition of the 11606 IntelliPax. Has four un-switched and un-muted inputs. * Height: 1.3 inches * Width: 6.25 inches * Depth: 6.8 inches * Weight: 1.5 inches * Power Requirements: 12 to 24 VDC * Warranty: 2 Years * Unit is TSO'D. PMA 7000H was designed specifically for helicopter and other applications where large seat count and high end-low cost capabilities are required. Adds 3 more passenger positions (total of 7 with Pilot and Copilot seats), Cockpit Voice Recorder (CVR) output, and Push-To-Talk Intercom (PTT-ICS) function. (better known as Hot-Mic) * Height: 1.3 inches * Width: 6.25 inches * Depth: 6.8 inches * Weight: 1.5 pounds * Power: 12 to 24 VDC * Warranty: 3 years * Unit is TSO'D

PMA7000B Audio Panel ..... P/N 11-01635 .....$1,395.00
6 Place expansion for 7000..... P/N 11-02544 ..... $399.95
7000CD Audio Panel with CD and MP3..... P/N 11-01850 .....$2,099.00
7000H Audio Panel..... P/N 11-07001 .....$2,099.00

PAC 24 AUDIO PANEL/INTERCOM

Designed as an upgrade/replacement for the popular KMA24 –71. Many of the enhancements include; a powerful headset audio amplifier, and high-performance IntelliVox® intercom, dual audio capability in a single box, full duplex mode for wireless operations, and expansion capability with stereo IFE input. Can accommodate 5 transceivers. A monaural system, the PAC24 can include a music input. SoftMute™ silences music during radio traffic, but allows music other times. Incorporates a split mode that will allow a single audio panel to separate two pilots on different transceivers. When combined with IntelliPax® expansion system, the dual PAC24 can be a 14-place system. The audio amplifier is capable of providing 120 milliwatts (mW) into general aviation headphones..... Horizontal Mounting.

P/N 11-01293.....$1,995.00
Vertical Mounting ..... P/N 11-05507.....$2,195.00

PS ENGINEERING ACCESSORIES

PS Engineering cellphone cable..... P/N 11-04376..... $28.95
PS Engineering music cable..... P/N 11-04377..... $28.95
Digital Recorder Aural Warning System w/ 4 unswitched inputs
P/N 11-05158.....$499.95
FM Radio Adapter (allows interfacing of non-standard aviation radios)
P/N 11-05159.....$379.00
4 Channel Summing Amplifier..... P/N 11-05160.....$195.00

PS ENGINEERING AUDIO PANEL PMA5000EX

Designed specifically for the experimental and LSA owners. PMA5000EX provides an unprecedented level of price/performance for the homebuilt. Capabilities: • IntelliVox® automatic VOX system with selectable "Extreme • Noise Capability" • Cellular telephone input with "DuTel" distribution • Monitor Mode allows automatic muting of non-primary radio • Front panel utility jack for phone • Split mode for dual audio panel capability • 2 - Differential, hi-fidelity stereo music source inputs • 3 - Isolation modes • 4 - music mute modes • 5 - unswitched inputs • Dedicated front panel music volume control • Selectable music distribution for passengers • 2 - Front panel switched inputs • 60 second auto-mute mode • RAM (Radio Master Mute) • 1-year Pro-Support Warranty. P/N 11-08289.....$895.00

MB 10 MARKER BEACON RECEIVER

MB 10-is a 3-light 75 MHz Marker Beacon receiver and indicator. This provides the necessary Marker Beacon lights and audio indications necessary for an Instrument Landing System (ILS) approach. A switch labeled Hi/Lo/TST allows the pilot select high or low sensitivity as well as test and mute modes. * Height: .95 inches * Width: 2.80 inches * Depth: 4.85 inches * Warranty: 1 year * Unit is TSO'D

Standard.....P/N 11-05621 ..... $695.00
Remote Mount.....P/N 11-10014 ..... $695.00

PS Engineering audio panels and intercoms can be sold over the counter but must have a PS Engineering dealer make the harness or the warranty on the unit is void.
Harnesses can be ordered from PS Engineering direct or when ordering from Aircraft Spruce.

AV

RADIORAX THE REVOLUTIONARY AVIONICS RACK SYSTEM

Radiorax provides flexibility and ease of installation for panel mount avionics. The radiorax system consists of anodized slotted rails, stainless nuts, structural strength tray screws that are four times stronger than conventional screws used in aviation, and a stainless capture system that holds each nut where it is needed during assembly. The installer is able to position the nuts in the slot exactly where they are required to install each tray. Once installed, the trays can be easily moved until the screws are fully tightened. Additional nuts can be stored in the slots for future avionics additions. RadioRax provides great strength, ease-of-alignment, easy change and modification, ehanced quality, owner satisfaction, and is very cost effective.

Description	Part No.	Price
Radiorax Kit 1010-8 for Exp. A/C	11-01376	$195.00
RK1000 Single Stack STC Kit-Standard Rail	11-01855	$375.25
RK1010 Single Stack Kit-STC for Exp. A/C	11-01856	$375.25
RK1020 Single Stack STC Kit-STC Exp. A/C	11-01858	$375.25
RK1030 Single Stack STC Kit Cirrus/Lancair	11-01860	$375.25
RK2000 Dual Stack STC Kit	11-01862	$467.40
RK3000 Triple Stack STC Kit	11-01864	$565.25
Single Rail - Special Order	11-01866	$280.25
RX100 Tray Tool Kit	11-01867	$38.00
RK1005 Cessna Kit	11-02308	$467.40
RK1040 Single Stack	11-02309	$565.25
RK2010 Kit -18" dual stack,flange,FAA-PMA,STC'd	11-02608	$467.40
RK2015 Kit - 18" dual stack, flanged outer,FAA-PMA,STC'd	11-02609	$467.40
RK2020 Kit -18" dual stack, reduced outer,FAA-PMA,STC'd	11-02610	$467.40
RK2025 Kit -18" dual stack, reduced outer,FAA-PMA,STC'd	11-02611	$467.40
RK3010 Kit - 18.0" triple stack, flanged outer + Full Dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02612	$565.25
RK3015 Kit - 18.0" triple stack, flanged outer+reduced dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02613	$565.25
RK3020 Kit - 18.0" triple stack, flanged outer + Full Dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02614	$565.25
RK3025 Kit -18.0" triple stack, reduced outer+reduced dim. Center Rail Tray Mount Kit - FAA-PMA, STC'd	11-02615	$565.25
RK4000-12 Kit - Standard Closeout Panel - Chem Film - 12" Kit - FAA-PMA, STC'd	11-02616	$166.25
RK4000 - 12A Kit - Standard Closeout Panel - Black Anodized - 12" Kit - FAA-PMA, STC'd	11-02617	$185.25

VAL AVIONICS NAV 2000 VHF RECEIVER

Turning back to a more traditional design ,the COM 2000 features dual concentric knob controls, displayed active and standby frequency with push button flipflop, 15 memory locations with user defined alphanumeric channel identifiers and a manual squelch control. It's 3/8" character display is easy to read from any angle and in any lighting condition. This mighty little radio's all metal construction is designed to serve all your communication needs well into the future. • Large 3/8" display character • 8 watt transmitter • 1 inch high and 9 inches long • Dual concentric knob controls • 15 memory locations with user-defined alphanumeric channel identifiers • Non-volatile memory • Manual squelch control • All machined aluminum construction • RS232 interface • Photocell dimming. P/N 11-10569.....$1,165.50

VAL AVIONICS COM 2000 VHF TRANSCEIVER

COM 2000 continues the tradition of hard working, affordable avionics by Val Avionics. The smallest panel mounted COM radio available today. Features dual concentric knob controls, displayed active and standby frequency with push button flip-flop and a manual squelch control. It's 3/8" character display is easy to read from any angle and in any lighting condition. All metal construction. 0 P/N 11-06411 .....$985.00

FC-1 FLIGHT COMPANION

Multi functional electronic instrument that incorporates a sophisticated audio interface system with a high level input to accept external MP3, GPS and Cell phone products, a highly accurate digital Altitude Alert System, a digital Tank Timer for fuel Management, and a power management system designed to get the most out of its on board battery. By plugging the unit directly into the existing headphone jacks (phones and mic) the unit performs a seamless interface connection that allows the pilots headphones to continue to use the ships audio while at the same time provides the Aux I/O to be used with an MP3, Iphone, or Blackberry. Internal Altitude Alert System is built around the highly accurate Bosch Digital I2C Pressure Sensor. The accuracy of this device allows the FC-The Tank Timer System that is supplied with the FC-1 is designed to keep the pilot aware of how much fuel is being burned. The FC-1 system uses a common 9 volt alkaline battery.

Description	Part No.	Price
Matchbox Flight Companion FC-1	11-09630	$259.00
Matchbox Altitude Alert AA-1	11-09634	$126.95
Matchbox Tank Timer TT-1	11-09633	$67.95
Matchbox Audio Interface AI-1	11-09631	$139.95
DVM-828 Voltage Monitor	11-09998	$36.85

VAL AVIONICS VOLTAGE STEP DOWN CONVERTOR

This unit is a step down voltage converter that drops 28 volts DC down to 13.8 volts DC. This unit would be required to operate either our COM 760 TSO or INS 422 TSO units in an aircraft or vehicle that are 28 volts DC. Specifications: • Physical Dimensions: L 4.0 " (10.16 cm) x W 4.625" (11.75cm) x H 1.250 (3.18cm)• Weight: 0.75 lbs• Power Requirements: Current 2.0A Continuous with 5.0A Intermittent P/N 11-02963 ..... $165.00

VAL AVIONICS NAV INS 429 WITH VOR/LOC/GS/MB

The INS 429 is a high quality, multi-function, fully integrated navigational instrument displaying VOR, LOC, Glide Scope, Marker Beacon, and GPS/NAV inputs. Not only does it sport its own internal receivers, it will also display course deviation information from an external NAV or GPS source. A perfect solution for a crowded panel. Not TSO'D (for experimental aircraft only).
P/N 11-05592..... $1,795.50

VAL AVIONICS COM 2KR REMOTE VHF TRANSCEIVER

The innovative COM 2KR from VAL Avionics is the first radio to offer complete user interface through the electronic flight instrument system (EFIS) display. This provides full control of transmit and receive frequencies as well as volume and squelch from the EFIS, allowing the COM radio to be removed from the instrument panel.
The COM 2KR is the next step in general aviation communications. As with all Val Avionics products, the COM 2KR is crafted from a solid brick of aluminum for maximum durability and performance for years to come. Supporting both 14- and 28- volt systems, the COM 2KR is outfitted for flexible installation in nearly all light-sport, experimental and type-certificated aircraft. 8 watt transmitter. Size: 8.75"L x 5.9"W x .86"H. P/N 11-11457.....$849.00

AV

AVIONICS INNOVATIONS AICD III AM/FM/CD/MP3 PLAYER

The AICD III is the latest way to listen to your favorite CD/MP3 or radio station in flight. Designed for aviation & has an attractive brushed aluminum bezel to enhance your instrument panel. Comes with easy install kit to mount directly into your instrument panel.

Features: * FAA/PMA Approved * 24 Station Presets * Automatic Frequency Store * Seek Up/Down Tuning * Electronically Controlled Volume/ * Bass/Treble/Balance * 11-33 Volts DC * 6.25 x 2 x 9.25 Inches * Weighs 3.5 Pounds * Can be connected to "Sirius" Satellite Receiver or AI-8 Changer * Aux. input for an mp3 player * Remote Control

AICDIII AM/FM CD/MP3/WMA US.....P/N 11-05151 .....$1,613.00

AI – DVD/CD PLAYER

Remote mounted multi-regional DVD drive which allows you to view DVDs from any region around the world. The unit also is a CD/MP3 player.

Requires PCU (Passenger Control Unit) for operation. PN 11-04495

Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Antenna: Externally mounted (included) * Weight: 1.2 lbs. * Dimensions: 6.25"(L)x5"(W)x1.25"(H)

P/N 11-04496..... $4,491.00

AI–PASSENGER CONTROL UNIT

Passenger Control Unit with IR remote. Controls remote-mounted "I.C.E." components. Sirius© Satellite Radio. DVD/CD, or MP3 player. Two distinct channels allow some passengers to receive one source while others receive a second source. Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Weight: 0.75 lbs. * Dimensions: 125"(L)x5.5"(W)x2.00"(H)

P/N 11-04495 ..... $1,561.00

AI – VIDEO AMP

Remote mounted video amp with 2 video inputs & 6 video outputs. 6 individual 12 VDC power supplies at 0.75 amps each. Specifications: •Operating voltage: 18-33 VDC • Current Draw: 2.5 Amps • Wt: 1.0 lbs. • Dims: 6.25"(L)x2"(W)x1.75"(H)

P/N 11-04498 ..... $1,221.00

AI - A/V VIDEO SWITCH SYSTEM

This new Cabin Class System will allow you to switch between 4 video & 6 audio sources simultaneously from up to 8 seat stations. Features: •4 video (composite) inputs •6 audio inputs (adjustable input levels) • PA override •Up to 8 passenger control stations • Separate volume control at each station • Listen or view any source fom any station • Activate an external amplifier • Custom plating available.

4 Seats..... P/N 11-01174 ..... $3,665.00
6 Seats..... P/N 11-01175 ..... $4,865.00
8 Seats..... P/N 11-01176 ..... $6,059.00

AI – SATELLITE RADIO MODULE

Remote mounted Sirius© Satellite Radio module with antenna. 120 streams of coast-to-coast digital quality sound including NFL and NASCAR (available 2007). Specifications: * Operating Voltage: 11-33 VDC * Current Draw: 0.2 Amps * Antenna: Externally Mounted (included) * Weight: 1.2 lbs. * Dimensions: 6.25"(L)x5"(W)x1.25"(H)

P/N 11-04497..... $2,886.00

AI - AMPLIFIER

The AI-Amplifier is the perfect companion to all our entertainment products. Enjoy your favorite music without the extra weight and confinement of headphones. Specifications: * FAA/PMA Approved * 20 Watts Per Channel Maximum * Low Distortion * 28 Volt * 2 Channel Output * 5.75 X 5 X 2 Inches * Weighs 1.5 Pounds. 28V

P/N 11-19504..... $1,193.00

BATTERIES AND BATTERY CHARGERS FOR HANDHELDS

Battery Model	Description	Part No.	Price
For Icom A24/A6			
BP-210N	7.2V 2000mAh Ultra long life	11-08251	$42.75
BP-211N	Lightweight, Ultra ling life. Li-On charger required.	11-08254	$49.95
EMS-211	Rapid Desktop Cgr for BP-211/N	11-08256	$49.95
For ICOM A23/A5 Handheld aviation radios-			
BP-197H	Alkaline Battery pack	11-01082	$23.95
BP-200XL	9.6v 1450 mAh long Life Ni-MH	11-06351	$55.85
BP-200L	9.6V 850mAh	11-08274	$43.50
CP-12L	12VDC Cig Lighter for A5	11-08249	$15.95
For ICOM A-4 Handheld aviation radios-			
BP-196	9.6v 1500 mAh pk	11-00227	$49.95
EMS-196	Desktop Fast Charger BP-195/196	11-08248	$49.85
For ICOM A-22 &A-3 radios-			
CM-166	NiMH Battery 12.0v 1200 mAh	11-00228	$49.95
EMS-166	Desktop Charger for CM-166	11-08236	$51.95
EC-166	Wall charger for CM-166	11-08234	$11.85
BC-79A	Desktop Charger	11-18557	$59.95
For ICOM IC-A14 / IC-A14S Handheld aviation radios-			
BP-232N	Operating Time: 15.5 hours	11-08231	$42.75
For ICOM A-20, A-21, & Delcom-			
CM-7x	13.2v 1000 mAh pk	11-00230	$49.95
IC-WC	Wall charger for CM-7 / CM-7X	11-08237	$11.95
BP-D1x	12.0v 1000 mAh pk	11-00319	$76.00
IC-8	8 cell AA case 3-1/4" tall	11-08246	$26.75
IC-CP	Car Power/Charge cord	11-00351	$13.85
For ICOM R-1 radios-			
BP-83	7.2v 600 mAh pk	11-00233	$39.95
BP-83xh	7.2v 1500 mAh pk	11-00234	$49.50
BC-79A	Desktop Quick Charger	11-18557	$59.95
Icom Chargers			
CP-11L	DC Power/Charge Cord for ICOM IC-T90A, IC-91AD, IC-A24, IC-A5	11-06348	$29.95
EMS-201	7.2V thru 13.2V Ni-cd & Ni-MH	11-08245	$49.95
EMS-210N	Smart charger for ICOM	11-06350	$54.95
EMS-232	Rapid Desktop Charger for Icom-style Lithium ION Bttys	11-08233	$48.75
EMS-30i	Desktop smart-quick charger.	11-06352	$52.50
For Yaesu Aviator Pilot & Aviator Pro nav/com radios-			
FNB-41xh	9.6v 1000 mAh pk	11-00237	$44.85
FNB-47xh	7.2v 1800 mAh pk	11-00238	$49.95
FNB-41xs	9.6v 1450 mAh pk	11-06354	$51.65
EMS-41/47	Rapid Cgr for FNB-40/41/47	11-08244	$52.00
FNB-80LI	7.2V 1600mAh Yaesu & Vertex	11-08268	$45.50
CBE-41	Battery Eliminator	11-06355	$24.50
CBE-80	Battery Eliminator Cig Lighter	11-08269	$23.95
BC-601c	Smart Quick Charger	11-00239	$54.95
E-DC-5BA	DC Power Cord, Cig Lighter	11-08241	$18.75
EM-57-83	Super Desktop Charger	11-08239	$51.50
For Bendix/King radios-			
BP-KX99	10.0v 1400 mAh pk	11-00240	$45.50
KX-99XH	10.0V 1500 mAh	11-08257	$49.95
IC-CP	Car Power/Charge cord	11-00351	$13.85
KX-99	Battery case, 8-cell AA (BP-99A)	11-08258	$23.95
For STS handheld radios-			
BP-STS+	7.2v 1400 mAh pk	11-00241	$38.75
WC-STS	Wall Charger	11-00352	$20.75
For Bearcat/Uniden 100/200/250XLT-			
For Bearcat/Uniden 2500XLT, 3000XLT, & 3500XLT-			
BP-2500x	6.0v 1000 mAh pk	11-00322	$57.85
For Bearcat/Uniden Trunk Tracker & Sportcat-			
BC-120	4.8v 1000 mAh pk	11-00323	$17.25
BC-120x	4.8v 1500 mAh pk	11-00324	$27.95
BP-120XE	4.8V 2000 mAh Long Life	11-08272	$31.85
BP-120XX	4.8V 2500 mAh	11-08273	$29.50
BP-120 80	4.8v 800 mAh pk	11-08270	$13.85
BP-120 110	4.8v 1100 mAh pk	11-08271	$18.75
For Santec/Narco radios-			
BP-800	9.6v 600 mAh pk	11-00242	$32.50
BP-800sh	9.6v 1000 mAh pk	11-00325	$37.95
Standard C228A/C528A/C628A, etc.			
CNB-152XS	12V 1800mAHr NiMH	11-08261	$49.95
CNB-152XH	12V 1200mAh Long Life	11-08259	$42.50
CSA-181	Quick Desktop Charger	11-08266	$49.95
For Bose Aviation Headset Series 1			
BP-A	14.4v 1250 mAh	11-00243	$80.00
Battery Eliminators			
CBE-152	DC Battery Eliminator for standard-ADI-JRC radios	11-08262	$23.95
CBE-196	Battery Eliminator for ICOM	11-08247	$23.85
CBE-83	12VDC. 5W, Voltage & Current limiting, & noise filter!	11-08238	$22.95

AV

RAM MOUNTING SYSTEMS
PATENTED & PATENT PENDING

RAM Mounts are the revolutionary patented ball and socket mounting system that allow you to mount just about anything anywhere in your cockpit. Providing special attachments for yokes, glare shields and more, now you can mount your accessories where you want them. RAM Mounts are up to speed with the latest aviation technology products. Whether you use an iPad, PND, or PC, RAM has you covered. Ordering a custom RAM Mount is easy!

696 on Yoke

iPad on Yoke

X-Grip with Lil Buddy

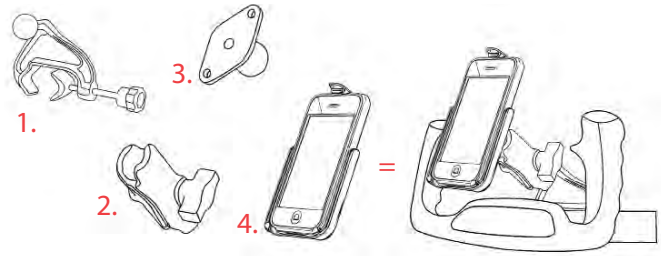
Note: The "U" at the end of each model number means that the unit comes unpackaged.

BUILD YOUR RAM MOUNT SYSTEM ONLINE

Use our simple three-step process below to create your own custom RAM Mounting system. First, select which device you want mounted. Then, the required adapter will be automatically added. Then, choose the required arm for you mount. Next, choose how you would like the system to be mounted to your aircraft. Finally, add all the items to your cart and checkout. You can also add any combination to your cart: half-systems, full-systems, or individual parts. Simply piece them together when you receive your order and you're ready to go!
See www.aircraftspruce.com

BUILDING YOUR RAM MOUNT

Building and ordering your RAM Mount is easy. All you need to know is what you need to mount and where you would like to mount it - we take care of the rest. Building a RAM Mount solution usually consists of four parts: base, arm, adapter, and cradle/holder. Use the example image to the right for reference.



STEP 1: BASES

Model No.	Description	Part No.	Prices
RAM-B-224-1U	RAM 3.3" Dia Suction Cup w/Ball	11-06449	$16.88
RAP-B-121BU	RAM Universal Yoke Clamp w/Ball	11-05866	$17.66
RAM-B-202U	RAM Round Base w/Ball	11-07069	$6.49
RAM-B-231ZU	RAM Rail Base w/ball & Zinc U-bolt. 3/4" - 1-1/4" dia. rails.	11-03460	$13.20
RAM-B-108B-STRAP40U	RAM V-Base Rail Yoke Clamp for Breechcraft and Bonanza	11-09763	$15.75
RAM-B-259U	RAM 1" Ball Glareshield Base	11-09852	$20.29

STEP 2: ARMS

RAM-B-201U-A
2-7/16" LONG

RAM-B-201U
3-11/16" LONG

RAM-B-201U-C
6" LONG

Model No.	Description	Part No.	Prices
RAM-B-201U-A	RAM Double Socket Short Arm for 1" ball bases	11-03458	$12.56
RAM-B-201U	RAM Double Socket Med. Arm for 1" ball bases	11-01255	$13.20
RAM-B-201U-C	RAM Double Socket Long Arm for 1" ball bases	11-09323	$18.72
RAM-201-D	RAM Double Socket Long Arm for 1.5" ball bases	11-05490	$38.00

STEP 3: ADAPTER

RAM-B-202U
ROUND
ADAPTER

RAM-B-238U
DIAMOND
ADAPTER

Model No.	Description	Part No.	Prices
RAM-B-202U	RAM Round Base w/Ball	11-07069	$6.49
RAM-B-238U	RAM Diamond Adapter w/Ball	11-00471	$6.07

IS YOUR BACKUP READY?

RAM-B-224-1U
Suction Cup

RAM-B-108B
-STRAP40U
V-Base

RAP-B-121BU
Yoke Clamp

RAM-B-202U
Flat Surface
Base

RAM-B-231ZU
U-Bolt Rail
Base

STEP 4: CRADLE/HOLDER

Model No.	Description	Adapter	Part No.	Prices
RAM-HOL-AP9U	RAM Holder for Apple iPhone 4G	Diamond	11-09454	$7.73
RAM-HOL-AP10U	RAM Holder for Apple i-Pod Touch 4th Gen	Diamond	11-09764	$11.50
RAM-HOL-AP8U	RAM Holder Apple iPad & IPad 2	Round	11-08577	$20.84
RAM-HOL-AP8LU	RAM Locking Holder Apple iPad & iPad 2 - cradle with dial combination lock	Round	11-08578	$46.87
RAM-HOL-AP7U	RAM Holder Apple iPod Touch 2nd & 3rd Generation	Diamond	11-08583	$7.50
RAM-HOL-AP6U	RAM Holder Apple iPhone 3G/s	Diamond	11-08582	$8.14
RAM-HOL-AP4U	RAM Holder for Apple i-Pod Touch 1st Gen	Diamond	11-06432	$8.23
RAM-HOL-AP5U	RAM Holder for Apple i-Pod Nano Touch & Nano 3rd Gen.	Diamond	11-06433	$9.50
RAM-HOL-AP3U	RAM Holder for Apple iPhone 1st Gen.	Diamond	11-06431	$7.73
RAM-HOL-AP2U	RAM Holder for Apple i-Pod Nano 1st & 2nd Gen.	Diamond	11-06430	$9.80
RAM-HOL-TAB2U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09766	$21.85
RAM-HOL-TAB3U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09767	$23.64
RAM-HOL-TAB4U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09768	$22.17
RAM-HOL-TAB5U	RAM Universal Tablet Holder, Picture on next page	Diamond	11-09887	$23.51
RAM-HOL-GA38U	RAM Holder Garmin GPSMAP 695/696	Round	11-08576	$19.69
RAM-HOL-GA25U	RAM Holder Garmin Nuvi 200W & 250W, 2xxW & 2xxWT	Diamond	11-06471	$8.37
RAM-HOL-GA31U	RAM Holder Garmin Oregon	Diamond	11-08585	$8.46
RAM-HOL-GA5U	RAM Holder Garmin E-Trex	Diamond	11-01923	$11.32
RAM-HOL-GA7U	RAM Holder Garmin GPSMAP 176, 196, 276, 376, & 496.	Diamond	11-01925	$8.65
RAM-HOL-GA14U	RAM Holder Garmin 76C Series	Diamond	11-06477	$9.98
RAM-HOL-GA30U	RAM Holder Garmin Nuvi 880 850 860	Diamond	11-06475	$13.52
RAM-HOL-GA39U	RAM Holder Garmin Nuvi 3750, 3760T & 3790T	Diamond	11-09769	$18.35
RAM-HOL-GA41U	RAM Holder Garmin GPSMAP 62, 62S, &62ST	Diamond	11-09770	$8.83
RAM-HOL-SPO1U	RAM Holder Spot Satellite Unit	Diamond	11-07508	$10.58
RAM-HOL-SPO2U	RAM Holder Spot 2 Satellite Unit	Diamond	11-08581	$9.71
RAM-HOL-BC1U	RAM Holder for Electronics with Belt Clip	Diamond	11-01917	$10.40
RAM-HOL-PD3U	RAM Universal PDA Holder	Diamond	11-05488	$14.14
RAM-HOL-UN4U	RAM Universal Plastic Radio/GPS Holder	Diamond	11-06450	$17.70
RAM-HOL-MP1U	RAM Holder Multi-Pad™ (Note Pad holder)	Diamond	11-08579	$35.05
RAM-HOL-UN5U	RAM Spring Loaded Cradle For Iphone And Ipod Touch	Diamond	11-10087	$11.43
RAM-HOL-AP11U	RAM Cradle Apple iPhone 5	Diamond	11-11588	$7.55
RAP-B-202U-GOP1	RAM Holder with custom GoPro Hero Adapter	---	11-12021	$9.50
RAM-HOL-AP17U	RAM EZ-Roll'r Mount for iPad Air	Round	11-12358	$17.95
RAM-HOL-TAB12U	RAM iPad Mini Universal Tablet Holder with case	Diamond	11-12269	$20.50
RAM-HOL-ROTO1U	RAM Roto View adapter plate for tablets. Holder, Roto Plate, and adapter are needed.	Diamond	11-12452	$17.85

VISIT AIRCRAFTSPRUCE.COM FOR MANY MORE RAM MOUNTS!

RAM MOUNTING SYSTEMS

DEVICE CRADLES / HOLDERS

RAM-HOL-TAB-LGU
Ram Tab-Tite™ Universal Clamping Cradle for 10" screen tablets.
P/N 11-09767

RAM-HOL-UN9U
RAM x-Grip® III Universal Clamping Cradle for large tablets.
P/N 11-11239

RAM-HOL-TAB-SMU
Universal Small Tab-Tite™ Holder for 7" Screen Tablets.
P/N 11-09887

RAM-HOL-UN8BU
RAM Universal X-Grip® II Tablet Holder with 1" Ball for small Tablets.
P/N 11-11248

RAM-HOL-AP17U
RAM EZ-ROLL'R™ Model Specific cradle for the Apple iPad Air without case, skin or sleeve.
P/N 11-12358

RAM-HOL-UN10BU
RAM Universal X-Grip® IV Large Phone Holder with 1" ball.
P/N 11-12987

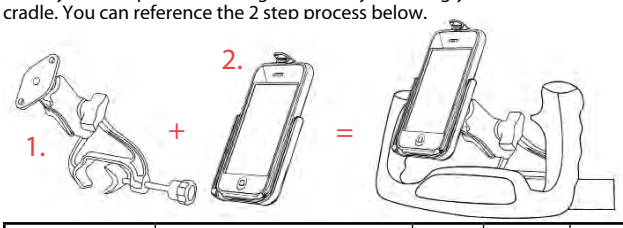
RAM BALL MOUNT AND RECTANGLE BASE - A double socket arm, 2.5" diameter round base, and 6.25" x 2" rectangle base. Rectangle base contains pre-drilled holes which will match up to many electronic devices and mounts, including Marine GPS, CB Radios, Ham Radios, Gimbal Brackets and more. P/N 11-05066..... $26.80

RAM MOUNT SUCTION CUP WITH 6 INCH FLEX ARM - 3.25" suction cup locking base, 6" flex arm and diamond base end. The suction cup base is designed to have a strong hold on glass and non-porous plastic surfaces, including RAM adhesive disks. P/N 11-03443..... $16.85

RAM BASE BALL & STRAP - 1" diameter rubber ball connected at a right angle to a v-shaped base, double socket arm and 2.5" base that contains the universal AMPs hole pattern. The base will accommodate rails from 1.0" to a maximum of 2.1" in diameter. P/N 11-05073..... $32.90

SPECIALTY MOUNTS

Order your complete mounting solution by choosing your mount and then cradle. You can reference the 2 step process below.



Model No.	Description	Adapter	Part No.	Prices
RAM-B-316-1-238U	RAM Universal Floor Mount	Diamond	11-09771	$34.60
RAM-B-131-202U	RAM Cessna Aircraft Seat Rail Mount	Round	11-09436	$112.65
RAM-B-131-238U	RAM Cessna Aircraft Seat Rail Mount	Diamond	11-09773	$113.16
RAM-B-131-G1	RAM Base Seat Rail Mount for GPS	Round	11-08838	$63.49
RAM-B-131B	RAM Aircraft Seat Rail Base	---	11-08838	$63.49

ACCESSORIES / MISC. MOUNTS

RAM-B-316-1-238U

RAM-B-131-202U

Model No.	Description	Part No.	Prices
RAM-B-132BU	RAM Self Leveling Drink Cup Holder. Requires purchase of base and arm	11-01334	$16.95
RAM-MAG-1U	Magnifying Glass for GPS. Intended for use with diamond adapter and cradle	11-04299	$32.98
RAM-CIG-LIGHT-8U	RAM 12 Volt Red/White Light Adaptor. Plugs into 12v receiver	11-08580	$6.13
RAN-B-202AU	1/4"-20 Camera Adapter Base. Requires purchase of base and arm	11-02080	$10.17

RAM SYSTEM IPAD MINI TO SUCTION MOUNT KIT

Kit contains: RAM Holder for Apple iPad Mini without Case (PN 11-11250), RAM Adapter Round Base with Ball (PN 11-07069), RAM Double Socket Arm for 1" Ball Bases (PN 11-01255), and RAM 3-1/4" Diameter Suction Cup Base with Twist Lock (PN 11-06449)

P/N 11-11519..... $43.00

RAM SYSTEM IPAD MINI TO YOKE MOUNT KIT

Kit Contains: RAM Holder for Apple iPad Mini without Case (PN 11-11250), RAM Adapter Round Base with Ball (PN 11-07069), RAM Double Socket Arm for 1" Ball Bases (PN 11-01255), and RAM Yoke Base with 1" Rubber Ball (PN 11-00484).

P/N 11-11520..... $48.00

RAM SYSTEM IPAD MINI TO GLARESHIELD MOUNT KIT

Kit contains: RAM Holder for Apple iPad Mini without Case (PN 11-11250), RAM Adapter Round Base with Ball (PN 11-07069), RAM Double Socket Arm for 1" Ball Bases (PN 11-01255), and RAM Glare Shield Base Mount(PN 11-09852).

P/N 11-11521..... $47.50

STRAP MOUNT & LITTLE BUDDY

Fast, simple, and cost effective are all things that describe the EZ-Strap and Little Buddy Mounts. Great for small devices like smart phones and PNDs. Simply choose your favorite EZ-Strap or Little Buddy and then choose any cradle/holder that incorporates the Diamond adapter pattern (diamond adapter purchase is not required).

RAP-SB-187U
EZ-Strap

RAP-SB-180U
Little Buddy

Little Buddy with X-Grip

Model No.	Description	Part No.	Prices
RAP-SB-180U	RAM Little Buddy Adhesive Mount	11-08584	$9.20
RAP-SB-187U	RAM EZ-Strap Rail & Yoke Mount	11-09774	$11.50

X-GRIP

The NEW RAM X-Grip is perfect for the modern pilot. Sleek, user friendly, and universal, the RAM X-Grip is the right cradle for the techno savvy pilot. Pats. Pend.

Features:

1. Spring loaded holder expands and contracts for perfect fit of your device.
2. Rubber coated tips will hold device firm and stable
3. Versatility of holder allows for attachment to many RAM-to-RAM ball mounts.
4. Single socket technology allows for multiple adjustment angles and articulation of device.

RAM-HOL-UN7BU

RAP-SB-180-UN7U

RAP-SB-187-UN7U

Model No.	Description	Part No.	Prices
RAP-SB-180-UN7U	RAM X-Grip w/Little Buddy	11-09775	$25.50
RAP-SB-187-UN7U	RAM X-Grip w/ EZ-Strap Mount	11-09776	$25.70
RAM-HOL-UN7BU	X-Grip Cradle w/1" Ball Adapter	11-09777	$24.15

ROTATING KNEEBOARD MOUNT FOR THE APPLE IPAD & IPAD 2

The mount consists of a leg kneeboard base, two straps for tight support, socket system and custom high strength composite cradle for the Apple iPad and iPad 2. Fits Apple iPad (1st Generation) without case/sleeve/skin & Apple iPad 2 (2nd Generation) without case/sleeve/skin.

P/N 11-10080..... $52.75

AV

LOBSTER MOUNTS

The "Shrimp" Series of mounts provide an economical solution for mounting mobile electronics. This basic system provides a minimal extension, and utilizes a tri-wing finger knob for locking and positioning. Our off-centered 1-1/4 inch ball-base (patent pending) provides adaptability that cannot be matched. The Shrimp mount extends as little as 2-1/2 inches from the mounting surface and can extend to about 5 inches. The "Shrimp" was designed to support devices up to 3 lbs, and is available with bolt-on, MC/ATV, and Suction bases.

UNIVERSAL MC-ATV CLAMP - Base only! For an additional anchor point we offer this universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/2 inch diameter (by adding a 1/4-20 x 3" bolt, this base will fit up to 1-3/4 tube). This rugged base is made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. Weight - Unit 0.5 lbs.

P/N 11-04709 ..... $24.85

UNIVERSAL CRADLE - The Cradle comes with four grip fingers and one stop finger, which are capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For longer devices, the fingers on top could be left off, allowing the device to overhang the cradle base. This product, like our other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04710 ..... $16.75

SHRIMP SERIES BOLT-ON WITH CAMERA TOP - A removable 1/4-20 camera stud, universal mounting ball-base and mounting flange, lanyard loop; accommodates the AMPS bolt up pattern (AMPS is a 1-1/2" by 1-3/16" screw hole pattern used in many portable electronic products). Aluminum alloy and reinforced composite parts with stainless steel hardware. P/N 11-04711 ..... $16.75

SHRIMP SERIES MC/ATV CLAMP WITH CAMERA TOP - Same as our Bolt-On model, while adding a universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/4 inch diameter (by adding a 1/4-20 x 3" bolt, this base will fit up to 1-3/4" tube). This rugged base is made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. P/N 11-04713 ..... $31.50

SHRIMP SERIES BOLT-ON + CRADLE - Universal mounting ball-base and mounting flange, lanyard loop, along with our cradle for hand-held devices. The Cradle (UN-198) comes with four grip fingers and one stop finger, which are capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base. Like our other products, the SH-259 is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04715 ..... $28.50

SHRIMP SERIES SUCTION + CRADLE - Our Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. Cradle (UN-198) comes with four grip fingers and one stop finger, capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base. This mount, like our other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important. P/N 11-04716 ..... $38.90

SHRIMP SERIES MC/ATV + CRADLE - A universal rail-clamping base, designed to fit square or round tubing from 3/4 inch to 1-1/4 inch diameter. Made from extruded aluminum, an aluminum ball, and includes stainless steel hardware. Cradle comes with four grip fingers and one stop finger, capable of being positioned in any of the eight slots on the body. Rubber pads for the grip fingers and stainless steel hardware are provided. In the short direction, the grip fingers are adjustable from 1-1/2" to 3-1/4", and in the long direction, the grip fingers adjust from 4-1/2" to 5-1/2". For larger devices, the finger may be left out at the top allowing the device to overhang the cradle base..P/N 11-04717 ..... $38.90

UN-327 SUCTION BASE - Suction Base Only, If you are already using a Bolt-On or MC/ATV base, this allows you to easily transfer your device to your car or any place with a smooth surface. The Suction Base attachment ball is capable of being titled for extra versatility in positioning your device. This base, like the other products is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are import.

P/N 11-06616 ..... $24.95

SH-334 SHRIMP SUCTION MOUNT WITH CAMERA TOP - Our Suction Base attachment ball is capable of being tilted for extra versatility in positioning your device. The Camera Top (UN-310) has a removable 1/4-20 camera stud. It also features a mounting surface with holes and slots, which accommodate the AMPS standard (1.496" x 1.181") pattern for direct attachment to numerous electronic devices. This base, like our other products, is produced for use in aviation and marine environments where being compass compatible and corrosion resistant are important.

P/N 11-06617 ..... $31.50

UN-303 ROLL BAR CLAMP - Base only! For your ATV, golf cart steering column or other applicable with 1-1/2" to 2-1/2" tubing. This rugged base is made from aluminum extrusion, an aluminum ball, and zinc plated steel hardware. Note that this is not compass friendly.

P/N 11-06618 ..... $27.85

UN-310 CAMERA TOP - Camera Mounting surface that can also be used for mounting other devices. If you are already using a Universal Cradle (UN-198), this allows you to easily use your mounting system for other purposes. The holes and slots in the flange accommodate the AMPS standard pattern as well as several size u-bolts. This base, like our other products is produced for use in aviation and marine environments where being compass-compatible and corrosion resistant are important.

P/N 11-06615 ..... $9.90

ANGEROLE INSTRUMENT PANEL MOUNT

The photo illustrates the Model 241 040 fitted to a blank instrument panel. An adaptor plate (included with the mount) fits any standard 2-1/4"" instrument panel hole so, generally, it can be fitted without any modifications to your airplane. If your application needs it, we can supply this mount with a 3-1/8"" panel adaptor plate.

If you don't have an unused panel hole, a viable alternative is to drill two holes and simply bolt the mount directly to your panel. The "footprint" area is only 2" x 0.5" so there's probably going to be somewhere you can make it fit. Naturally, you need to be certain this is appropriate, sensible and legal for your installation before drilling holes in your airplane.

P/N 11-07238 ..... $192.75

AV

ICOM HANDHELD TRANSCEIVERS

ICOM IC-A24 NAV/COM

Simple one-handed operation is the most essential feature of the IC-A24. The large display shows both letters and numbers and is easy to see, making for fast frequency recognition. The display is backlit, and so is the keypad. The light stays on until you turn it off - a very handy feature for flying at night! "Flip-Flop" Channel Recall - The IC-A24 stores the last 10 channels used. You can easily recall those channels by pushing the "flip-flop" recall buttons on the front panel. It is convenient for switching between several channels, such as Nav and Com channels. VOR Navigation - The IC-A24 has VOR navigation functions. The DVOR mode shows the radial to or from a VOR station and the CDI mode shows the course deviation to/from a VOR station. You can also input your intended radial to/from the VOR station and show the course deviation on the display.

IC-A24 Nav/Com (110V) - Includes Nicad battery, wall charger, belt clip, carrying case, headset adapter & handstrap. ..... P/N 11-02942 ..... $279.00

IIC-A24 Nav/Com (220V) ..... P/N 11-04355 ..... $302.00

ICOM IC-A6 COM

Simple one-handed operation is the most essential feature of the IC-A6. The large display shows both letters and numbers and is easy to see, making for fast frequency recognition. The display is backlit, and so is the keypad. The light stays on until you turn it off. The IC-A6 stores the last 10 channels used. You can easily recall those channels by pushing the "flipflop" recall buttons on the front panel. External DC Power Jack - An external DC power jack allows for operation with the wall charger or the cigarette lighter cable. When the battery pack is installed, simultaneous charging during operation is also possible. Water Resistant Construction - The water resistant construction provides reliable operation in wet conditions. Features: • 200 memory channels (10 banks of 20 channels) allows you to load in up to 10 separate flight plans. 6 character alphanumeric for channel names. • Dedicated 121.5 "emergency" key. • All NOAA weather channels preprogrammed. •Frequency range: Tx/Rx 118.000-136.975MHz • Weather 161.650-163.275MHz • Wt: 15.02oz. • Dims: 2-1/8" x 5-3/32" x 1-13/32"

IC-A6 Com (110V) - Includes Nicad battery, wall charger, belt clip, headset adapter & handstrap. ..... P/N 11-02944 ..... $253.00

IC-A6 Com (220V) ..... P/N 11-03178 ..... $246.95

ACCESSORIES FOR IC-24, A6, A14/S

Model	Description	Part No.	Price
CP20L	Cigarette Lighter adapter. DC-DC Converter. Will charge from 12-24 volts	11-03604	$51.95
OPC-478	Programming Cable	11-18563	$34.50
BP-210N	Icom Battery	11-04385	$59.75
LC-159	Protective Case for A24 or A6	11-05003	$34.75
BC-144N	110V Charger for IC-A24 & IC-A6	11-04847	$53.50
OPC-656	OPC-656 DC Power Cable. For using the BC-121N with a DC power supply. (12–20 V DC required). Not an aircraft power cable for radios.	11-05022	$9.75
BC-167SA	80AD Wall Charger 117V	11-09311	$27.95
BC-119N	ICOM BC-119N Fast Charger for BP-209N, BP-201N, AND ORBP-211N. Desktop charger and adapter cup BC-145A. Must purchase adapter cups for other models.	11-04773	$59.25
BC-121N	6 Unit charger Kit for IC-A24 & IC-A6	11-05020	$229.95
MB-86	Swivel Belt Clip for IC-A24 & IC-A6	11-05002	$8.75
MB-103	Icom Belt Clip	11-03494	$9.95
HM-173	Speaker Mic for IC-A6 & IC-A24	11-05832	$83.75
PTT-SW	Icon Headset PTT Switch for IC-A6, IC-A3, IC-A4, IC-A5, IC-A22, IC-A23, IC-24A	11-18529	$19.50
BC145SE	Icom 220V AC Adapter BC145SE	11-08813	$24.50
BC-167SD	Wall Charger 220V	11-10811	$31.60
BC-147SA	AC Adapter for BC-192	11-09317	$12.95
A6/A24	Headset noise modification Ferrite Core	11-09346	$6.90
A23/A5	Headset Adapter Cable for A23/A5	11-08900	$42.50
BC-147SA14	110V AC Adapter Charger	11-10076	$12.25
BC-147SE15	220V AC Adapter Charger	11-10075	$11.85
BC121N & BC-197	Icom 110v Power Supply For BC121n And BC197 Chargers	11-10575	$98.75
--	Desktop Rapid Charger for A4(220V)	11-08816	$116.95
BC-119N-02	Desk Top Charger for IC-A4, A14/S, A6, A24	11-07061	$60.75
---	Patch Cord for A24	15-05760	$112.75

ICOM A14 HANDHELD COM

700mW* loud audio - The IC-A14/S series employs a BTL amplifier that doubles the audio output, offering loud and clear audio that'll cut through cabin or tarmac noise. (*internal speaker only) Full keypad type or Simple keypad type - The IC-A14 full keypad type allows you to input the channel or frequency directly and has an exclusive button for the 121.5MHz emergency channel. The IC-A14 receives NAV and WX channels. The IC-A14S simple keypad type provides simpler operation with a minimum of buttons that is suitable for ground crews. Compact, light weight and rugged body - (only 120. mm tall) (approx. 350g including antenna and BP-232N). Water resistant construction. Large capacity Lithium-Ion battery pack - Provides stable output power and 18 hours long (approx.) operating time*. The BP-261, battery case takes 6 AA (LR6) alkaline cells for convenient battery backup. * Typical operation, Tx:Rx: Stand-by=5:5:90. 200 channels with memory banks - With an 8-character channel name for easy recognition. For fast and simple operation, these channels can be grouped into 10 memory banks*. *IC-A14 only. The IC-A14S has 100 memory channels and memory banks are not available.

Description	Part No.	Price
ICOM IC-A14S Simple Keypad Version 110V	11-05903	$208.95
ICOM IC-A14 Full Keypad Version 110V	11-05904	$208.95
ICOM IC-A14S Simple Keypad Version 220V	11-06187	$219.95
ICOM IC-A14 Full Keypad Version 220	11-06188	$204.00

Accessories for A14

Description	Model	Part No.	Price
Antenna A4 A5 A6 A23 A24	FAB02AR	11-05031	$29.95
Speaker Microphone	HM173	11-05832	$83.75
Headset Adapter	PAOPC499	11-18537	$32.85
Alkaline Battery Case (6 - AA Batt. Req.)	BP261	11-06210	$57.75
Desktop rapid Charger for BP230, BP231, BP232 Batteries.	BP160	11-07339	$54.75
AC adptr. 110V - Used with the BP-160, it charges the BP-232N in approx. 3 hours	BC-145SA	11-08672	$59.85
AC adptr. 230V - Used with the BP-160, it charges the BP-232 in approx. 3 hours	BC-145SE	11-08671	$19.95
Belt Clip - Swivel type	MB93	11-06212	$9.75
Belt Clip - Alligator type	MB94	11-06213	$8.50
Drop In Desktop Charger 110V	BC179-01	11-06214	$37.65
Cig Lighter Adptr Cbl for BC179 (12-24V)	CP22	11-06215	$54.75
Drop In Desktop Charger 220V	BC179-02	11-06218	$37.65
Rapid Charger (BC160-01)	BC160-01	11-06219	$22.75
AC Adptr for use w/ BC119N & BC160	BC145 A/E	11-06220	$20.50
6 Way Rapid Chgr. w/ BC157(6-AD106 Req.)	BC121N	11-05020	$229.95
DC Pwr Cbl for BC119N or BC160	OPC515L	11-18533	$20.95
DC Power Cable for BC121N	OPC656	11-05022	$9.75

ICOM IC-4088A UHF FM TRANSCEIVER

The Icom IC-4088A is a compact, inexpensive transceiver, water resistant and very easy to use. Channel changing is as simple as pushing the up/down keys. The radio can be controlled with only 5 button and a volume control knob. The easy to read LCD shows information at a glance.Other outstanding features includes: Economical AA alkaline batteries (3 not supplied) provide 30+ hrs of use, low battery indicator provides warning of battery condition when using alkaline batteries, rotary type antenna folds down behind radio, optional Ni-Cd battery pack and rapid charger, compact body fits neatly in your hand, and auto power-off timer (two hours). This radio is excellent for use in communicating with friends at airshows.

P/N 11-18608 ..... $132.95

Accessories for icom IC-A4

Description	Part No.	Price
AD-81 Desktop Charger Adapter	11-18621	$15.75
BC-124 AC Adapter	11-00615	$87.25
CP-12 Cigarette lighter	11-18594	$31.85
OPC-254l DC Power Cable for IC-A4, IC-A5, & IC-A23	11-18607	$16.85
BC-133 Trickle Battery Charger	11-05689	$31.85
OPC-474 Cloning Cable (hanheld to handheld)	11-02124	$15.25
OPC-752 Headset adapter	11-18602	$39.90
MB-74N Alligator type belt clip	11-05593	$9.75
MB-87 Swivel Belt Clip	11-05686	$4.85
Nylon Carrying Case	11-18617	$23.95
CP12L - Cigarette Lighter adapter (For use with A22, A23, A4, A5) w/ noise filter. Will only charge from 12 volts	11-18604	$34.75
FA-801AR - Antenna	11-05031	$29.95
OPC-254L - Power cable	11-18607	$16.85

CBE-210N BATTERY ELIMINATOR

The CBE-210 is a DC battery eliminator for ICOM handheld radios such as the IC-V8, F3GT, F4GT, & F21GM. One end plugs into a 12-13.8VDC lighter socket. The coiled cord links the lighter plug to the battery housing, which clips onto the back of the radio. The CBE-210 includes Voltage & Current-limiting circuitry; noise filtering circuitry is also built into the housing. 5A fuse is located in the Cig Plug. P/N 11-08252 ..... $23.95

AV

ICOM IC-R6 HANDHELD RECEIVER

100 kHz – 1309.995 MHz* wideband coverage. Radio provides superior sensitivity and receiver characteristics that is insusceptible to interference. Amateur stations, AM, FM, short wave broadcasts, TV audio* and a variety of utility communications can be caught and listened to. Frequency range depends on version. Analog TV audio only. Cannot decode digital TV audio. With the supplied rechargeable Ni-MH cells (1400mAh × 2), the IC-R6 provides up to 15 hours of continuous receive capability*. At 50 mW output using external speaker. 1300 memory channels with 22 memory banks. The VSC opens the squelch only when a modulated signal is detected and ignores un modulated beat noise. The IC-R6 can be powered by rechargeable Ni-MH cells, or with alkaline batteries. Run the IC-R6 using the AC adapter, BC-196S, or opt for a cigarette lighter cable, CP-18. When used the optional drop-in charger stand BC-194 with the AC adapter or cigarette lighter cable, you can easily start charging the Ni-MH cells, while eliminating the need to connect the power source to the DC power jack of the receiver.

United States Version.....P/N 11-08477.....$226.95
Icom IC Sport R6 Blocked .....P/N 11-12975.....$198.75

YAESU FTA-230 TRANSCEIVER

A compact, stylish, solid and affordable hand-held transceiver providing communication on the International Aircraft Communication Band. Additionally, it provides receive on the Navigation Band. Boasts 700 mW of clean audio output and it also provides 8.33 kHz synthesizer steps for the new narrowband channel plan. Displays information with the exclusive Omni-Glow™ display back-lighting for minimal degradation of your night vision. NOAA weather band monitoring, 8-character Alpha/Numeric Display, 150 Memory Channels, 100 "Book Memory" Channels, VOX, and Side Tone are just some of the many features provided. The channel configurations can be easily reprogrammed in minutes using the optional PC programming Kit and your PC. Comes packaged with Yaesu FTA-230 Handheld Radio, BNC Helical Antenna (YHA-73), 110V charger with desktop charging cradle (PA-48B, and CD-32), NiMH battery (FNB-83), headset adapter (CT-96), and Alkaline battery tray (FBA-25A)
12V DC charging sleeve (CD-59)

FTA-230 110V.....P/N 11-11266.....$235.00
FTA-230 220V.....P/N 11-11271.....$235.00
Yaesu CD-32 Charger Cradle.....P/N 11-09277.....$41.90

YAESU FTA-310 TRANSCEIVER

Based on the same design as the extremely popular VXA-300. Now with and improved BNC antenna connection, and a unique 12VDC charging sleeve. Features a more powerful audio amplifier than ANY other handheld airband transceiver and comes supplied with a 1400 mAh nickel metal hydride battery pack that provide almost double the battery capacity of Icom's IC-A23 or IC-A5! Includes: FTA-310: 5W Portable VHF Transceiver with VOR, ATV-10: Helical Antenna (Q3000194), CN-3: SMA to BNC adapter, FBA-25A: Alkaline Battery Tray, FNB-83: 1400 mAh Ni-MH battery, CD-28: Charging cradle, E-DC-5B: DC cable with 12v cigarette lighter plug, PA-48B: 110VAC Overnight charger, CT-96: Headset Adapter Cable. Note: The 220v model comes with the PA-48C: 220 VAC Overnight charger.

Description	Part No.	Price
VXA-310 110V	11-11267	$265.00
VXA-310 220V	11-11270	$265.00
VXA-300 PILOT III Accessories (Included)		
Description	Part No.	Price
Yaesu/Vertex Cigarette Charger	11-12177	$25.85
ATV-10 - Rubber Duck antenna (included)	11-04343	$22.00
CT-96 - Headset Adapter For VXA-300,700, 710	11-02562	$7.85
CD-28 - Overnight desktop charger cradle. Requires NC-88 wall charger	11-04346	$8.95
Yaesu Vertex 220v Wall Charger For Vxa 220 300 710	11-09915	$24.95
FNB-83 - 7.2v 1400mah Ni-MH battery (included)	11-04347	$33.50
Clip-14 - Swivel belt clip (included)	11-04340	$7.20
VXA-300 PILOT III Accessories (Optional)		
Description	Part No.	Price
CN-3 SMA to BNC Antenna Adapter - Antenna Adapter For VXA-150, VXA-210, VXA-300, VXA-700, VXA-710	11-16957	$9.75
MH-44B4B - Speaker Mic for VXA-700,300,710	11-02381	$49.95
Rubber Duck Antenna for VXA-100/150/210	11-00827	$14.50
FTA-230/310 Accessories		
Description	Part No.	Price
BNC Antenna for FTA 230/310	11-11274	$12.95
VA 370B 110V Rapid Charger for FTA 230/310	11-11276	$67.75
VA 370C 220V Rapid Charger for FTA 230/310	11-11277	$67.75
CD 59 DC Sleeve Charge for FTA 230/310	11-11278	$34.50

Accessories for Yaesu FTA-720, FTA-230, FTA-301		
Description	Part No.	Price
Speaker Mic Light Dusty (RSML)	11-11473	$26.95
Listen Only Surveillance Ear-Piece Kit - 14" Length	11-11475	$29.75

YAESU VERTEX FTA 550 VHF HANDHELD

The YAESU FTA-550 is packed with features, yet very affordable. Boasting an oversize full dot matrix LCD display, the FTA-550 Airband Transceiver provides full communication on the Aircraft communications Band and additionally provides VOR and ILS navigation features on the "NAV" band. The FTA-550 includes NOAA weather band monitoring and the capability of programming up to 200 memory channels with a quick and easy channel recall feature. The brand new easy to operate menu system is icon driven making it simple to navigate through all of the powerful features this transceiver has to offer. Additionally the FTA-550 can easily be reprogrammed in minutes using the optional PC Programming software and the supplied USB programming cable. Features: • Easy to Operate Menu system • Huge Dot Matrix Display (160 x 160 dots) • VOR Navigation Display • 200 Memory channels with up to 15 Alphanumeric characters. Specifications: • 25kHz & 8.33kHz spacing • 5 Watts TX Output Power (Airband: AM 5W P.E.P. type, 1.5W carrier) • Huge 1.7" x 1.7" Full Dot Matrix display (160 x 160 Dots) • ILS Navigation Display • NOAA Weather Channel receive* • NOAA Weather Alert* • 200 Memory Channels with 15 alphanumeric characters • Back-lit Keypad and display with dimmer • Water Protection -IPX5 Rating • Loud Audio (800 mW).

AA Battery Version.....P/N 11-12461.....$199.00
Li Ion Battery Version 110V.....P/N 11-12460.....$299.00
Li Ion Battery Version 220V.....P/N 11-12450.....$299.00

YAESU VERTEX FTA 750L VHF HANDHELD RADIO/GPS COMBO

The YAESU FTA-750L combines tradition with innovation. Born from a history of high quality communications the FTA-750L now includes a 66 channel GPS receiver for reliable navigation. Boasting an oversize full dot matrix LCD display, the FTA-750L Airband Transceiver / GPS provides full communication on the Aircraft communications Band and additionally provides VOR and ILS navigation features on the "NAV" band, and waypoint navigation with the built in GPS receiver. The FTA-750L includes NOAA weather band monitoring and the capability of programming up to 200 memory channels with a quick and easy channel recall feature. The brand new easy to operate menu system is icon driven making it simple to navigate through all of the powerful features this transceiver / GPS has to offer. Additionally the FTA-750L can easily be reprogrammed in minutes using the optional PC Programming software and the supplied USB programming cable. Features: • Integrated 66 Channel WAAS GPS receiver • GPS Position Logging operation • ILS (Localizer & Glide Slope) and VOR Navigation • Easy to operate menu system • Huge Dot Matrix LCD display • 200 Channel Memory bank • PC Programmable. Specifications: • 25kHz & 8.33kHz spacing • 5 Watts TX Output Power • Huge 1.7" x 1.7" Full-Dot Matrix Display (160 x 160 dots) • ILS Navigation Display (Localizer and Glide Slope) • VOR Navigation Display • Easy to operate menu system • Integrated 66 Channel WAAS GPS receiver • Waypoint Navigation • GPS Position Logging • NOAA Weather Channel Receive (U.S.A. Version Only) • NOAA Weather Alert (U.S.A. Version Only) • 200 Memory Channels with 15 alphanumeric characters • Back-lit Keypad and Display • Water Protection – IPX5 Rating • Loud Audio (800 mW) • High-Capacity Li-Ion Battery Pack (7.4 V 1800 mAh) • Alkaline Battery Tray (AA x 6).

110V.....P/N 11-12459.....$399.00
220V.....P/N 11-12531.....$399.00

YAESU 550/750C ACCESSORIES

Description	Part No.	Price
Yaesu Vertex BNC Helical Antenna For FTA 550 750	11-12830	$24.95
Yaesu Vertex Alkaline Battery Tray For FTA 550 750	11-12831	$16.95
Yaesu Vertex 1800 Mah Li-ion Battery FTA 550l 750l	11-12832	$85.95
Yaesu Vertex Charging Cradle For FTA 550 750	11-12833	$49.95
Yaesu Vertex 110 VAC Overnight Charger For FTA 550 750	11-12835	$24.95
Yaesu Vertex 220 VAC Overnight Charger For FTA 550 750	11-12836	$24.95
Yaesu Vertex Speaker Microphone For FTA 550 750	11-12837	$69.95
Yaesu Vertex Earphone For FTA 550 750	11-12838	$24.95
Yaesu Vertex Headset Adapter Cable For FTA 550 750	11-12839	$49.95
Yaesu Vertex Programming Cable For FTA 550	11-12840	$8.95
Yaesu Vertex Belt Clip For Fta 550	11-12841	$8.95

YAESU STANDARD DC CABLE PLUG AND WIRE ONLY

Yaesu Standard E-DC-6 DC cable; plug and wire only. P/N 11-08490.....$8.50

YAESU STANDARD ALKALINE BATTERY TRAY

Yaesu Standard FBA-25A Alkaline Battery Tray
P/N 11-08492.....$16.95

AV

HANDHELD RECEIVERS – SCANNERS

AIRBAND SCANNER TSC-100RA

Airband Scanner with NOAA Weather Channels /66-87.495MHz/87.8-108MHz/108.005-135.995MHz/136-174MHz Focused on air band, VHF band, VHF low band (66-88 MHz) and WFM broadcast band, this narrow band receiver has exceptionally high sensitivity and outstanding audio. The simplified functions make this an easy to use handheld, with a large LCD backlit screen and easy to read backlit buttons. 66 - 87.495MHz, 87.5 - 108MHz 108.005 - 135.995MHz, 136-174MHz 200 channel memories Only weighs 5.7 oz Includes: Handheld unit, 3 AA batteries, antenna, belt clip, male SMA to female BNC connector, and operation manual. P/N 11-12164 ..... $109.95

CRS AM/FM CLOCK RADIO BASE SCANNER

The BC345CRS is a multi-featured conventional channel scanner. Easily enter and store frequencies for police, fire/emergency, marine, air and more into 500 channels over ten banks. The scanner also features AM/FM clock radio with snooze and NOAA weather broadcasts.

P/N 11-11412 ..... $174.95

WINDSHIELD ANTENNA KIT FOR HANDHELD RADIOS

This antenna kit attaches to the inside of the windshield & dramatically improves portable nav/com's transmit, receive, and VOR performance based on extensive field testing. It is portable and ideal for those who can't use an ANT-SB. Simply attaches one's own flexible antenna to inside of windshield with BNC, coax, suction cup adapter. Works with any handheld radio using BNC connections. P/N 11-18603 ..... $28.95

GLEIM KA11AIR PORTABLE AVIATION RECEIVER

Aviation radio communications are now available to you with Gleim's Aviation Radio Receiver. Monitor the entire aviation frequency band! This radio is very portable, easy to operate, and extremely cost effective. Enjoy Listening to aircraft and air traffic control communications and build your proficiency in "pilot speak". This radio receiver is an integral part of GLEIM's Watching Airplanes Course- a tool to assist those interested in aviation to learn more about it. The KA11Air receiver comes with two AA batteries, the earphones, and external antenna. ..... P/N 13-06717 ..... $58.80

PASSIVE AIR BAND AIRCRAFT MONITOR

Monitors the entire aircraft band without tuning! Passive design, can be used onboard aircraft, no local oscillator, generates and creates no interference whatsoever!! Great for air shows! Patented circuit and design! For decades we have been known for our novel and creative product designs. Well, check this one out! An aircraft receiver that receives all nearby traffic without any tuning. It gets better... there is no local oscillator so it doesn't produce, and can't produce, any interference associated with all other receivers with an LO. That means you can use it onboard aircraft as a passive device! And what will you hear? The closest and strongest traffic, mainly, the one you're sitting in! How unique is this? We have a patent on it, and that says it all!

P/N 11-04735..... $159.95

RAMSEY AIRCRAFT RECEIVER KIT

Tune into the exciting world of aviation. Listen to the airlines, big business corporate jets, hotshot military pilots, local private pilots, control towers, and other interesting and fascinating airband communications. You'll hear planes up to a hundred miles away as well as all local traffic. The AR1 features smooth varactor tuning of the entire air band from 118 to 136 MHz, effective AGC, superheterodyne circuitry, squelch, convenient 9 volt operation and plenty of speaker volume. Includes their custom case & knob set for a great looking finished receiver! Some assembly required!

P/N 10-05116 ..... $42.95

JETBOOK COLOR E-READER ELECTRONIC FLIGHT BAG

Using the latest technology and the world's first Triton Color E Ink screen the jetBook Color was originally focused on the education market for students to keep track of their schedules, check homework, and eventually replace all paper textbooks. Virtually unlimited format support and endless battery life make the jetBook Color the best device for school work, business documents, leisure reading and everything in between. The jetBook color will include tons of useful information you can use for preparation as well as in flight. It is preloaded with a pre-flight checklist, use the stylus to interact with the screen and check off each item as you go over it. Additionally you will get sectional charts, and airport information. P/N 11-11864 ..... $439.00

SOL VISION EXTERNAL SUNLIGHT READABLE DISPLAY

SOL Vision is an external 10" sunlight readable display for your laptop, tablet, iPad, iPhone, and Android phone. You can turn off the backlight to the display maximizing outdoor battery life - 8 to 20 hours of continuous usage time. HDMI, VGA, and RCA / AV input ports are all available to get connected outdoors in direct sunlight. Connects to any device to enable user to see screen in bright sunlight. P/N 11-11881 ..... $449.00

SPEECHGUARD - GENERAL AVIATION BACKUP

The Speechguard is a pilots dream; it comes pre-installed with seemingly endless amounts of tools, gadgets, and resources to help before, during, and after your flight. Imagine electronically reviewing and completing you preflight checklist all on your Speechguard. Check the weather both in the sky and on the ground before you leave. Access to Airport Info all over the world. METAR, NOTAM, and TAF info right at your fingertips. If you've found yourself somewhere with non-English speaking natives, just use the voice translator for communication. Once you've arrived you can Log your flight, upload some pictures to Facebook or Instagram and even call your friends and family to inform them of your arrival.

Highlights:• Over 20 programs included to assist with almost everything in the realm of general aviation • Completely waterproof, drop-proof, and dust-proof • All in one smartphone and tablet with unlimited access to online resources • Massive battery good for 2 full days of use and countless days of standby • Integrated 2 way radio.

P/N 11-11866 ..... $695.00

SPEECHGUARD ACCESSORY PACK - The pack includes: • Storage Pouch - Protect your SpeechGuard with this extremely light-weight and portable case. • Ectaco Car Charger - Recharge your SpeechGuard in your vehicle. • LCD Protecting Film - Keep your SpeechGuard looking new with this protective film for your LCD screen. • Prevents scratches that come with frequent use: contact with keys, coins, sunglasses, etc. • SpeechGuard Holder- Mount your SpeechGuard unit to the windshield of your vehicle. No other solution provides as much diversity for mounting. • Converter Kit- Outlet adapters for travel in Europe.

P/N 11-12017 ..... $99.00

INTELI DOCK CERTIFIED USB CHARGER

The Aero-Port by Ingenio is a USB charger for portable electronic devices that is purposefully engineered to meet the stringent technical requirements of the aviation industry. It is the most compact USB Charger designed specifically for aircraft. The Aero-Port is a unique product and within it's small housing is an extremely powerful charger designed to be robust enough to power all of today's ever growing list of electronic devices. It's very small housing allows installation is almost any aircraft. Designed and built with Inteli-Fuse™ technology the Aero-Port offers maximum protection from power irregularities. Output protection is activated automatically and fully restored once a short circuit is corrected. Input protection is activated by temporarily disconnecting from the power source and is also self-correcting. Input protection is activated by temporarily disconnecting from the power source and is also self-correcting. Intel-Fuse™ protection makes the Aero-Port very reliable and does not require any servicing after a power hazard situation. This eliminates service costs while fully protecting user devices. The Aero-Port can be easily installed in seats, cabin side ledges and monuments and in the cockpit. It can be mounted on a wide range of fixed points due to its small physical size. This makes it ideal for almost all general aviation aircraft. The Aero-Port charges all the most popular PDA/mobile devices on the market today including products from Apple (iPod / iPhone / iPad) all generations, Samsung and Blackberry. P/N 11-11872 ..... $595.00

AV

TRUTRAK AUTO PILOTS – ADI / EFIS

SORCERER AS AUTOPILOT

Same features as the TruTrak DFC-250 ATI, plus GPSV and VNAV. GPS-Slaved solid-state DG • Digital Ground Track Selector • VOR / LOC / ILS • VOR / LOC Reverse • Selected-angle Intercept • GPS Nav Mode • GPS Steering • Solid-state gyroscopically-controlled pitch axis • Selected Vertical Speed climbs and descents • Altitude Hold • Built-in • Digital Altimeter • V-NAV • Vertical GPS Steering • Altitude Selector with 50-ft resoultion for approaches • Selectable airspeed for altitude transitions (in addition to VS) • True Control Wheel Steering* • Simplified User Interface P/N 11-02968.....$6,305.00
TruTrak Yaw Damper.....P/N 11-02972.....$1,425.00

TRUTRAK YAW DAMPER

The Yaw Damper employs a solid state rate gyro to damp out short term yaw oscillation, and a transverse accelerometer to control rudder position long term, so as to keep the ball centered. The Yaw Damper can be added to the DFC-200 or Sorcerer autopilots.
• 2.05" H x 4.12" W x 1.69" D • 12-28 volts • Standard Weight including servo 3.25lb (Servo Must be Purchased Separately)
P/N 11-02972.....$1,425.00

AUTOMATIC TRIM

Failsafe Automatic Pitch Trim can be added to any system with vertical speed select. TruTrak is the only company serving the experimental market to offer Failsafe Automatic Pitch Trim; this ensures that a single failure will not cause runaway trim. Automatic Trim can be added to the Yaw Damper. • 2.05" H x 4.12" W x 1.69" D • 12-28 volts • Weight 4lb P/N 11-02970.....$339.50

TRUTRAK VIZION MULTI-SERVO AUTOPILOTS WITH HARDWARE

Flat

Round

• Fits Standard 2.25" Round Instrument Hole • Optional Flat Rack Mounting • Built-in Digital Slaved Directional Gyro • Digital Track Selector • GPS Nav Mode • GPS Steering • Altitude Hold • Altitude Select • All Solid-State Sensors • 12-28 Volts • Simple Intuitive User Interface • Climb and Descend on Vertical Speed • Trim Sensing Pitch Servo that Annunciates for Trim. • Vertical GPS Steering (GPSV) • Dims: 2.5"H x 2.5"W x 5.5"D • Flat Dims - 1.6"H x 4.3"W x 5.5"D • Lighter and Smaller then Comparable Systems • True Control Wheel Steering* • Standard weight including servos – 6lb.

Description	Size	Part No.	Price
Vizion 280 2-1/4 Autopilot	2.5"H x 2.5"W x 5.5"D	11-12125	$1,718.00
Vizion 285 Autopilot	1.6"H x 4.3"W x 5.5"D	11-12126	$2,009.00
Vizion 380 2-1/4 Multi Servo Autopilot	2.5"H x 2.5"W x 5.5"D	11-12128	$2,856.00
Vizion 385 2-1/4 Multi Servo Autopilot	1.6"H x 4.3"W x 5.5"D	11-12129	$3,341.00

SPECIFY ROUND OR FLAT MOUNT.

TRUTRAK GX PILOT WITH HARDWARE

Designed to interface with Garmin G3X™ • Fits Standard 2.25" Round Hole • Built-in Ground Track DG • Track Select Mode • Altitude Hold • VS Select Mode • EFIS Mode (Lateral and Vertical Steering) • Control Wheel Steering • Pitch Trim Annunciation • 12-28 Volts • 2.5" H x 2.5" W x 5.5" D
P/N 11-12134.....$2,537.00

ALTRAK ALTITUDE HOLD WITH HARDWARE

• (Easy Installation) • Can be used alone or with any roll servo Autopilot • Only panel space required is for engage/disengage button • Solid-state gyroscopically-controlled pitch axis • Flight dynamics equal to higher priced systems • Control Wheel Steering • Available with vertical speed select (Altrak VS) • 12 Volts only • Programmer Dimensions 3"H x 0.9"W x 2.8"D • Standard weight including servo - 3 lb.....P/N 11-12123.....$1,536.00
TruTrak Altrak VS.....P/N 11-12124.....$1,718.00

PICTORIAL TURN AND BANK

This display is like an artificial horizon in roll and actually moves in unison with it. This makes the transition from viewing the horizon much easier than the reverse display of the turn coordinator. Uses a solid state gyro instead of a spinning rotor. The Pictorial Turn & Bank is superior to a turn coordinator in all ways. It looks and flies like the roll display of an artificial horizon. It agrees with the real horizon, so one does not have to reverse his or her sensing when entering or exiting IMC. The roll response is without lag just as it is in an artificial horizon. Of most importance, it is easier and safer for the non-instrument pilot to fly. 12-28 Volts - Weight-6oz
2-1/4".....P/N 11-02834.....$519.00
3-1/8".....P/N 11-02628.....$548.50

TRUTRAK GEMINI ADI

The Gemini ADI has a touch screen interface. It is a capacitive touch display and therefore does not require very much pressure on the display to operate. There are several functions of the touch screen with the Gemini ADI; centering the slip indicator, the Low Airspeed warning and displaying the Info page. The Gemini ADI unit is designed to mount in the aircraft instrument panel 8-30 VDC.
P/N 11-10451.....$970.00

TRUTRAK GEMINI PFD

The Gemini PFD incorporates an airspeed indicator and altimeter into the Gemini ADI. • Fits Standard 3.125" Cut-out • Airspeed Indicator • Altimeter • Velocity Vector Display • Bank Angle Display • Vertical Speed Display • Track DG • Slip / Skid Indicator • Standard Rate Turn Indicator • Low Airspeed Warning.
Gemini PDF.....P/N 11-10776.....$1,261.00
Back-up Battery.....P/N 11-10777.....$227.95

TRUTRAK ADI PILOT II

Features: • GPS-Slaved solid-state DG • Digital Ground Track Selector • GPS Nav Mode • True Control Wheel Steering • Altitude Hold • Altitude adjust for baro change • Built-in ADI: Bank angle is instantaneous gyro data. Pitch is gyro enhanced vertical speed. Direction is an electronic DG showing track. Extreme bank angle is enunciated by flashing red arrows which indicate required stick motion to correct unusual attitude. Low airspeed warning is enunciated by flashing A-S on the display. • 12-28 Volts only • Programmer Dimensions 3.4"H x 3.4"W x 4.7"D • Standard weight including servo 6lb
P/N 11-04675.....$3,880.00

TRUTRAK ADI FLIGHT INSTRUMENTS

Bank angle is instantaneous gyro data. Pitch is gyro enhanced vertical speed. Direction is an electronic DG showing track. Extreme bank angle is enunciated by flashing red arrows which incidcate required stick motion to correct unusual attitude. Low airspeed warning is enunciated by flashing A-S on the display. Solid state rate gyros for pitch and roll. • Built in GPS (optional) • Backup battery (optional)• Power: 12-28 Volts ADI 2 is 2.5"H x 2.5"W x 6.75"D. ADI 3 is 3.4"H x 3.4"W x 4.6"D.

Description	Part No.	Price
TruTrak ADI 2 With GPS Option	11-05735	$1,411.00
TruTrak ADI 2 Without GPS	11-05736	$1,261.00
ADI Back-up Battery/Connector Kit	11-11546	$258.00

TRUTRAK ADI II 120 KNOT

Gyro / VS pitch display. Bank Angle Display. Built-in Ground Track DG. High Bank Angle Warning. Low Airspeed Warning. Specifications: 2.5" H x 2.5" W x 6.625" D
Without GPS.....P/N 11-08539.....$1,261.00
With GPS.....P/N 11-08540.....$1,411.00

TRUTRAK EFIS GP

12-28 Volts. EFIS GP is available in three bezel types: FM - Front Mount, DC - Diagonal Corner, AS - Avionics Stack. FM: 6" H x 7.25" W x 3.3" D. DC: 5.85" H x 6.45" W x 3.3" D. AS: 5.85" H x 7.05" W x 3.3" D. Features: Airspeed, Altimeter, Artificial Horizon: Attitude, Velocity Vector, Vertical Speed Indicator, Track DG, Current Selected Waypoint, Distance to Waypoint, HSI: GPS CDI, Slip / Skid Ball, Standard Rate Turn Indicator, Bank Angle Indicator, Adjustable Heading Bug, Altitude Bug, Round or Rectangular Airspeed and Altimeter, High Bright / Sunlight Readable LCD.....P/N 11-08463.....CALL FOR QUOTE
2 Axis Autopilot Option.....P/N 11-08563.....CALL FOR QUOTE

AV

GX PRO AUTOPILOT

This pro Pilot autopilot product, the GX PRO, is designed for use with the Garmin G3X EFIS System. It is available in two models:
GX PRO Instrument Mount - It mounts in a standard 3-18" instrument cutout. When driven by a G3X EFIS, it has full GPSS and GPSV capability without the need for an ARNIC 429 data interface, thus lowering the cost substantially. Includes 2 servos and servo installation kit.
P/N 11-09714 .....$2,995.00
GX PRO Stack Mount - This includes a metal sleeve that may be mounted into a radio stack, allowing the unit to be removed from the front. It has the same characteristics as the instrument mount system. Includes 2 servos and servo installation kit. P/N 11-09715 .....$3,095.00

EZ PILOT AUTOPILOT - A single axis, gyro stabilized roll control autopilot. It is a modern navigation system designed to accurately track a GPS flight plan or "Go To" course that is entered into a handheld or panel mount GPS receiver. Track, Course (similar to a heading bug), and Intercept modes are available to the pilot. Pilot Command Steering simplifies course changes. Full data display of all GPS input data. Fits standard 3-18" instrument cutout. Length: 3". Weight – Control Head: 6 ounces/ 169 grams Gold Standard Servo: 27 ounces/ 765 grams
P/N 11-06547 .....$1,795.00

PRO PILOT AUTOPILOT - A GPS enabled autopilot that provides high-quality 2 axis navigation solutions for Experimental and LSA aircraft. It uses solid-state MEMS gyros for pitch and roll stability. Horizontal and Vertical functions may be individually enabled. Horizontal navigation provides three modes of control – Track, Course and Intercept. Vertical navigation functions offer Altitude Hold, Climb/ Descent with Airspeed Limiting, and Altitude Pre-Select. Multi-color LEDs and a bright PLED display screen provide a clear picture of functions and displayed data (LCD screen available upon request). A slip-skid indicator and a turn rate display duplicate the functions of a standard turn rate coordinator. Advanced Safety Features – "G" force limiting, automatic servo disconnect on takeoff, "intelligent" servos with independent emergency disconnect authority, horizontal Track Offset Positioning, and Trio's "automatic 180 degree turn" feature (for VFR pilots encountering poor weather). Fits a standard 3-1/8" instrument cutout. Length: 6". Weight – Control Head: 12 ounces/ 340 grams Each Servo: 27 ounces/ 765 grams. Fuel Management and Auto trim, included in the price. P/N 11-06548 $2,995.00
Auto-Trim option for existing aircraft electric pitch trim system - P/N 11-06549 .....$225.00
GPSS/GPSV Option..... P/N 11-08554 .....$500.00
Pro Pilot Rack Mount..... P/N 11-08556 .....$3,095.00
Fuel Management Option Software - Option for the Pro Pilot allows the pilot to view multiple fuel parameters..... P/N 11-08557 .....$199.00

EZ-3 ALTITUDE CONTROL - The EZ-3 incorporates all of the features of the EZ-2 and adds the ability to pre-select a destination altitude. Once engaged, the system will initiate a climb/descent to the target altitude at a vertical speed that the pilot has previously specified. The vertical rates may be adjusted at any time during the climb/descent.
The internal altimeter is easily adjusted to compensate for changes in barometric pressure, using the primary aircraft altimeter as a reference.
Features: • Altitude PreSelect - Set Target Altitude• Fully Adjustable Climb/Descent Rates - Pilots may also use PCS (Pilot Command Steering) to Transition to "Climb-Descent on Airspeed" at any time.• Smooth Intercept of Target Altitudes. P/N 11-06552 $1,795.00
Auto-Trim option for existing aircraft electric pitch trim system - P/N 11-06549 .....$225.00
All altitude control systems employ the Trio Gold Standard servo.

ACCESSORIES

EZ Pilot Harness Assembly..... P/N 11-06702 ..... $90.00
EZ Altitude Control Harness Assembly..... P/N 11-06703 .....$125.00
ProPilot AuoPilot Harness Assembly..... P/N 11-06704 .....$199.00
Gold Standard Servo..... P/N 11-06705 .....$750.00

COMMANDER 2900 KLN-900 DOCKING STATION

The Commander 2900K is Lone Star Aviation's Docking Station for BENDIX/ KING/HONEYWELL KLN 900 DZUS-Mounted GPS. The portable docking station is designed to let you explore the KLN 900 features in a non-flying environment...in the comfort of your home or office. Operation is simple and fast, just slide your KLN 900 into the Commander's Tray and you are ready to go.
P/N 11-04911.....$379.00

COMMANDER GARMIN GNS-430/530

Lone Star Aviation's Docking Station for Garmin's GNS 430/530 Flight Management System. The Commander is a portable Docking Station designed to let you explore the Garmin GNS 430/530 features in a non.
Features:•Simulate your route of flight and published approaches. •Access sids and stars. •Program and store flight plans. •Simulate approaches. •Enter and store waypoints. •Reduce your learning curve. •Operating your GNS430/530 in flight will become automatic.
GNS-430.....P/N 11-04864..... $249.00
GNS -430 INT.....P/N 11-04865..... $259.00
GNS-530.....P/N 11-04866..... $269.00
GNS-530 INT.....P/N 11-04867..... $279.00

GARMIN COMMANDER GNS 480

The Commander 2000 GNS480 is a Docking Station designed to allow you to explore the Garmin GNS-480(CNX-80) features in a non-flying environment.
Features: * Simulate your route of flight and published approaches * Access sids and stars * Program and store flight plans * Simulate approaches * Enter and store way points * Reduce your learning curve * Operating your GNS-480(CNX-80) in flight will become automatic
P/N 11-04916..... $259.00

COMMANDER 2900 KMD 150 & 250

Lone Star Aviation's 2900 Station has been designed for the KMD 150, KMD 250 equipment so that the user can practice their GPS, Display and all of it's functions in a non flying environment. The 1 port cooling fan (LS03-02013) plugs into the rear accessory panel and provides 6-8 CFM of cooling to the KMD 150/250 receiver. The KMD connectors plug into the rear panel of the Commander Station for an easy set-up so you can get right into the training mode. P/N 11-04922..... $279.00

COMMANDER STATION FOR C-5000

Lone Star Aviation's Commander Station has been designed for the Wulfsberg C-5000 Control Head equipment so that the pilot can practice GPS, control head functionality at his or her own pace in a non flying environment. The 1 port cooling fan (LS03-02013) plugs into the rear accessory panel and provides 6-8 CFM of cooling to the C-5000 receiver.
P/N 11-04928 ..... $379.00

AV

COMMANDER GMA-350 DOCKING STATION

Brand New from Lone Star, Commander GMA-350 Docking station designed for one of Garmins new exciting products. Designed to show off Garmin's new 3D audio capabilities. Comes with everything you will need to run your GMA-350.

P/N 11-10595 ..... $398.75

COMMANDER GTN-650 DOCKING STATION

Brand New from Lone Star, Commander GTN-650 Docking station designed for one of Garmin's new exciting products. Comes with everything you will need to run your GTN-650, including a chassis mounted avionics cooling fan.P/N 11-10593 ..... $348.75

COMMANDER GTN-750 DOCKING STATION

Brand New from Lone Star, Commander GTN-750 Docking station designed for one of Garmin's new exciting products. Comes with everything you will need to run your GTN-750, including a chassis mounted avionics cooling fan.P/N 11-10594 ..... $348.75

COMMANDER 2000K

Pre-wired in the "take home" mode. Simply slide your KLN90A/B, KLN89/B, KLN35 Series, and KLX-135 Series GPS or GPS-COM, into the tray and explore your GPS receiver as if you were flying. Practice actual flight or approach at home, store flight plans, and learn all of your units functions. Update your units database via the internet using a desktop or laptop computer & save up to $300/year. Appropriate connector is shipped free via UPS Blue Label from the factory. Additional connectors, cooling fan, Argus and moving map interface available.

2000K Station ..... P/N 11-18478 ..... $240.95
2000K 220VAC ..... P/N 11-04876 ..... $269.00

COMMANDER 2900 TRIMBLE 2101 24VOLT

Lone Star Aviation's Docking Station for the Commander 2900 2101/CUGR GPS System is designed to allow you to explore the FreeFlight Systems 2101/CUGR features in a non-flying environment. Ideal for Guard Units, EMS, Law Enforcement, DEA, Boarder Patrol, etc. staff training. Unit does not include cable.

P/N 11-04926 ..... $379.00

COMMANDER 2900 AVIDYNE EX-500 DOCKING STATION

This Commander 2900 Docking Station is a training station for the Avidyne EX-500 GPS receiver used in general aviation, business and military aircraft. The Commander Docking Station is a desktop trainer that allows the pilot to review basic, intermediate to advanced GPS functionality in a non flying environment. P/N 11-04931 ..... $349.00

LONESTAR ACCESSORIES

Description	Part No.	Price
1 Port Dock Station Cool Fan	11-04859	$58.75
Multi-Signal Coverter	11-04892	$752.95
KA-20 Mounting Bracket	11-04873	$59.95
MX-20 Power Supply and Cable Kit	11-04869	$479.95
USB to Serial Converter	11-04884	$58.95
150, 155, 165 Garmin Connector	11-04899	$38.95
II Morrow with GX-55	11-04900	$48.95
II Morrow GX60 Connector	11-04904	$58.95
II Morrow GX50 Connector	11-04906	$86.75
CNX-80 Power / Simulation Harness	11-04918	$86.75
Garmin 100 Connector	11-04903	$79.50
250, 300 Garmin Connector	11-04902	$48.95
II Morrow 2001 Connector	11-04901	$38.95
USB Military Cable	11-04891	$99.95
KLN-89B-94 Data Cable	11-04882	$48.95
KLN-88-Power Cable	11-04881	$48.95
KLN-35A Power Cable	11-04880	$48.95
KLN-89B 94 Power Cable	11-04879	$48.95
KLN-90A/B Power Cable	11-04878	$58.95
KLX-135 Power Cable	11-04874	$58.95
KLN-900 & A/C Panel	11-04913	$49.95
KLN-900 Power Cable	11-04912	$86.75
SD Converter TSO 24-13.8 VDC	11-04894	$497.00
DC Converter TSO 24-16 VDC	11-04895	$499.95
DC Converter 24-19VDC TSO	11-04898	$499.95
6 Port Cable Kit 36"	11-04914	$39.95
6 Port Cable Kit 60"	11-04915	$49.95

TRANS-CAL ATS-400 ALTITUDE DIGITIZER

The Trans-Cal Model ATS-400 is designed to test, display and simulate the output of Altitude Reporting Equipment, which conform to the ICAO Standard for SSR Pressure Altitude Transmission. In accordance with the U.S. National Standards for I.F.F. Mark X (SIF)/Air Traffic Control Radar Beacon System SIF/ATCRBS. The ATS-400 will also display the output of altitude reporting equipment which transmit serial data in either RS232, RS422, RS485 or ARINC 429 Label 203. The ATS-400 may be used in the aircraft or on the bench making this an extremely versatile piece of test equipment.

P/N 11-09607 ..... $1,430.00

TRANS-CAL EET-200 ENCODER EMULATOR TESTER

The EET-200 provides the avionics technician a clean, quick and reasonably priced method of emulating an altitude encoder output by providing a known good altitude code source to aide in isolating each data bit D2 through C4. Simply unplug the altitude encoder and substitute the EET-200; rotating the knob will move the transponder through a variety of preprogrammed altitudes testing each data bit in sequence.

P/N 11-09606 ..... $310.00

NC 2210A NAV/COM RAMP TESTER

The NC 2210 Tester is optimized for ramp testing of navigation and communication equipment. The unit provides test signals for marker beacon, communication, localizer, glide slope, and VOR. Also included, is a wide band comm receiver to permit evaluation of comm transmitter AM fidelity. The TKM NC 2210 is a NAV-COMM Ramp Tester. The unit has improvements over the 2200, which it replaces. The improvements include the following: Higher •RF power • Precise localizer and glide slope deflection • Calibrated VOR bearings at 10 degree increments • Crystal controlled modulation frequencies • Longer battery life • Internal antenna with adjustable length • Smaller size. Specifications: •Size: 3.8 x 7.4 x 2.3" •Weight: 1.3 lbs. •Power: Internal battery with over 2 hours running time (110VAC charger included) •Warranty: 2-year from date of purchase. P/N 11-01813 ..... $1,597.00

MC 60 NAV CONVERTER

The TKM MC 60 is designed to provide a display for a variety of Nav signals including ILS, LOC, Back course, LOC, GS, GPS, and MB. The VOR display includes a Left and Right bar graph with an OBS and a tracking mode with reciprocal selection. When a GPS is selected by grounding the enableline, GPS is displayed in the OBS window and VOR and LOC functions are disabled. When the GPS is not enabled the VOR/LOC selsction is made by the ILS enable line from the associated Nav receiver. Back Course selection is made by grounding the back course enable line. The digital display includes OBS, bearing, LOC, BAC, and GPS. The bar graph display contains 10 dots forLeft, Right, Up, and Down. The center dot is used to indicate valid signals for LOC, VOR, or GPS. A Glide Slope light indicates a valid Glide Slope signal. P/N 11-04594 ..... $589.00

QUICK SHOT AVIONICS REFERENCE MANUAL

Quick Shot is a compact, rugged binder type manual which shows detailed wire pin-outs for a wide variety of general aviation avionics equipment. Each page is removable and very durable. The wiring diagrams in Quick Shot Volume 1 include Apollo/UPS, Bendix, Garmin, Icom, Sandel Mid-Continent Instruments and Avionics, Sigtronics, United, Telex, David Clark, PS Engineering, Narco, Val, and many more. P/N 11-01623 ..... $56.50

PRO HUB

A revolutionary product that allows you to easily install and connect avionics into an existing aircraft or one you are building. Designed to accept and connect most NAV/GPS/COM, modern audio panels, intercoms, VOR indicators, moving map displays, HSI's, RMI's, ADF's, annunciators, mode control and almost any "send and receive" RS-232 formatted device. Approach's custom cables are made to connect with the Fast Stack Pro Hub and associated avionics and come with connectors installed. Virtually No Hand wiring •Lower Upgrade Costs •Single Point Grounding P/N 11-04731 ..... $582.00

EBC ELTS

ELT installed in the cabin or cockpit. Automatically activated. Transmits on both 121.5 & 243.0MHz. The model EBC 102A is the smallest cabin mounted Emergency Locator Transmitter in existence. It, like all EBC ELTs, is designed to stay with the pilot in the event of a crash or unplanned but safe landing. Whether impact activated or turned on manually, the EBC 102A transmits a satellite compatible signal on both the civilian and military international emergency frequencies for up to 3 days. The 102A is built to withstand up to 1000 G's of impact. Its solid state circuitry is encapsulated in closed cell polyurethane - an exclusive EBC manufacturing technique. This is what allows the unit to be completely submerged in salt water for twenty or more hours and still operate effectively as long as the antenna is above water. The EBC 102A incorporates a permanently attached integral, unbreakable antenna, a nylon lanyard to enhance its portability, and is mounted in a quick-release bracket in the cabin within easy reach of the pilot. Operating the toggle switch at the top of the unit allows for manual activation or pre-flight testing. The standard built-in test lamp is used in monitoring power output, modulation, and battery strength. Historically, the EBC 102A has been the ELT of choice for a majority of small aircraft owners in the United States since 1970.

EBC-102A Signal only ELT ..... P/N 11-02575 ..... $529.00
EBC-502 Portable Cabin Mount ELT ..... P/N 11-02576 ..... $489.00
EBC GS21 ELT Battery ..... P/N 11-04771 ..... $32.50

POINTER 3000 SERIES ELTS

The Model 3000 (AF/AP) and 3000 (AF) which have been in production for twenty years are now revised to incorporate the upgrades of RTCA DO-183 for emergency locator transmitters.The new models, designated 3000-10 (AF/AP) and 3000-11 (AF) are interchangeable with existing units in form, fit and function. The 3000-10 and 3000-11 transmitters incorporate an alkaline battery pack specifically designed to endure the short term extreme thermal variations and mechanical shock requirements of RTCA DO-183. Installed weight is 2.0 lbs. Emergency voice transmission is provided on the 3000-10 transmitter if desired. Size: 3 Size: 3 1/2"W x 7 5/8"H x 2-3/4"D.

P/N 3000-10 ..... $499.00
P/N 3000-11 ..... $495.00

Accessories: Merl Battery pack, 2-year Alkaline
P/N 11-17950 ..... $23.75
Pointer Battery Pack ..... P/N 2020 ..... $44.75
Mounting bracket assembly ..... P/N 2017 ..... $54.75
Master switch guard kit ..... P/N 2021 ..... $11.75
Remote panel switch kit ..... P/N 2019 ..... $79.85
2019-10 Remote switch kit ..... P/N 11-05889 ..... $79.85
Fixed (remote whip) antenna ..... P/N 3001 ..... $68.85
Coaxial antenna cable ..... P/N 3002 ..... $44.50
Telescopic antenna w/tether ..... P/N 2006 ..... $35.25

ACK 406/121.5 MHZ E-04 ELT

The all new E-04 ELT is a direct replacement for the more than 62,000 model E-01 ELT's (by ACK) on the market today. The new E-04 fits directly into the current E-01 mounting trays and uses the same remote control panel indicator. The E-04 external antenna will utilize your current antenna mounting and wiring installations.

Features: * Accepts GPS position imput data from Bendix/King. Garmin, Nema 0183 GPS * New antenna is swept back 20 degrees, and features a molded plastic base. * 5 watts @ 406MHz for 24 hours, and 100 Mw @ 121.5 MHz for 48 hours. * New simple plug in audible alert indicator. * New lithium battery pack offers a 5 year battery life, and makes it substantially lighter. * Can use Ameri-king remote panel indicator

Description	Part No.	Price
ACK E-04 406MHZ ELT Kit	11-06395	$599.00
ACK E-04 406MHZ ELT Kit INTL.	11-09582	$599.00
Accessories	**Part No.**	**Price**
ACK E-01 TO E-04 Retro FIT Kit	11-06396	$573.00
ACK E-01 TO E-04 Retro FIT Kit INTL.	11-09231	$618.00
E-04 Whip Antenna	11-10465	$109.75
RCPI Cable For ACK 406/121.5 MHZ ELT	11-09971	$18.75

ACCESSORIES FOR E01 ELT

ELT Replacement antenna ..... P/N 11-17961 ..... $43.50
ACK E-01 ELT G-Switch E-01G ..... P/N 11-05537 ..... $49.95
RCPI Unit / Remote Switch / E-01 (E-01-05) ..... P/N 11-05262 ..... $43.50
ACK E-04 Replacement Battery ..... P/N 11-10012 ..... $120.00

POINTER ELT 8000 SERIES

The COSPAS/SARSAT search and rescue network will discontinue monitoring the current 121.5/243.0 MHz frequencies as of Feb. 1, 2009. The 121.5/243.0 MHz frequencies will continue to be monitored on a voluntary basis by overflying aircraft and utilized by the current search and rescue organizations. After this date, the COSPAS/SARSAT will monitor only 406 MHz. The 406 MHz aircraft ELT, defined by COSPAS/SARSAT operational specifications, incorporates many new features and improvements for search and rescue.

To comply with the new requirements, Pointer, Inc is pleased to announce the Model 8000 series ELT. The transmitter design incorporates the functional and programming requirements of COSPAS/SARSAT specification CST.001, FAA RTCA DO-204 and TSO-C126. The Pointer ELT Model 8000 series transmits phase modulated aircraft identification data on the 406 MHz frequency to quickly identify an emergency . The unit also transmits 121.5 MHz frequency for airborne and ground search operations. Optional features include factory or field programming of the microprocessor as a separate module and internal GPS. The approval program is in process and have completed COSPAS/SARSAT testing. FAA testing has begun.

Description	Part No.	Price
Model 8000-1(AF) Complete Unit	11-07543	$924.00
International Version		
Description	**Part No.**	**Price**
Model 8000-1(AF) Complete Unit	11-07545	$912.00

Accessories		
Description	**Part No.**	**Price**
Battery Pack	11-07548	$134.95
Mounting Bracket	11-07549	$59.95
Remote Switch	11-07550	$76.75
Remote Antenna 3000-15	11-07551	$108.95
Pointer Remote Antenna Cable	3002	$44.50

ELT REPLACEMENT BATTERIES

P/N 11-04758

We now offer the complete line of ELT replacement battery packs. These top quality battery packs are factory new & meet or exceed FAA TSO-C91a and are also Transport Canada approved. Request current price on any ELT replacement battery or ELT, not shown here. NOTE: ELT Replacement Batteries are non-returnable due to shelf-life.

Application	Part No.	Price
BP-1020 Dorne & M. (2 yr.)	11-17920	$33.50
BP-1045 EBC102/302 (2 yr.) - GS-21	11-17925	$23.75
BP-1035 Garrett R88 (2 yr.)	11-17930	$33.65
Garrett: Rescu/88L or Rescu/88C 2 Year	11-17937	$49.95
BP-1005 Merl/Larago (2 yr.)	11-17935	$43.75
BP-1040 Martec Eagle	11-17940	$79.75
BP-1026 CIR-11	11-17910	$49.90
BP-1030 Pointer (2 yr.)	11-17950	$23.75

Application	Part No.	Price
Narco (2 yr.) (ELT10) Bp-1010 Approved for Canadian use.	11-17945	$32.50
BP-1015 Sharc-7 (2 yr.)	11-17955	$28.65
452-0130 Artex 110-4	11-17957	$136.75
EBC 502 - GS-52	11-02577	$59.95
452-3063 ELT-200	11-14935	$89.75

EBC 406-SERIES ELT'S

All EBC 406 ELT's have a built-in self test feature that allows the pilot to check 406 power and the antenna-coax connection. Both cabin and tail mount ELT's use an external antenna. Features: • Operating Freqs: 406.028 MHz and 121.5 MHz • Output Power on 406 MHz: 5W for 24 Hours at -20C • Output Power on 121.5 MHz: 50mW min for 50 Hours at -20C • Operating Temperature: -20C to +55C • Useful Battery Life: 5 Years or 1 Hour of Cumulative Use • Modulation 406 MHz: Biphase L (16KOG1D) • Modulation 121.5 MHz: Swept Tone 1600Hz to 300 Hz, 2-4 • Times/ Second • Automatic Activation: Velocity Change of 4.5 feet per Second • Altitude: 50,000 feet • Decompression: 8000 feet to 40,000 feet • High Pressure: -15,000 feet • Humidity: 95% for 50 Hours • Shock Performance: Withstands 500G's on 6 axes • Vibration: Withstands 10 G's • Immersion: Withstands 24 hours in Salt Water • Warranty: 2 Years, Made in the USA.

Model	Description	Part No.	Price
EBC 406AP	For fixed wing aircraft. Includes transmitter, survival antenna, mounting bracket, external whip antenna with cable & battery pack. For cabin/cockpit installation.	11-05917	$998.00
EBC 406AF	For fixed wing aircraft. Includes transmitter, survival antenna, mounting bracket, external whip antenna with cable, remote control monitor with connector kit & battery pack. For aircraft tail installation.	11-05918	$1,236.00
EBC 406APH	Same as AP system but with omni-directional helicopter activation system. For helicopter use only.	11-05919	$1,727.00
EBC 406AFH	Same as AF system but with omni-directional helicopter activation system. For helicopter use only.	11-05920	$1,562.00
EBC 406AFH	Same as AF system but with omni-directional helicopter activation system. For helicopter use only. (International Version)	11-10009	$1,562.00
EBC 406HM	Cabin mounted tri-frequency ELT (406.028, 121.5 and 243.0 MHz) Non-reflective flat black for night vision equipment contractility. With integral antenna, omni-directional helicopter activation system and battery pack.	11-05921	$1,114.00
EBC-406HM-INT		11-07240 Intl	$1,178.00
EBC 406APM	Same as EBC 406AP but finished in non-reflective flat black for night vision equipment compatibility. Tri-frequency signal. Comes with external rod antenna.	11-05922	$1,750.00
EBC 406AFM	Same as EBC 406AF but finished in non-reflective flat black for night vision equipment compatibility. Tri-frequency signal. Comes with external rod antenna.	11-05923	$1,977.00
EBC 406APHM	Same as EBC 406APM but with the addition of an omidirectional helicopter activation system. For cabin mounting. Comes with external rod antenna.	11-05924	$1,885.00
EBC 406AFHM	Same as EBC 406AFM but with the addition of an omi-directional helicopter activation system. For tail mounting. Comes with external rod antenna.	11-05925	$2,128.00

Model	Accessories	Part No.	Price
GS-46	5 year lithium battery pack for any of EBC's 406 ELTs	11-05926	$179.00
BB-12	Mounting bracket for EBC 406AP series ELTs	11-05927	$155.95
BB-12M	Mounting bracket for EBC 406HM, APM and APHM	11-05928	$155.95
BB-14	Mounting bracket for EBC 406AF series ELTs	11-05929	$123.95
RCM-1	Remote Control Monitor for EBC 406AF series ELTs with connector kit	11-05930	$255.95
ANT-406W	External whip antenna for both EBC 406AP and AF series ELTs. Two frequencies	11-05931	$163.75
ANT-406T	Survival tape antenna for all EBC 406 ELTs. Three frequencies.	11-05932	$102.95
ANT-406R	External rod antenna for helicopter or high speed use. For use with three frequencies 406 ELTs.	11-05933	$1,098.00
ANT-406B	Blade antenna for high speed use. Three frequencies	11-05934	$1,592.00
CB-1	6ft. cable between ELT and antenna	11-05935	$68.50
Manual	Operation and Installation Manuals	11-05936	$49.00

AMERI-KING AK-451 PERSONAL LOCATOR BEACON

ACOSPAS-SARSAT & FCC approved, 406 MHz Satellite P-ELT Personal Emergency Locator Transmitter, triple (406 Satellite /243 Military /121.5 Civilian) MHz frequencies. Having triple frequencies insures your distress message reaches both NOAA Satellite Operation and US Air Force AFSR Ground Operation, Search and Rescue Team, with 100% confidence, due to transmitting on both 243.0 Military and 121.5 Civilian bands, for immediate ground search dispatch, narrowing the searching time to the minimum. The Position accuracy of the 406 MHz satellite signal is about 110 meters at 9.5 degree Cross Track Angle (found in Satellite Qualitative Test at a COSPAS-SARSAT approved Laboratory). Features:• Applicable to all Aviation Uses such as Flying, Gliding, etc. • Harsh/ Robust/ Heavy Duty P-ELT in an enduring composite Emergency Carrying Case. • Ultra long lasting Battery Package, up to 78 hours @ -20 deg C, end of life, 10 years useful life time Lithium type, LiMnO2, 4 D-Size. P/N 11-06305 ..... $475.00

KANNAD INTEGRA ARINC E-NAV

Provides a fail safe GPS data acquisition for the INTEGRA ELT system providing redundancy in the system with: 1) Integra internal GPS and 2) Aircraft Onboard GPS acquisition. Compatible with ARINC 429/743 databus. Size 205*100*86mm for the overall ELT system.

Description	Part No.	Price
Kannad Integra Arinc E-NAV	11-12326	$1,625.00
Kannad Integra Arinc E-NAV ELT AP Mnt Bracket	11-12327	$192.95
Kannad Integra Arinc E-NAV ELT AF Mnt Bracket	11-12328	$192.95

AMERI-KING AK-450 ELT

The AK-450 ELT from Ameri-King is FAA TSO-C91a approved & meets FCC rule for improved satellite detection. It features voice transmitting capability, visual "on" lights for both ELT main unit and remote panel, and uses standard Duracell batteries (included). Includes low drag aircraft antenna, portable antenna, remote control panel, wiring and coaxial cable assembly, mounting tray and clamp. Size: 4.27"w x 2.95"h x 5.64"l. Wt: 2 lbs.,10 oz. 2 yr factory warranty ATTENTION: 2009, the international COSPAS-SARSAT satellite system will no longer provide satellite-based monitoring of the 121.5/243 MHz frequency. After the date of the satellite termination, in 2009, 121.5 MHz signals transmitted from ELTs operating on the lower frequency will only be detected by ground-based receivers such as local airport facilities or air traffic control facilities or by overflying aircraft

P/N 11-02790 ..... $208.00
ELT for helicopter (6 axles) AK450-1 ..... P/N 11-01249 ..... $626.00
AK-450 Cable Assembly ..... P/N 11-04973 ..... $12.85
AK-450 Remote Switch ..... P/N 11-04937 ..... $46.75
AK-450 Coaxial Assembly ..... P/N 11-04938 ..... $11.95
2 Year Warranty ..... P/N 11-05793 ..... $46.75
AK-450 antenna 450017 ..... P/N 11-03303 ..... $38.75

AMERI-KING AK-451 ELT

*Mic jack feature not available on 406 MHz ELTs FAA TSO'd approved, EASA ETSO'd approved, 406 MHz ELT Emergency Locator Transmitter Types (AF) Automatic Fixed, & (AP) Automatic Portable. It transmits aircraft position data, immediately and accurately, on triple (406 Satellite /243 Military /121.5 Civilian) MHz frequencies. Having triple frequencies insures your distress message reaches both NOAA Satellite Operation and US Air Force AFSR Ground Operation, Search and Rescue Team, with 100% fully confidence, due to transmitting on both 243.0 MHz Military and 121.5 MHz Civilian bands, for immediate ground search dispatch. Package Includes: * AK-451 w/ Battery (AF/AP ELT) * Portable Antenna * Whip, Rod, or Blade Antenna * Remote Switch * Prefabricated 25 Foot Wiring Harness Assembly * Audible Buzzer Monitor * Six Foot Coaxial Cable Assembly * Mounting Tray * Velcro Holder * Portable Soft Case

ELTS PROGRAMMED FOR US REGISTERED AIRCRAFT			
Model No.	Description	Part No.	Price
AK-451-2	ELT W/ Whip and Port Antenna.	11-06677	$689.00
AK-451-2D	AK451ELT Dual w/Whip & Port Antenna	11-10472	$587.00
AK-451-23	AK451ELT W/Whip & Port Antenna W/GPS interface.	11-08304	$1,183.00
AK-451-3	ELT W/ Rod 3 and Port Antenna.	11-06678	$1,588.00
AK-451-4	ELT W/ Rod 4 and Port Antenna.	11-06758	$1,829.00
AK-451-5	ELT W/ Blade and Port Antenna.	11-06679	$1,902.00
AK-451-6	ELT 406/GPS/NAV POS/Whip and Port Ant.	11-06680	$2,095.00
AK-451-12	ELT w/ Multi Axes G Switch for Hel. & Dual Ant.	11-06691	$1,466.00
AK-451-13	ELT Set w/GPS & Opt Multi Axes	11-06692	$2,857.00
AK-451-14	ELT Set 406 Rod/Port Ant./Helicopter	11-06970	$1,385.00
AK-451-15	EL Set 406 for Helicopter	11-06969	$1,195.00
AK-451-16	ELT Set/Helicopter/Opt Multi Axes	11-06971	$2,076.00
AK-451-17	ELT Set/Helicopter/GPS/NAV POS	11-06972	$2,351.00
AK-451-18	ELT Set 406/GPS/NAV POS/Helicopter	11-06973	$3,038.00
INTERNATIONAL PROGRAMMED ELTS - Can be programmed for international registered aircraft (specify when ordering).			
Model No.	Description	Part No.	Price
AK-451-CAN	ELT W/ Whip and Port Antenna. Canadian	11-06966	$719.00
AK-451-23 CAN	ELT W/ Whip Antenna & GPS Interface. for Canada registered aircraft.	11-08667	$1,183.00
AK-451-INT	ELT with Whip and Port Antenna. Int.	11-06968	$689.00
AK-451-INT	AK-451 2D ELT Dual Freq/Whip Antenna	11-10573	$587.00
AK-451-INT	ELT with Rod 3 hole antenna	11-07563	$1,279.00
AK-451-INT	ELT with Rod 4 hole antenna	11-07566	$1,850.00
AK-451-INT	ELT with Blade antenna	11-07568	$1,825.00
AK-451-HELI	ELT with Whip antenna heli.	11-07560	$1,533.00
AK-451-GPS	ELT with GPS/NAV antenna whip	11-07569	$2,147.00
AK-451-GPS	ELT with GPS/NAV antenna rod 3 hole	11-07570	$2,579.00
AK-451-GPS	ELT with GPS/NAV antenna rod 4 hole	11-07571	$2,795.00
AK-451-GPS	ELT with GPS/NAV antenna blade	11-07572	$3,115.00

Note: Any Ameri-King model with GPS in the description will interface with aircraft GPS/NAV, via RS-232 Aviation Protocol: Garmin Intl Inc., Honeywell Bendix King Inc., Trimble Nav Inc., Arnav Inc., Il Morrow Inc.

ACCESSORIES	Part No.	Price
Installation Adapter Kit	11-06988	$13.50
AK-451 ELT Replacement Battery	11-06686	$144.95
ELT ID Software Reader	11-06974	$341.95
Optional Mil Spec Remote wiring harness Assembly, 25'	11-06760	$49.50
Whip Ant., General Aviation, 250 knots, 406/121.5MHZ	11-06690	$124.95
Rod4, Business Jet, 350 knots, 406/243/121.5 MHZ.	11-06761	$884.00
Rod3, Business Jet aircraft, 350 knots, 406/243/121.5 MHz	11-06689	$488.00
AK-451 Mount Tray	11-09966	$24.85
AK-451 Audio Buzzer	11-09967	$37.50
AK-451 T Adapter	11-09968	$6.75
AK-451 Hex Key Tool	11-09969	$1.55

KANNAD 406 ELT'S

KANNAD 406 AF-COMPACT ELT KIT - Designed for all light aircraft requiring a very compact automatic fixed ELT that is fully FAA TSO-C126 approved. The robust and reliable shock sensor will automatically activate the ELT in the event of a crash, the pilot can also manually activate the ELT in case of emergency. Features: * Ultra small size and light weight ideal for any general aviation aircraft. * Six year lithium manganese battery. * Complete kit with install manual.. * Two frequency transmitter (121.5 / 406 MHz) * Weight (Including batteries): 1.87 lbs

ELT Only		Price	W/ Whip Antenna	Price	With Rod Antenna	Price
USA	11-05786	$740.00	11-09525	$881.00	11-09526	$1,138.00
Canada	11-05786	$740.00	11-09670	$881.00	11-09671	$1,138.00
International	11-06314	$811.00	11-09527	$881.00	11-09528	$1,138.00

KANNAD 406 AF - Designed to be installed near the tail and to be connected to an outside antenna. A sophisticated "shock sensor" system will activate the ELT automatically in the event of a crash. Its small size and light weight make it ideal for general aviation. The "Mounting Bracket, 1 Strap" is not included. Features: * Optional Navigation Interface transmits GPS coordinates significantly shortening Search and Rescue response time. * Operates without aircraft power and incorporates an internal alarm/buzzer avoiding costly installation procedures. * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (Including batteries) 2.44 lbs (1110 g) / max 2.60 lbs (1180g) ..... P/N 11-06285 ..... $2,520.00
406 AF ELT International ..... P/N 11-06987 ..... $2,553.00
406AF Compact Inspection Kit ..... P/N 11-08063 ..... $54.75

KANNAD 406 AF-H - Can be installed on board helicopter in flat position Features: * Optional Navigation Interface transmits GPS coordinates significantly shortening Search and Rescue response time. * Operates without aircraft power and incorporates an internal alarm/buzzer avoiding costly installation procedures. * Six year lithium manganese battery. * Rod (ANT300) or Blade (ANT650) ELT antennas sold separately. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (Including batteries) 2.44 lbs (1110 g) / max 2.60 lbs (1180g) ..... P/N 11-05790 ..... $2,435.00
406 AF-H ELT International ..... P/N 11-07559 ..... $2,435.00

KANNAD 406 AS - The KANNAD 406 AS is a aeronautical survival beacon. Fits easily inside a liferaft. It is supplied with a floating collar. Features: * Battery replacement is only every 6 years. * Precise pinpointing (<1NM) due to the unparalleled frequency accuracy of the 406 transmitter. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight (including battery, auxiliary antenna and floating collar) 2.53 lbs (1150 g) ..... P/N 11-05787 ..... $2,692.00
Wall Mount Bracket ..... P/N 11-07718 ..... $223.95
Replacement Pin for Wall Mount ..... P/N 11-07719 ..... $44.50

KANNAD 406 SURVIVAL - Fitted with a water switch sensor. It is automatically activated when in contact with water. Emergency locator transmitter of type (S), the survival is supplied with a floating collar. Features: * Six year lithium battery. * Includes water sensor switch and is automatically activated when in water. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (including battery, auxiliary antenna and floating collar) 3.031 lbs (1375 g)
P/N 11-06287 ..... $2,248.00

KANNAD 406 AP - Installed near the tail and connected to an outside antenna. A sophisticated "shock sensor" system will activate the ELT automatically in the event of a crash. When removed from the bracket and connected to the auxiliary antenna, the Kannad 406 AP becomes an autonomous survival beacon operating on 3 frequencies (121,5/243/406 MHz). Features: Operates without aircraft power and incorporates an internal alarm/buzzer * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (With battery, bracket, and auxiliary antenna) 2.84 lbs (1290 g) ..... P/N 11-06284 ..... $2,546.00
406 AP ELT International ..... P/N 11-07558 ..... $2,577.00

KANNAD 406 AP-H - Installed on board helicopter in a flat position. When removed from its bracket and connected to the auxiliary antenna, the Kannad 406 AP-H becomes an autonomous survival beacon operaing on 3 frequencies. (121.5/243.0/406 MHz). The "Mounting Bracket, 1 Strap" is not included. Features: * Ultra small size and light weight ideal for any helicopter installation. * Optional Navigation Interface transmits GPS coordinates. * Operates without aircraft power and incorporates an internal alarm/buzzer. * Six year lithium manganese battery. * Three frequency transmitter (121.5 / 243 / 406 MHz) * Weight: (With battery, bracket, and auxiliary antenna) 2.84 lbs (1290 g) ..... P/N 11-05788 ..... $3,128.00
406 AP-H ELT International ..... P/N 11-07557 ..... $2,503.00

KANNAD 406 AF (6D) - Designed to be installed near the tail and to be connected to an outside antenna. A sophisticated 6 way "shock sensor" system will activate the ELT automatically in the event of a crash. Its small size and light weight makes it ideal for any helicopter. The "Mounting Bracket, 1 Strap" is not included. Features: * Automatic Fixed ELT * Specifically designed for aircraft or helicopters * Fitted with 6 G-switches * Three frequency transmitter (121,5 / 243,0 / 406 MHz) * 6 year battery life-time * Short circuit protection * Weight: 1260 gr (max) P/N 11-05786 ..... $740.00

KANNAD INTEGRA 406AF ELTS

Weighing in at just 1.873lb and measuring just 6.89 x 3.90 x 3.40 inches the INTEGRA boasts a number of new and innovative features in a very small easy to install package. The INTEGRA transmits on both the international 406MHz satellite search and rescue system and on 121.5MHz for local direction finding. The minimum operating temperature of the unit is -20°C. The internal battery life of the INTEGRA is 6 years.
406 ELT AF U.S. ..... P/N 11-09325 ..... $969.00
406 ELT AFH (Heli.) U.S. ..... P/N 11-09327 ..... $1,039.00

KANNAD ANTENNAS

ANT100 - AUXILIARY ANTENNA (BNC) - Auxilary Whip antenna. Turns any Kannad ELT into a portable survival unit. Stores under the velcro strap of the mounting tray. P/N 11-06288 ..... $186.75

ANT650 - BLADE ANTENNA - Developed by RAYAN. Three frequency antenna (121.5 / 243 / 406 MHz) High performance low profile outside antenna designed for Corporate jets and airliners Applications: AF, AF-H, AS, AS-H * "High Speed" Aircraft * JTSO and TSO
P/N 11-06294 ..... $2,242.00

KANNAD WHIP ANTENNA ANT200 - The ANT200 ia a 406 ELT Antenna. For use with Kannad ELTs only. ANT200 is a dual frequency Whip antenna for aircraft up to 250 kts (frquencies: 121.5 / 406 MHZ). Has a female BNC connector out. Specifications: Color: Black, Overall Dimensions:, 24.98" X 1" (634.5 MM X 25 MM), Height: 24" (609.6 MM), Weight - 0.375 LB (170 G) P/N 11-06290 ..... $32.85

KANNAD AV300 RAMI ROD ANTENNA - For use with an ELT for general aviation. Passive three frequency fiberglass rod whip antenna, designed for low speed aircraft (up to 350 knots).BNC Female, 9 oz max, 14.00 Inches max P/N 11-07995 ..... $289.95

KANNAD ACCESSORIES

NEMA INTEGRA E-NAV - Provides back-up GPS position data taken from the aircraft's own panel mounted GPS P/N 11-10751 ..... $381.00

BAT200/300 - BATTERY REPLACEMENT KIT - Application: AF, AF-H, AP, AP-H, AS, Survival Comes with 3 cell battery pack, replacement o-ring, desiccant pack and replacement self locking nuts. 406AF uses BAT200
BAT-200 ..... P/N 11-06297 ..... $185.75
BAT-300 ..... P/N 11-06296 ..... $439.00

RC102 - REMOTE CONTROL - Replacement control panel for ACK, AMERIKING plus Narco two wire switches and challenging locations . Front panel included in RC102 & RC100 P/N 11-07901 ..... $94.85

RC200 - REMOTE CONTROL - Outline Dimensions: 1.3 x 1.97 x 1.69 in (33 x 50 x 43 mm). 3-position red switch (ON, ARMED, TEST/RESET). D-SUB 9 pin connector with threaded locking device (UNC 4-40) .The Kit includes mating SUB-D9 connector for easier installation. Applications: AF- Compact, AF, AF-H, AP, AP-H Switch is not waterproof. Cannot be installed flat. P/N 11-06302 ..... $122.95

DIN12 CONNECTOR - For connection to Remote Control Panel, CSI44 interface module, dongle or programming equipment. Compatible with all KANNAD 406 ELTs P/N 11-06303 ..... $26.50

MOUNTING BRACKET 1 STRAP- Designed to fix the ELT with a retaining strap for quick removal in an emergency Qualified to maintain the ELT into place during 500 G shocks for 4 ms. Applications: AF, AF-H, AP, AP-H P/N 11-06301 ..... $98.95

UNIVERSAL COMPACT MOUNTING BRACKET - Compatible with the drilling on all 121.5 Mhz beacons. P/N 11-07900 ..... $64.99

PROGRAMMING DONGLE, ASSY - Din 12 connector with serial memory module (SMM) for programming operations. Fitted with a female DIN12 connector on RCP side. Compatible with all KANNAD 406 ELTs
P/N 11-06304 ..... $307.00

KANNAD PROGRAMMING DONGLE - Identical to the DIN12 that is used to store aircraft programming information. Allows fleet operators to move any ELT to any other aircraft. The stored aircraft data will be automatically downloaded into the ELT. Required for Navigation Interface connection.
P/N 11-07088 ..... $226.95

KANNAD PROGRAMMING DONGLE INT - Can be use with the following Kannad ELT models: (AF-COMPACT, AF, AF-H, AP, AP-H, AS, SURVIVAL) P/N 11-06990 ..... $316.00

KANNAD PROGRAMMING DONGLE INTEGRA/SA -
P/N 11-12330 ..... $698.00

KANNAD PROGRAMMING DONGLE INTEGRA LONG RANGE -
P/N 11-12331 ..... $515.00

KANNAD 406 PR600 ELT PROGRAMMING TRAINER - Replaces the former PR550 Programming Equipment kit. P/N 11-07102 ..... $1,065.00

KANNAD 406 AS CARRY OFF BAG - P/N 11-07716 ..... $233.95

KANNAD 406 AS CARRY OFF BAG SHORT - ..... P/N 11-07718

KANNAD 406 AS MOUNTING BRACKET - ..... P/N 11-07719

AF COMPACT INSPECTION KIT - P/N 11-08063 ..... $54.75

KANNAD 406 AS LOCKING PIN - P/N 11-07719 ..... $44.50

KANNAD ACK RETRO-FIT INSTALLATION KIT - Contains everything you need to ensure a simple swap-over. P/N 11-10007 ..... $181.95

KANNAD AMERI-KING RETRO-FIT INSTALLATION KIT - Contains everything you need to ensure a simple swap-over P/N 11-10008 ..... $181.95

AV

ARTEX ME406 ELT

The Artex ME-406 is a single output ELT. Two emergency frequencies (121.5 and 406.028 MHz) utilize the same RF output, requiring only one coax cable to connect to the new series of Artex single input antennas. The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 MHz. Every 50 seconds for 440 milliseconds the 406 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system.The mounting hardware for the ME-406 Series is compatible with all previous models of Artex 406 MHz, as well as the ELT200 Series, ACK, Pointer Model 3000 ELT and Narco ELT's. Current owners of Artex 2-frequency ELT can re-use the remote switch in the cockpit as well as the wiring harness from the cockpit to the ELT thus greatly reducing installation costs.

USA PROGRAMMED ELTS			
Artex No.	Part No.	Description	Price
ME406	11-03492	Artex ME406 ELT w/ whip antenna.	$925.00
ME406	11-03493	Artex ME406 ELT w/ rod antenna.	$1,489.00
INTERNATIONAL PROGRAMMED ELTS			
Artex No.	Part No.	Description	Price
ME406	11-04652	Artex ME406 ELT w/ whip antenna. Can be programmed for international registered aircraft (Specify when ordering).	$939.00
ME406	11-06370	Artex ME406 ELT w/ rod antenna. Can be programmed for international registered aircraft (Specify when ordering).	$1,495.00

ACCESSORIES		
Description	Part No.	Price
Artex ME406 whip antenna	11-06978	$224.95
Artex ME 406 Rod Antenna	11-08597	$756.00
5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex.	11-06580	$2.42
Artex ME406 Replacement Battery Kit	11-05277	$169.95
Artex ME406 Mounting Tray	11-07191	$36.50
Artex NAV Remote Switch Kit	11-08542	$125.75

ARTEX ME406 HM ELT

The Artex ME-406 HM is a single output ELT. Two emergency frequencies (121.5 and 406.028 MHz) utilize the same RF output, requiring only one coax cable to connect to the new series of Artex single input antennas. The ELT automatically activates during a crash and transmits the standard swept tone on 121.5 MHz. Every 50 seconds for 440 milliseconds the 406 MHz transmitter turns on and transmits an encoded digital message to the Cospas/Sarsat satellite system.The mounting hardware for the ME-406 Series is compatible with all previous models of Artex 406 MHz, as well as the ELT200 Series, ACK, Pointer Model 3000 ELT and Narco ELT's. Current owners of Artex 2-frequency ELT can re-use the remote switch in the cockpit as well as the wiring harness from the cockpit to the ELT thus greatly reducing installation costs.

USA PROGRAMMED ELTS			
Artex No.	Part No.	Description	Price
ME406 HM	11-04966	Artex ME406 HM ELT w/ rod antenna.	$1,956.00
INTERNATIONAL PROGRAMMED ELTS			
Artex No.	Part No.	Description	Price
ME406 HM	11-05670	Artex MA406 HM ELT w/ rod antenna. Can be programmed for international registered aircraft (specify when ordering).	$2,004.00

ACCESSORIES		
Description	Part No.	Price
5-Conductor AWG 22 Shielded Wiring for ELT to Remote Switch Installation. Recommended by Artex.	11-06580	$2.42
Artex ME406 replacement battery kit	11-05277	$169.95

ARTEX ME406/P ELT

Uses the proven technology of the ME406 and attaching a removable wrap-around auxilliary flex antenna. Allows the disconnection of the ELT from the installed aerial antenna, removal of the transmitter from a downed aircraft and after attaching the flexible antenna the distress call is again transmitted with full signal strength. Although Search and Rescue authoritiese recommend to remain in close proximity to the aircraft, using the ME406/P in it's portable version enables to wait for the Search and Rescue crews in areas sheltered better from the environment.

USA Programmed ..... P/N 11-05671 ..... $2,276.00
International Programed..... P/N 11-06985 ..... $2,276.00

ARTEX C406 ELT

Operates on the latest SAR frequency of 406.025 MHz & 121.5 243 MHz. Ready to connect to the Artex ELT NAV interface. Includes ELT transmitter, LiMnO2 5-year battery pack, mounting bracket, remote switch, horn/buzzer, coax cables, high speed blade antenna, installation hardware, and installation and operation manual. The C406-1 is approved for aircraft operating speeds up to Mach 1, and C406-2 is approved for speeds up to 350 knots. COSPAS/SARSAT, FAA TSO C126 & JTSO-2C126 Approved.

C406-1 ELT with 110-340 Blade Ant. U.S. .....P/N 11-02984.....$4,063.00
C406-1 ELT with 110-340 Blade Ant. Intl. .....P/N 11-09320.....$4,063.00
CC2 ELT with Rod Antenna.....P/N 11-02985.....$3,723.00

EXCLUSIVELY FROM AIRCRAFT SPRUCE
EMERGING LIFESAVING TECHNOLOGIES 406 ELT WITH INTERNAL GPS.

Emerging Lifesaving Technologies has presented the first ELT with internal GPS approved for General Aviation. Along with the 406MHz emergency signal, Copas/ Sarsat satellites will read your specific GPS location during a crash. The GPS automatically updates every 15 seconds and upon activation bursts a 5 watt signal within 25 meters every 50 seconds to the Global Satellite System. Search and Rescue will be notified of your location within minutes. The ELT406GPS mounts with most standard ELT configurations from previous manufacturers. GPS data comes from the internal module in the ELT- 406GPS. There is no need to install expensive interface modules and retrieve GPS information from existing systems. The antenna houses both 406 MHz and GPS passive antenna in a sleek blade configuration. A replaceable 5 year battery pack is easily installed by the owner/operator. With American Ingenuity and American Engineering, Emerging Lifesaving Technologies is committed to keeping all of their products "Made in the U.S.A".

Specifications: • Output Power: 5W (440ms/50sec) for 72 hours @ -20C to +50C. • GPS Cycle Time: Every 15 seconds. • Battery: 5-Year Lithium (LiMn02). • Weight: ELT Transmitter - 2.5 lbs Mounting Tray - 0.3 lbs. • Total Weight: 2.8 lbs. • Dimensions: 7.715" L x 3.660" H x 4.200"

In the Box: • ELT • Coax Cables • Antenna • Remote Switch • Install Kit.

Description	Part No.	Price
E.L.T. 406 with internal GPS USA	11-08053	$1,199.00
E.L.T. 406 with internall. GPS International	11-08456	$1,199.00
E.L.T. 406 Helicopter 6G with internal GPS USA	11-08150	$1,499.00
E.L.T. 406 Helicopter 6G w/ internal GPS Intl.	11-08457	$1,499.00
Accessories	Part No.	Price
8-Conductor Shilded Wire, 22 Gauge	11-09782	$2.90
E.L.T. 406 ELT Battery Pack	11-08152	$212.50
Universal Mounting Tray	11-08153	$63.75
406 GPS Dual Mid Speed Antenna, 250 KTAS at 35k feet	11-08155	$339.15
406 GPS Dual High Speed Antenna, 600 KTAS at 50K feet	11-08156	$594.15
Remote switch with Aural Alert	11-08164	$84.15
GPS Coaxial Cable SMA to SMA	11-08160	$33.15
Antenna Install Kit: Mounting Template, 8 Washers, 8 nuts	11-08163	$18.50
ELT Install Kit	11-08162	$63.75

ARTEX 2-WIRE REMOTE INTERFACE SYSTEM

This product allows an upgrade to an Artex 5-Wire 406 MHz ELT using an existing 2-wire configuration. The 2-Wire Remote Interface allows two wires from the existing wiring harness to connect the cockpit remote switch to the ELT for simplified, cost-efficient installation.

P/N 11-07776.....$1,291.00

ARTEX ACCESSORIES

ARTEX WIRE WHIP ANTENNA - Black whip antenna with inductor. For use with 121.5 and 243 MHz. Designed for speeds up to 200 knots TAS.

P/N 110-324.....$88.95

ARTEX WIRE WHIP ANTENNA 110-331 - Works with the 200S survival series ELT. P/N 11-04962.....$52.75

ARTEX BNC CABLE - 15 ft female BNC to BNC coax cable for use with 406 ELT series.

P/N 11-08130..... $325.00

SKY HUNTER 406 ELTS

Features: • Internal buzzer with remote connector. • No aircraft power required. • Approved to -40°C (tested to -55°C). • Size: 200 x 130 x 80mm (8 x 5 x 3 in.). • Weight: 1.5 kgs (3.3 lbs.)

Battery Life: 5 years • SkyKey Programmer (for fleet operators) • Includes ELT, Remote Switch, Mounting Bracket, Antenna, Antenna Cable, Battery Pack, "ELT Located Here" Decal.

Description	Part No.	Price
406 MHZ ELT Fixed Wing with Whip Antenna USA	11-10785	$999.00
406 MHZ ELT Fixed Wing with Whip Antenna Int.	11-10786	$999.00
406 MHZ ELT Auto Fixed Heli. G Switch USA	11-10787	$1,199.00
406 MHZ ELT Auto Fixed Heli. G Switch Int.	11-10788	$1,199.00
406 MHZ ELT Heli. with Whip USA	11-10789	$1,599.00
406 MHZ ELT Heli. with Whip Int.	11-10790	$1,599.00
406 MHZ ELT Auto Fixed High Velocity ANT USA	11-10791	$1,399.00
406 MHZ ELT Auto Fixed High Velocity ANT Int.	11-10792	$1,399.00
ELT Programming Dongle	11-10793	$199.00
Replacement 406 Battery Pack	11-10794	$175.00
406 MHZ ELT Auto Fixed High Velocity ANT Canada	11-10795	$1,399.00
406 MHZ ELT Fixed Wing with Whip Antenna Canada	11-10796	$999.00
406 MHZ ELT Heli. with Whip Canada	11-10797	$1,599.00
406 MHZ ELT Auto Fixed Heli. G Switch Canada	11-10798	$1,199.00

PERSONAL LOCATOR BEACONS

ARC AQUALINK PLB

The AquaLink™ broadcasts a unique registered distress signal that not only tells rescuers where you are, but who you are. The onboard GPS can fix your position to within 100 meters and then utilizes a powerful 406 MHz signal to relay your distress call to orbiting satellites. As local Search and Rescue is deployed, a separate homing signal and integrated LED strobe light guide rescuers to your exact location.

USA ..... P/N 11-09693 ..... $435.00
Canada ..... P/N 11-10404 ..... $395.00

ACR AQUALINK VIEW

The AquaLink™ View broadcasts a unique registered distress signal that not only tells rescuers where you are, but who you are. The onboard GPS can fix your position to within 100 meters and then utilizes a powerful 406 MHz signal to relay your distress call to orbiting satellites. As local Search and Rescue is deployed, a separate homing signal and integrated LED strobe light guide rescuers to your exact location. Features: 3 levels of integrated signal technology — internal GPS, powerful 406 MHz satellite signal and 121.5 MHz homing beacon Super bright integrated strobe. No float pouch required – Self Buoyant. Allows for multiple testing/display of GPS coordinates. Typical Performance 35 Hours. On Board 66 Channel GPS Reflective Keypad. Made in the U.S.A

USA ..... P/N 11-09241 ..... $518.00
Canada ..... P/N 11-10405 ..... $546.00

ARC RESQLINK 406 PLB WITH GPS

At 4.6 oz, the ResQLink™ weighs less than a couple of energy bars. And topping just 3.9 inches, it's smaller than the cell phone in your pocket. Full-powered, GPS-enabled rescue beacon designed for anglers, pilots and back country sportsmen. With three levels of integrated signal technology - GPS positioning, a powerful 406 MHz signal, and 121.5 MHz homing capability - the ResQLink™ quickly and accurately relays your position to a worldwide network of search and rescue satellites. A built-in strobe light provides visibility during night rescues.

Usa Version ..... P/N 11-10005 ..... $278.95
Canada Version ..... P/N 11-11357 ..... $309.00

KANNAD XS-ER GPS PLB

Minimum of 48 hours continuous operation. Compact, light weight, small size. Easy and intuitive activation. Waterproof to 10 meters and buoyant Subscription-free and no call charges. 5 year battery life User replaceable battery 406 MHz international messaging & 121.5 MHz homing signal

P/N 11-08711 ..... 2.95

ACR RESQLINK PLUS BUOYANT PLB-375

At 5.4 oz and topping just 4.5 inches, the ResQLink+ is the smallest buoyant Personal Locator Beacon available today. Small enough to easily be carried in a pocket, clipped to a backpack or stored inside an inflatable life jacket. With three levels of integrated signal technology - GPS positioning, a powerful 406 MHz signal, and 121.5 MHz homing capability - the ResQLink+™ quickly and accurately relays your position to a worldwide network of search and rescue satellites. A built-in strobe light provides visibility during night rescues.

P/N 11-10825 ..... $279.95

MCMURDO FASTFIND 220 PLB WITH GPS USA

The FAST FIND 220A PLB is a simple, lightweight, and floatable distress beacon that comes with a buoyancy pouch. This device relies on the 406 MHz frequency to transmit the user's unique ID and precise GPS location to the global satellite network. Within minutes search and rescue services (SAR) are alerted and continue to receive regular position updates. Once within range, rescuers can then home in on the beacon's second signal, a 121.5 MHz transmission, and find the user. ..... P/N 11-11997 ..... $249.00
Canada Version ..... P/N 11-11884 ..... $249.00

FASTFIND PLUS 406 PLB WITH BUILT-IN GPS

Features a built-in GPS receiver combined with a 406 MHz transmitter and 121.5 MHz homing signal. In the event of an emergency, an alert signal is transmitted to COSPAS-SARSAT satellites and forwarded to a rescue coordination center within typically 3 minutes. **NOT APPROVED FOR USE IN AUSTRALIA & NEW ZEALAND**

P/N 11-02256 ..... $563.00

RESCUEME PLB1 PERSONAL LOCATOR BEACON

The rescueMe PLB1 can be operated with a single hand in even the most challenging situations. There are NO CHARGES to use the service. When activated the rescueME PLB1 transmits your position and your ID to a Rescue Coordination Center.

USA ..... P/N 13-15036 ..... $299.00
Canada ..... P/N 13-15492 ..... $299.00

SPOT 2 SATELLITE GPS MESSENGER

New Enhancements: • Enhanced GPS • Extra Message Button • Tracking message queuing • Safety flaps over 911 and help message • Replaceable button cover (see left) • Illuminated buttons • Intrinsically safe • Sent message light • Case included (see below) • Enviromentally safe packaging Features: • Check In: Lets contacts know where you are and that you're okay. • Track: Acquires your GPS location every 10 minutes for 24 hours. • Alert SOS: Alert emergency assistance request with your exact location to GEOS every 5 min up to 4.7 days. • Ask For Help: Request help from friends and family every 5 min for 1 hour. Up to 10 contacts – phone & email. •Removable Case: Arm Band, Carabiner & Car Dash attachment. * For U.S. and Canada use only*

Spot 2 Orange ..... P/N 11-07878 ..... $79.95

SPOT CONNECT

Simply pair your smartphone with SPOT Connect, and get connected to a global satellite network that lets you send messages and GPS coordinates from virtually anywhere on the planet. Update Twitter and Facebook. Send email and text messages. Request non-emergency help from professional service providers. And in the case of a critical emergency, send an SOS message requesting emergency assistance. * For U.S. and Canada use only*

P/N 11-09612 ..... $149.95

SPOT 3 SATELLITE GPS MESSENGER

SPOT Gen3 - The latest in the line of SPOT rugged satellite GPS messengers, the SPOT Gen3 keeps you connected even when you're off-the-grid. Using the power of satellite technology SPOT works virtually anywhere in the world. Check in with your personal and professional networks, send custom messages and let others track your location in real-time via Google Maps™. In an emergency, transmit an SOS with your location to GEOS International Emergency Response Coordination Center.

Key Differences: SPOT 3 vs SPOT 2: Longer battery life - more reliable, Smaller size - easier to travel with, Internal vibration sensor to only send tracking messages while moving - more efficient, Vibration sensor also enables us to provide the new Unlimited Tracking service - ability to transmit indefinitely, New Movement Messaging - theft alerting capability, Variable rates in Track Mode (30 min, 15, 10, 5, 2) - more customizable, and much more.

P/N 11-11503 ..... $149.95

SPOT GLOBAL PHONE

When you are off-the-grid, the SPOT Global Phone can keep you connected to the people and data that matter most. Using satellite technology, it works virtually anywhere in the world. Visit www.findmespot.com to view the latest coverage map. The SPOT Global Phone boasts superior voice quality, the MOST competitive airtime pricing in the industry and the fastest handheld data speeds in mobile satellite today. Whether you are keeping in touch with the office, letting your friends and family know you are safe, or checking your email, you will be connected.

P/N 11-11512 ..... $499.00

SPOT TRACE THEFT-ALERT TRACKING DEVICE

Using 100% satellite technology, SPOT Trace tracks your most valuable assets beyond the reach of cellular coverage, using your smart phone or computer. With SPOT Trace, receive text/email messages when movement is detected and select from 2 ½, 5, 10, 30 or 60 minute tracking intervals. SPOT Trace includes: multiple mounting and power options (including rechargeable batteries and line power) and a compact, durable, lightweight design. SPOT Trace is waterproof rated IPX7 and includes a dock mode option that is designed specifically for monitoring assets typically stored on the water. Affordable and easy to use, SPOT Trace is the ultimate theft-alert tracking device for your aircraft, watercrafts, automobiles, and other valuables.

P/N 11-12224 ..... $99.95

AV

SHADIN AMS 2000 ALTITUDE MANAGEMENT AND ALERT SYSTEM

With a range of feature previously unavailable in general aviation, the Shadin Avionics AMS-2000 Altitude Management and Alert System brings advanced instrumentation to new levels of function and affordability. The Shadin Avionics AMS-2000 uses information from Mode-C altitude encoder to deliver: •Time-based Altitude Alerting, rather than fixed altitude buffers. •Automatic calculation and display of Density Altitude. • Real-time display of IVS without the inherent lag of your aircraft's static system. •Calculation and display of Aircraft and Engine Performance • Percentage, at your demand. • Made in the U.S.A., the AMS-2000 features a 12-month warranty.

The AMS-2000 coupled with the Falcon Altitude Encoder provides all advanced altitude alert functions previously noted, plus the following high-resolution altitude management functions: • Time-based level-off warning sounded and displayed 15 seconds from target altitude--smooth capture is assured regardless of climb or descent rate. • Digital display of altitude from -1000 to +62,000 feet in high resolution, 10-foot increments. • Digital reading of Instantaneous Vertical Speed (IVS). • Deviation envelope is adjustable in 10 foot increments P/N 10-03711.....$3,573.00

Falcon Altitude Encoder ..... P/N 11-12035.....$1,323.00

SPIDER S3 PORTABLE GLOBAL TRACKING SOLUTION

Spidertracks is the affordable, satellite-based flight tracking system designed specifically for aviation to bring peace of mind to pilots and their families. With a portable spider unit on board, the pilot's friends can follow the flight in real time on-line so they know the pilot is safe, and so they can share the fun of flying on-line. Automatic alerting and simple messaging mean the pilot can tell those they trust that they are safe or when they need help. The SOS is sent automatically as soon as the system loses contact with the aircraft, so help can be dispatched quickly when needed. Features: Streamlined design, Integrated keypad, Simple to use, Compatible with Aviator & Fleetpro websites, Global coverage in real time, Portable, Mark button text and email messaging, Automatic SOS alerting with Spiderwatch active tracking service, Manual SOS, Manual or automatic activation of Spiderwatch, Type certification not required, AFF compliant. Specifications: Dimensions: 3.5" x 4.7" x 1.0" (89mm x 119mm x 25mm), Weight: .35lb, Power Consumption: Operating <- 100mA at 12 V DC with reverse polarity protection., Operating Temp: -13 - +158 F, Frequency: L1, 1575 MHz, Channels: <- 50, Position accuracy: within 8'., Operating parameters: 59,000'. Speed limit of 500 KNTs. Power Source: Vehicle auxiliary power. The cigratte lighter plug supplied can be hard wired by a LAME. P/N 11-09789 ..... $995.00

SPIDER S5 PORTABLE GLOBAL TRACKING SOLUTION

The S5 is perfect for the safety conscious commercial operator needing to enhance communication between people on the ground and in the air, the Spider S5 is compact with an integrated keypad and will easily fit on the glare shield.

P/N 11-11464 .....$1,795.00

STRIKEFINDER® DIGITAL WEATHER AVOIDANCE SYSTEM

Detects and analyzes the electrical activity emanating from thunderstorms within a 200 nautical mile (nm) radius of the aircraft. A unique graphic display plots an accurate, reliable and easily-interpreted picture of electrical activity, that you can use to circumnavigate the hazards associated with thunderstorms. Determines the bearing, range and severity of the activity. Strike data is plotted on the display as single orange dots by range and azimuth, in relation to the aircraft symbol ("heads up"). Must be installed by Advantage Avionics or another approved StrikeFinder dealer except for experimental aircraft.

Description	Part No.	Price
Strike Finder Standard System	11-00348	$3,589.00
Strike Finder with Ultra Bright Display	11-00348	$3,589.00
Strike Finder with LED Round Display	11-11283	$3,580.00
Strike Finder with LED 3ATI Display and clamp	11-11285	$3,699.00
Strike Finder with LED Round Display with Gyro	11-11286	$4,375.00
Strike Finder with LED 3ATI Display with Gyro	11-11287	$4,375.00
Strike Finder with LED 3ATI Display with Gyro and Clamp	11-11288	$4,489.00
Strike Finder Upgrade	11-00349	$1,195.00

MONROY ATD-300 AIR TRAFFIC ALERT

The Monroy ATD-300 provides that continuous traffic awareness in a compact size. Detects all transponder type replies from nearby traffic and displays their proximity and their altitude on a bright 8-character dot matrix display. Simultaneously, a clear female voice provides voice alerts in relation to traffic proximity. It even has a test mode to verify onboard transponder opeation. All of this and more in the size of an alumminum box (2.75"w x 0.75"h x 5"d) no bigger than your intercom. With the Plug N' Fly feature you jut plug the ATD-300 into the cigarette lighter (for power) and the aircraft headphone jack (for voice feedback) and you are ready to fly. No panel space or installation is required. Velcro and mounting brackets are provided for location on top or bottom of the instrument panel and in the panel. The unit comes with a detachable antenna, cigarette lighter power cord, and headphone cable for Plug N' Fly setup. The ATD-300 Traffic-Watch provides multiple capabilities that enhance the safety of flight, such as: • Traffic Range up to 5nm • High/Low Voltage alarm • Traffic MSL Altitude • Auto Mode Display • Voltage Indication • ATD-200 Interchangeable • Traffic relative altitude readout • Host transponder altitude/code readout • Bright LED 8 character dot matrix display Specifications: Weight: 10 oz.; Frequency: 1090 MHz; Max Range: 5nm. ..... P/N 11-02449 ..... $669.00

ANT-300 Antenna 5"x3"x1" single BNC..... P/N 11-08481 ..... $347.00

PROXALERT R5 - COLLISION AVOIDANCE SYSTEM

The R5 is a passive collision avoidance system. It detects transponder replies of aircraft flying in your vicinity and displays simultaneously both squawk code, altitude, vertical trend and estimated distance of the 3 closest threats. The R5 will increase your ability to visually locate threat aircraft and better apply the FAA 'See and Avoid' concept. The R5 has been designed to be very robust against interference coming from DME equipment and other sources of disturbance. Offers significant operational improvements over previous generation products at a very attractive price. The R5 comes with a 3 year manufacturer warranty. P/N 11-02782.....$779.00

INSIGHT TAS 1000 AIR DATA COMPUTER WITH WINDICATOR

Today's modern avionics integrate many functions with your GPS, but standard installations leave many important features untapped. The TAS 1000 Multi-Function Data Source was specifically designed to supply all the information needed to fill in the missing pieces of your GPS or MFD display in real-time. TAS 1000 provides the pilot with a wealth of useful information all based on real time measurements of airspeed, altitude, temperature, fuel flow, heading, ground speed and track. Designed to interface with many brands of GPS, TAS 1000 unlock many previously hidden data pages in most GPS navigators, In addition to TAS 1000s in flight advisory function, TAS 1000 can also serve as a backup altimeter, airspeed indicator or fuel flow meter. The TAS 1000 is designed for use in any piston, turboprop, or jet aircraft and provides a full compliment of features when interfaced to a slaved compass system or HSI, fuel transducers, and compatible GPS system. TAS 1000 will deliver a useful subset of features even if all the interfaces are not available.

The Windicator is an integral part of the TAS1000 system. It presents a previously unavailable graphical display of the winds aloft in real time. The Windicator information alone is so useful that it makes the TAS 1000 installation worthwhile. TAS 1000 system options include an altitude encoder to provide altitude information to a transponder or GPS unit as well as alerting the pilot with overspeed, altitude, approach & altitude difference alerts.

MUST BE DEALER INSTALLED.

Part No.	Insight No.	Description	Price
11-00626	1000-001-P	TAS1000 Sys. for Piston Engine Aircraft (Incl. 1 Windicator) 18,000ft. Alt- 250kt max. Front Mount.	$2,850.00
11-00627	1000-001-T	TAS1000 for turbo-charged Piston & Turboprop aircraft (Incl.1 Windicator) 55,000ft. Alt-500kt max.	$4,275.00
11-00628	1000-002	Windicator (replacement) Front Mount.	$795.00
11-11535	1000-002-B	Windicator (replacement) Rear Mount.	$725.00
11-00629	1000-003	Expansion Module (Alt. encoder, Alt. Serializer, & Overspeed warn.)	$495.00
Fuel Injection - Fuel flow smart sensors for Piston Engine aircraft			
11-00630	1000-004-1	Spine Mount, 201, Fuel Injected	$475.00
11-10414	1000-004-4	Spine Mount, 231, Gravity Fed	$515.00
11-10412	1000-004-2	Firewall Mount, 201, Fuel Injected	$475.00
11-10415	1000-004-5	Firewall Mount, 231, Gravity Fed	$515.00
11-10413	1000-004-3	Inline Mount, 201, Fuel Injected	$475.00
11-10416	1000-004-6	Inline Mount, 231, Gravity Fed	$515.00

AV

DYNON EFIS-D10A

Dynon's EFIS-D10A is a full-featured Electronic Flight Information System in a small package. This instrument fits into a standard 3-1/8" panel hole, making it an ideal candidate for replacing vacuum and electric attitude indicators. In addition to a full complement of flight instruments, the EFIS-D10A also has a built-in HSI and autopilot capability.

EFIS-D10A features and options: • Sunlight-readable, 4" color display with full dimming control • Attitude Indicator, Heading, Altimeter, ASI, VSI, Turn Coordinator / Slip/Skid Ball, HSI, OAT, TAS, Angle of Attack, Voltmeter • Altitude encoder output • Dual-axis autopilot • Backup battery • 25 User-defined checklists • Dynon three-year factory limited warranty.....EFIS-D10A Instrument (with out battery) P/N 10-00844..... $2,095.00

EFIS-D10A OPTIONS

Description	Part No.	Price
Internal Li-Ion Backup Battery	10-00755	$129.95
Remote Compass (EDC-D10A)	10-01046	$99.95
OAT Probe (requires EDC-D10A)	10-01823	$66.75
D10 Flush Mount Bracket	10-00757	$19.95
Optional AP74 Vertical	10-03565	$450.00
Optional AP74 Horizontal	10-03566	$449.00

Description	Part No.	Price
AOA/Pitot Probe (unheated)	10-01157	$196.50
Wiring Harness	10-01158	$79.50
Encoder Converter Module (serial to parallel converter for gray code transponders)	10-01159	$79.85
USB-Serial Converter	10-01824	$21.50
Roll Servo Kit RV10	10-04076	$795.00

DYNON EFIS-D100

Dynon's EFIS-D100 includes all of the instruments and features of the EFIS-D10A, but on a brilliant 7" wide-screen display with full dimming control. The larger size allows for multiple information pages to be displayed side-by-side in a split-screen format, enabling you to have full PFD while also displaying HSI, timers, or engine monitoring information from your Dynon EMS.

Additionally, the EFIS-D100 is available in an optional Super-Bright Screen format, improving its readability and overall performance in all light conditions.

Dimensions: 6.95" W x 4.90" H x 4.51" D

Includes Dynon three-year factory limited warranty

EFIS-D100 System (includes remote compass, mounting tray & USB-serial converter P/N 10-01705 ..... $2,425.00

EFIS-D100 System with Super Bright Screen .....P/N 10-02155 ..... $2,485.00

EFIS-D100 OPTIONS

Description	Part No.	Price
Internal Li-Ion Backup Battery	10-00755	$129.95
OAT Probe	10-01823	$66.75
AOA/Pitot Probe (unheated)	10-01157	$196.50
Roll Servo Kit RV10	10-04076	$795.00

Description	Part No.	Price
Wiring Harness	10-01158	$79.50
Encoder Converter Module (serial to parallel converter for gray code transponders)	10-01159	$79.85

DYNON EFIS-D6 / EFIS-D60

Because some like to keep it simple, Dynon offers the EFIS-D6 and EFIS-D60 as basic, even more affordable Electronic Flight Information System (EFIS) solutions. Perfect for pilots who want to save panel weight, space, and installation time compared to a conventional analog gauges, the EFIS-D6 and EFIS-D60 feature all the amenities of a traditional six-pack while also adding a voltmeter and altitude encoder. The EFIS-D6 fits into a standard 3-1/8" panel hole, making it an ideal candidate for replacing vacuum and electric attitude indicators. The EFIS-D60 maintains the same profile and 7" screen as the EFIS-D100, and is available in the Super-Bright screen version only. EFIS-D6 / EFIS-D60 features and options: • Sunlight-readable, color display with full dimming control • Attitude Indicator, Heading, Altimeter, ASI, VSI, Turn Coordinator / Slip/Skid Ball, Angle of Attack, Voltmeter • Altitude encoder output • Backup battery • Dynon three-year factory limited warranty.

Description	Part No.	Price
EFIS-D6	10-03865	$1,575.00
EFIS-D60 With Super Bright Screen	10-03866	$1,825.00
EFIS Wiring Harness	10-01158	$79.50

Accessories	Part No.	Price
EFIS/FLDEK Wiring Harness	10-01158	$79.50
EFIS Backup Battery D180 D100 D60	10-00755	$129.95
OAT Probe D180 D100 D60 D10A D6	10-01823	$66.75
Flush Mount Bracket D10A D10 D6	10-00757	$19.95

DYNON HS34 HSI EXPANSION MODEL

The HS34 HSI Expansion Module was designed to enhance the capability of Dynon's best-selling EFIS products. The panel-mounted HS34 not only expands the HSI functionality of your EFIS-D10A, EFIS-D100, or FlightDEK-D180, but also enables several new features for any Dynon instrument to which it is networked: • Allows Dynon EFIS to interface with multiple radios and GPS devices simultaneously • Includes multiple interfaces to accommodate analog, ARINC-429 and RS-232 inputs • Accepts signals from marker beacon receivers and DME devices • Backlit to facilitate night flight conditions • Designated control knobs for adjusting Heading, Course (OBS), or general purpose values such as barometer. • Designated NAV and Bearing Source selection buttons • Simple 2-wire connection to Dynon EFIS instruments. • Dimensions: 1.639" W 4.903" H 4.951" D • Dynon three-year factory limited warranty

Dynon HS34 HSI Expansion Model - Vertical ..... P/N 10-02590.....$645.00

Dynon HS34 HSI Expansion Model - Horizontal ..... P/N 10-02773.....$646.00

DYNON D1/D2 POCKET PANEL - PORTABLE EFIS

"A LITTLE ATTITUDE FOR EVERYONE" Dynon introduces a real, portable attitude indicator that can be used by ALL pilots. The D1 utilizes the Dynon ARHS technology that has made them the leading supplier of EFIS for experimental and light sport aircraft. Unlike smartphone apps, the D1 displays actual aircraft attitude. Features: • Proven Dynon MEMS-based attitude sensors • Accurate pitch and roll: A true artificial horizon • Internal Li-Ion battery and GPS for hours of portable use • Versatile portable mounts: RAM suction mount and 3-1/8" panel hole "pinch" mount both included • GPS ground speed and track (heading) • GPS altitude and vertical speed • Turn rate • Slip/skid ball • Dimmable screen for night flight • approx. 3½" x 3¼" x 1"

Included accessories are: • AC Wall Charger • DC Vehicle Charger • Qty 2 Mounting Cradles • RAM® Portable Suction Cup Mount • Portable "Pinch" Mount for Standard 3-1/8" Instrument Hole • External GPS Antenna.

Dynon D1 ..... P/N 11-10739..... $1,195.00

DYNON D2 ADDS: WiFi, which sends data for display on iPads, smart phones, and tablets using compatible aviation applications. (Compatible applications include WingX® Pro7™, AOPA® FlyQ™, BendixKing® myWingMan™, iHUD Remote™, and Air Navigation Pro™.) Second page G-Meter displays current load factor and records minimum and maximum. Dynon D2 .....P/N 11-12158..... $1,425.00

DYNON AVIONICS SKYVIEW ENGINE MONITOR MODULE FOR ROTAX 912IS

Dynon Avionics announces SkyView support for the Rotax 912iS engine. Engine parameters available from the 912iS engine computer include RPM, manifold pressure, oil pressure, oil temperature, coolant temperature, EGT for all four cylinders, ECU voltage, and engine hours. All the other normal SkyView SV-engine functions are still available using the SV-EMS-221, such as fuel level, trim position, battery voltage, and contacts. A 912iS-specific engine sensor kit that includes the engine wiring harness, a Kavlico fuel pressure sensor, and an amps shunt are also available. See Accessories.

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Enginge Monitor Module ..... P/N 10-04941..... $1,025.00

Probe Package ..... P/N 10-04942..... $189.95

AV

DYNON EMS-D10 ENGINE MONITORING SYSTEM

The Dynon EMS-D10 offers more engine information in less space then ever before – full engine monitoring with up to 27 separate inputs on a highly readable 4" display, installed in your standard 3-1/8" panel hole. A designated Fuel Computer page allows the pilot to see fuel levels for up to 4 tanks, fuel pressure, fuel flow, fuel used, fuel remaining, time remaining and fuel required to destination all on one optimized display. To keep the classic look and feel of the Dynon product family, the EMS-D10 utilizes the same highly-visible display, keypad, and bezel as the best-selling EFIS-D10A – and will provide engine information to your Dynon EFIS through a simple 2-wire connection. As an added safety feature, the EMS-D10 also features programmable alarms which can be displayed on screen, through a separately mounted indicator light, or by an audible annunciation through your intercom. EMS-D10 features and options: • Sunlight-readable, 4" color display with full dimming control • Replaces up to 16 different types of gauges • Individual displays for up to 6 EGT and 6 CHT inputs • Customizable displays for Tachometer, Fuel Pressure, Oil Pressure, Oil Temp, Manifold Pressure, Volts/Amps, Carb Temp, OAT, Coolant Temp /Pressure, Hobbs/Tach Time • Fuel level display for up to 4 tanks • Fuel flow measurement with fuel computer display • Customizable settings for Green/Yellow/Red parameters on all inputs• Inputs for flaps/trim position sensors and contacts • Programmable visual and audio alarms • 25 User-defined checklists • Dynon three-year factory limited warranty

P/N 10-01160 ..... $1,665.00

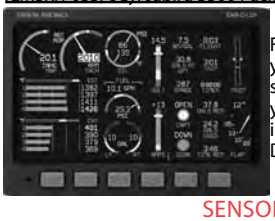
COMPLETE ENGINE PACKAGES

(EMS-D10 Engine Monitor, engine sensors and 2 wiring harnesses)

Description	Part No.	Price
EMSKIT-L4C, 4Cyl Lycoming/Continental Package (Carbureted)	10-01161	$2,363.00
EMSKIT-L4F, 4Cyl Lycoming/Continental Package (Fuel Injected)	10-01162	$2,343.00
EMSKIT-L6C, 6Cyl Lycoming/Continental Package (Carbureted)	10-01163	$2,513.00
EMSKIT-L6F, 6Cyl Lycoming/Continental Package (Fuel Injected)	10-01164	$2,492.00
EMSKIT-RTX, 4Cyl Rotax 912/914 Package	10-01830	$1,949.00
EMSKIT-J22, 4Cyl Jabiru 2200 Package	10-01832	$2,143.00
EMSKIT-J33, 6Cyl Jabiru 3300 Package	10-01834	$2,263.00

EMS OPTIONS

Description	Part No.	Price
Capacitance to Volt Converter	10-02159	$49.95
Fuel Flow Sensor	10-01165	$147.95
USB-Serial Converter	10-01824	$21.50
D10 Flush Mount Bracket	10-00757	$19.95
EGT Thermcouple Ext Wire	10-01167	$0.99
CHT Thermcouple Ext Wire	10-01168	$0.99



DYNON EMS-D120 ENGINE MONITORING SYSTEM

Featuring all of the same inputs and features of the EMS-D10, the Dynon EMS-D120 brings full engine monitoring to your panel on a stunning 7" wide-screen display. The larger size allows for multiple information pages to be displayed side-by-side in a split-screen format, enabling you to have full view of your primary engine inputs while also viewing your fuel computer, engine timers, or flight information from a Dynon EFIS. Additionally, the EMS-D120 is available in an optional Super-Bright Screen format, improving its readability and overall performance in all light conditions. Dimensions: 6.95" W x 4.90" H x 4.51" D. Includes Dynon three-year factory limited warranty

EMS-D120 w/ Superbright Screen ..... P/N 10-02156 ..... $2,129.00

SENSOR INPUTS

6 - EGT (Type K Thermocouple)
6 - CHT (Type J Thermocouple)
2 - Fuel Level (Resistive [0-1 K ohm] or Capacitance [0-5 volt])
2 - RPM (Frequency)2 - Contacts
1 - Manifold Pressure (Voltage)
1 - Oil Temperature (Resistive)
1 - Oil Pressure (Resistive)
1 - Fuel Pressure (Resistive)
1 - Fuel Flow (Frequency)
1 - Amps (Shunt)
1 - Volts
1 - Turbine Inlet Temperature (Type K Thermocouple)
3 - General Purpose (Either resistive or voltage for OAT, Fuel Tanks 3 & 4, Coolant Temp/Press, Carb Temp)

EMS OPTIONS

Description	Part No.	Price
Capacitance to Voltage Converter	10-02159	$49.95
Fuel Flow Sensor	10-01165	$147.95
USB-Serial Converter	10-01824	$21.50
EGT Thermcouple Ext Wire	10-01167	$0.99
CHT Thermcouple Ext Wire	10-01168	$0.99

COMPLETE ENGINE PACKAGES

(EMS-D120 Engine Monitor, engine sensors and 2 wiring harnesses)

Description	Part No.	Price
EMSKIT-L4C, 4Cyl Lycoming/Continental Package (Carbureted)	10-01826	$2,595.00
EMSKIT-L4C, wirh Super Bright Screen	10-02201	$2,827.00
EMSKIT-L4F, 4Cyl Lycoming/Continental Package (Fuel Injected)	10-01827	$2,575.00
EMSKIT-L4F, wirh Super Bright Screen	10-02203	$2,798.00
EMSKIT-L6C, 6Cyl Lycoming/Continental Package (Carbureted)	10-01828	$2,598.00
EMSKIT-L6C, wirh Super Bright Screen	10-02197	$2,864.00
EMSKIT-L6F, 6Cyl Lycoming/Continental Package (Fuel Injected)	10-01829	$2,885.00
EMSKIT-L6F, wirh Super Bright Screen	10-02196	$2,956.00
EMSKIT-RTX, 4Cyl Rotax 912/914 Package	10-01831	$2,184.00
EMSKIT-RTX, wirh Super Bright Screen	10-02166	$2,474.00
EMSKIT-J22, 4Cyl Jabiru 2200 Package	10-01833	$3,431.00
EMSKIT-J22, wirh Super Bright Screen	10-02193	$2,607.00
EMSKIT-J33, 6Cyl Jabiru 3300 Package	10-01835	$2,457.00
EMSKIT-J33, wirh Super Bright Screen	10-02194	$2,727.00

DYNON FLIGHTDEK-D180

The FlightDEK-D180 combines Dynon's best-selling EFIS and EMS (Engine Monitor System) instruments into one brilliant 7" sunlight readable display, giving you an unparalleled assortment of functions in one easy-to-use, very powerful instrument. Pilots may elect to display both EFIS and engine monitor functions simultaneously in split-screen format or switch over to a full screen EFIS or EMS via simple hotkey commands – allowing for full monitoring of any combination of PFD, engine sensors, fuel computer, HSI, and timers. Like all other Dynon instruments, the FlightDEK-D180 comes with a 3-year warranty and free lifetime software updates. Additionally, the FlightDEK-D180 is available in an optional Super-Bright Screen format, improving its readability and overall performance in all light conditions.
Dimensions: 6.95" W x 4.90" H x 4.51" D Includes Dynon three-year factory limited warranty

DEK-D180 w/ Superbright Screen..... P/N 10-02157 ..... $3,280.00

COMPLETE ENGINE PACKAGES

(FlightDEK-D180, engine sensors and 2 wiring harnesses)

Description	Part No.	Price
EMSKIT-L4C, 4Cyl Lycoming/Continental Package (Carbureted)	10-01837	$3,978.00
EMSKIT-L4C, with Super Bright Screen	10-02198	$3,978.00
EMSKIT-L4F, 4Cyl Lycoming/Continental Package (Fuel Injected)	10-01838	$3,958.00
EMSKIT-L4F, with Super Bright Screen	10-02199	$3,958.00
EMSKIT-L6C, 6Cyl Lycoming/Continental Package (Carbureted)	10-01839	$4,015.00
EMSKIT-L6C, with Super Bright Screen	10-02190	$4,015.00
EMSKIT-L6F, 6Cyl Lycoming/Continental Package (Fuel Injected)	10-01840	$4,107.00
EMSKIT-L6F, with Super Bright Screen	10-02191	$4,107.00
EMSKIT-RTX, 4Cyl Rotax 912/914 Package	10-01841	$3,625.00
EMSKIT-RTX, with Super Bright Screen	10-02168	$3,625.00
EMSKIT-J22, 4Cyl Jabiru 2200 Package	10-01842	$3,758.00
EMSKIT-J22, with Super Bright Screen	10-02192	$3,758.00
EMSKIT-J33, 6Cyl Jabiru 3300 Package	10-01843	$3,878.00
EMSKIT-J33, with Super Bright Screen	10-02195	$3,878.00

FLIGHTDEK OPTIONS

Description	Part No.	Price
Battery	10-00755	$129.95
OAT Probe	10-01823	$66.75
AOA/Pitot Probe (unheated)	10-01157	$196.50
AOA/Pitot Probe (heated)	10-02158	$449.00
Encoder Converter Module	10-01159	$79.85
Fuel Flow Sensor	10-01165	$147.95
EGT Thermcouple Ext Wire	10-01167	$0.99
CHT Thermcouple Ext Wire	10-01168	$0.99
OAT	10-01176	$36.95
HS34 HSI Expan. Mdl. Vert.	10-02590	$645.00
HS34 HSI Expan. Mdl.Hor.	10-02773	$646.00
Capacitance to Volt Converter	10-02159	$49.95
Wiring Harness	10-01158	$79.50
Roll Servo Kit RV10	10-04076	$795.00
AOA/Pitot Unheated Boom	10-02789	$197.00
Mounting Hardware (L Tube Only)	10-01820	$102.95
EGT, 0.75-1.25" Hose Clamp	10-01844	$36.65
EGT, 1-2.25" Hose Clamp	10-01169	$36.65
EGT, 1-1.75" Hose Clamp	10-05079	$36.00

Description	Part No.	Price
CHT Adj. Bayonet, 3/8-24 UNF	10-01170	$38.85
CHT, Ring Terminal 12mm	10-01845	$25.75
Manifold Press. 0-60" Hg, 1/8" Hose	10-01171	$64.85
Oil Press. Kavlico 1/8-27 NPT 150 PSI	10-04823	$87.00
Oil Temp 5/8-18 UNF 100-240 F	10-01173	$19.95
Carb Fuel Press Kavlico 1/8-27 NPT, 15 PSI	10-04820	$83.00
Injected Fuel Press Kavlico 1/8-27 NPT, 50 PSI	10-04825	$87.00
Carb. Air Temp. 1/4-28 UNF, -50 to 150F	10-01846	$36.95
AMPS Shunt 0-60	10-01178	$15.65
EGT 2 Cylinder 6 ft	10-01847	$49.85
EGT/CHT 4 Cylinder 6 ft	10-01179	$88.00
EGT/CHT 6 Cylinder 6 ft	10-01180	$79.85
Engine Sensor Main Wire Harness 6 ft	10-01181	$82.75

SEE WWW.AIRCRAFTSPRUCE.COM FOR LISTING OF ALL ENGINE SENSORS, HARNESSES, & PACKAGES

DYNON AUTOPILOT SERVO + MOUNTING KIT PACKAGES

Dynon Avionics servos are dimensionally identical to other leading servos for drop-in upgradability. Behind the scenes, though, the SV line of servos are all-new. A lightweight aluminum case houses a stainless steel gear train to optimize weight while not sacrificing strength. The servo control arm is captured by a castellated nut and secured by a cotter pin, just like other critical interfaces in your aircraft. Each servo is managed by its own microprocessor, making the servo an active, smart extension of the autopilot. This simplifies the control-surface-to-servo calibration, and prevents the servo from driving itself endlessly like other servos can. As an ultimate mechanical failsafe, a simple and effective shear pin is employed to let you break the servo free of the aircraft control surface in an emergency.

Description	Part No.	Price
RV-6 Roll Servo + Mounting Kit (Includes Servo mounting kit RV-6 roll (fuselage):101020-001, pkg SV32L (long output arm): 100854-001	10-03555	$795.00
RV-7/8/10 Roll Servo + Mounting Kit (Includes Servo Mounting kit-RV-7/8/10 roll (R wing): 101020-003, pkg SV32 (std. output arm): 100854-000	10-03556	$795.00
RV-9 Roll Servo + Mounting Kit (Includes Servo Mounting kit-RV-9 roll (R Wing):101020-004, pkg SV32 (std. output arm): 100854-000	10-03557	$795.00

Description	Part No.	Price
RV-6/7/9 Pitch Servo + Mounting Kit (Includes Servo Mounting Kit-RV-6/7/9 Pitch: 101020-005, pkg SV32 (std. output arm): 100854-000)	10-03559	$795.00
RV- 4/8 Pitch Servo + Mounting Kit(Includes Servo Mounting kit- RV-4/8 Pitch : 101020-002, pkg SV32 (std. output arm): 100854-000	10-03560	$795.00
RV-10 Pitch Servo + Mounting Kit: (Includes servo mounting kit RV-10 pitch (fuselage):101020-006, pkg SV42 (std output arm): 101058-000	10-03893	$795.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR LISTING OF ALL ENGINE SENSORS, HARNESSES, & PACKAGES

DYNON SKYVIEW EFIS/EMS SYSTEM

Skyview 10" Display

Skyview 7" Display

SkyView is the latest glass-panel solution from Dynon Avionics, featuring a full PFD with synthetic vision, moving map with terrain and obstacles, engine monitor, and autopilot. Very bright, high-resolution screens with full dimming control provide excellent visibility in all conditions, while two multi-position control knobs allow easy user input. The full-color PFD features a full set of flight instruments over a highly-detailed 3D synthetic vision display, while your aircraft's position is shown on a moving map with color-coded terrain, obstacles, and airport/airspace information. In addition, the SkyView will accommodate full engine monitor display and a dual-axis autopilot through the addition of optional Dynon hardware. SkyView systems come standard with Dynon's three-year factory limited warranty. Dimensions: • 10" display: 10.32" W x 7.06" H x 2.14" D • 7" display: 7.64" W x 5.51" H x 2.14" D

Product Group	Dynon PN	Description	Spruce PN	Price
Screens	SV-D700	Skyview 7 inch Display Includes main wiring harness	10-03933	$2,549.00
--	SV-D1000	Skyview 10 inch Display Includes main wiring harness	10-03932	$3,389.00
--	SV-D1000T/B	10" SkyView Touch Display, bundle Includes SV-D1000T/A 10" SkyView Touch Display, SV-HARNESS-D37, and SV-SYNVIS-280 Synthetic Vision	10-05607	$3,985.00
--	SV-D1000T/A	10" SkyView Touch Display only, (no harness) Includes SV-SYNVIS-280 Synthetic Vision	10-05608	$3,895.00
EFIS/EMS/ GPS Components	SV-ADAHRS-200	SkyView ADAHRS - First	10-03936	$1,175.00
--	SV-ADAHRS-200 & 201	SkyView ADAHRS - Dual	10-04018	$1,965.00
--	101293-00	SkyView Secondary ADAHRS - Requires Primary	10-03937	$785.00
--	SV-EMS-220	SkyView Engine Monitoring Module	10-03938	$589.00
--	SV-GPS-250	SkyView GPS 5Hz Receiver Module	10-03939	$198.50
--	SV-MAP-270	SkyView GPS Navigation Software Enhancement	10-04678	$495.00
--	SV-BAT-320	SkyView Backup Battery	10-03940	$178.50
--	SV-ETHER-NET-3CC	Dynon Ethernet Cable	10-04679	$24.95
--	SV-HARNESS-D37	Dynon Display Harness with Wiring	10-03941	$93.50
--	101406-000	Skyview ARINC Adapter	10-04520	$469.95
--	SV-VPX-290	SkyView Vertical Power Unlock Code	10-04810	$275.00
--	SV-NET-1.5CC	Network Cable – Both ends with connectors, 1.5' long Aircraft Grade Tefzel® Wiring	10-05615	$39.75
--	SV-NET-3CC	Network Cable - Both ends with connectors, 3' long	10-03942	$39.90
--	SV-NET-6CC	Network Cable - Both ends with connectors, 6' long	10-03943	$46.50
--	SV-NET-10CP	Network Cable - 1 end with connector, 1 end with pins only, 10'	10-03944	$49.75
--	SV-NET-15CP	Network Cable - 1 end with connector, 1 end with pins only, 15'	10-03945	$54.85
--	SV-NET-20CP	Network Cable - 1 end with connector, 1 end with pins only, 20'	10-03946	$59.00
--	SV-NET-25CP	Network Cable - 1 end with connector, 1 end with pins only, 25'	10-04619	$64.95
--	SV-NET-30CP	Network Cable - 1 end with connector, 1 end with pins only, 30'	10-04620	$69.95
--	SV-NET-HUB	Network Hub	10-04904	$49.95
--	SV-NET-SPL	Network Splitter	10-03948	$65.00
--	SV-NET-SERVO	Network Autopilot Servo Wiring Kit Includes 20	10-04491	$54.75
Control Knobs	SV-KNOB-PANEL/H	SkyView Knob Control Panel (Horizontal)	10-05614	$245.00
--	SV-KNOB-PANEL/V	SkyView Knob Control Panel (Vertical)	10-05613	$245.00
ADS-B	SV-ADSB-470	Dynon SkyView ADS-B Weather Traffic and TFR Receiver	10-04980	$975.00
--	--	Dynon SkyView ADS-B with 5 Ft Harness	11-11938	$999.00
--	--	Dynon SkyView ADS-B with Custom Harness	11-11939	$1,025.00
Transponders	101409-000	SkyView SV-XPNDR-261 Mode S Class 1	10-04518	$2,195.00
--	--	SkyView Mode S Class 1 Transponder with 7 ft Harness	11-11953	$2,254.00
--	--	SkyView Mode S Class 1 Transponder with Custom Harness	11-11954	$2,270.00
--	101410-000	SkyView SV-XPNDR-262 Mode S Class 2	10-04519	$1,695.00
--	--	SkyView Mode S Class 2 Transponder with 7 ft Harness	11-11948	$1,753.00
--	--	SkyView Mode S Class 2 Transponder with Custom Harness	11-11949	$1,770.00

Product Group	Dynon PN	Description	Spruce PN	Price
Probes and Sensors	101711-000	Dynon Kavlico Lyc. / Cont. 4 Cyl Carb Probe Package	10-04827	$698.00
--	101711-003	Dynon Kavlico Lyc. / Cont. 4 Cyl Fuel Probe Package	10-04830	$678.00
--	101711-001	Dynon Kavlico Lyc. / Cont. 6 Cyl Carb Probe Package	10-04828	$848.00
--	101711-004	Dynon Kavlico Lyc. / Cont. 6 Cyl Fuel Probe Package	10-04831	$827.00
--	101711-002	Dynon Kavlico Rotax 912 Probe Package	10-04829	$345.00
--	101711-005	4 Cyl. Jabiru Probe Package	10-04832	$478.00
--	101711-006	6 Cyl Jabiru Probe Package	10-04833	$598.00
--	100403-003	Dynon EMS Fuel Flow Sensor 1/4" NPT Female	10-01165	$147.95
--	101690-000	Kavlico Carb Fuel Pressure Sensor	10-04820	$83.00
--	101691-000	Dynon Kavlico Coolant Sensor	10-04821	$83.00
--	101692-000	Dynon Kavlico Oil Pressure Sensor 75PSI	10-04822	$86.50
--	101693-000	Dynon Kavlico Oil Pressure Sensor 150 PSI	10-04823	$87.00
--	101715-000	Dynon Kavlico Gravity Fed Pressure Sensor 5 PSI	10-04824	$88.50
--	100654-000	Dynon Capacitance to Volt Converter	10-02159	$49.95
A/P Control	SV-AP-PANEL/H	SkyView Autopilot Control Panel (Horizontal)	10-05612	$545.00
--	SV-AP-PANEL/V	SkyView Autopilot Control Panel (Vertical)	10-05611	$545.00
Servos	SV32	Standard output arm, Retail Includes SV32:100754-000,Limiting Braket Kit: 101025-000	10-03561	$738.00
--	SV32C	Capstan, Includes SV32C: 100754-002, Capstan Accessory Kit: 101116-000	10-03950	$738.00
--	SV32L	Long Output Arm, Includes SV32L: 100754-001, Limiting Bracket Kit: 101025-000	10-03562	$738.00
--	SV42C	Capstan, Includes SV42C: 101008-002, Capstan Accessory Kit: 101116-000	10-03951	$738.00
--	SV42	Standard output arm, Includes SV42: 101008-000, Limiting Bracket Kit: 101025-000	10-03563	$738.00
--	SV42L	Long Output Arm, Includes SV42L: 101008-001, Limiting Bracket Kit: 101025-000	10-03564	$738.00
--	SV52	Standard Output Arm, Includes SV52: 101021-000, Limiting Bracket Kit: 101025-000	10-04492	$738.00
--	SV52C	Capstan, Includes SV52C: 101021-002, Capstan Accessory Kit: 101116-000	10-04493	$738.00
Servo + Mounting Kit Packages	--	RV-6 Roll Servo + Mounting Kit: Includes Servo mounting kit RV-6 roll(fuselage):101020-001, pkg SV32L (long output arm): 100854-001	10-03555	$795.00
--	--	RV-7/8 Roll Servo + Mounting Kit: Includes Servo Mounting kit- RV-7/8 roll (R wing): 101020-003, pkg SV32 (std. output arm): 100854-000	10-03556	$795.00
--	--	RV-9 Roll Servo + Mounting Kit: Includes Servo Mounting kit-RV-9 roll (R wing): 101020-004, pkg SV32 (std. output arm): 100854-000	10-03557	$795.00
--	--	RV- 4/8 Pitch Servo + Mounting Kit: Includes Servo Mounting kit- RV-4/8 Pitch: 101020-002, pkg SV32 (std. output arm): 100854-000	10-03560	$795.00
--	--	RV-6/7/9 Pitch Servo + Mounting Kit: Includes Servo Mounting Kit- RV-6/7/9 Pitch: 101020-005, pkg SV32 (std. output arm): 100854-000	10-03559	$795.00
--	--	RV-10 Roll Servo + Mounting Kit Package: Includes servo mounting kit RV-10 roll (right wing): 101020-003, SV42 (std output arm): 101058-000	10-04076	$795.00
--	--	RV-10 Pitch Servo + Mounting Kit: Includes servo mountign kit RV-10 pitch (fuselage): 101020-006, pkg SV42 (std output arm): 101058-000	10-03893	$795.00
Servo Push Rod Kits	--	Servo Push Rod Kit- Generic (Push-Pull)	10-03567	$25.75

AV

DYNON – GRT ENGINE INFORMATION SYSTEMS

DYNON SKYVIEW COM RADIOS

Integrating deeply with your Dynon SkyView system, the SV-COM-C25 tunes frequencies by airport and station type - rather than by spinning in a number - at the touch of a button. Dual concentric knob lets you spin in frequencies "the old fashioned way." SkyView will identify the airport and station type as you tune. Available in both horizontal and vertical versions. The control panel is only 1.27" deep.

Vertical Mount.....P/N 10-05251.....$1,295.00
Horizontal Mount...P/N 10-05252.....$1,295.00

DYNON SV INTERCOMS

For ALL experimental and light sport aircraft. Ample inputs for EFIS systems, stereo music, and all the other technology in your panel. High-Fidelity Audio Circuitry, Dual Radio Support, Fail-safe between the pilot headset, Horizontal and Vertical faceplates are both included; headset jack kits also included. Selectable Auto Mute, and Independent intercom Voice Activation.

Vertical or Horizontal Mount ..... P/N 10-05254 ..... $295.00

DYNON SKYVIEW DISPLAY / ENGINE PACKAGES

We have put together these avionics packages using only the latest in Dynon technology. All Dynon bundles are for experimental application. These bundles do include some cost savings versus buying each item individually so take advantage and get your panel set up in one quick order.

Easy Ordering:

Step 1: Select your preferred Dynon display package based on number and size of screens you need.

Step 2: Select your engine probe package based on your engine application.

Note: We can create a custom package with any combination of avionics units we carry so please contact our sales department if one of the combinations above is not exactly what you need.

Package	Contents	Part No.	Price
Skyview Display Package A	7" Screen with Wire Harness Primary ADAHRS Air Data Altitude Heading Back Up Battery GPS Antenna Unlock Code For Map Software	10-05527	$4,574.00
Skyview Display Package B	Dual 7" Screens with Wire Harness Primary ADAHRS Air Data Altitude Heading Back Up Battery GPS Antenna Unlock Code For Map Software	10-05528	$7,149.00
Skyview Display Package C	10" Screen with Wire Harness Primary ADAHRS Air Data Altitude Heading Back Up Battery GPS Antenna Unlock Code For Map Software	10-05529	$5,375.00
Skyview Display Package D	Dual 10" Screens with Wire Harness Primary ADAHRS Air Data Altitude Heading Back Up Battery GPS Antenna Unlock Code For Map Software	10-05530	$8,775.00
Skyview Display Package E	7" Screen with Wire Harness 10" Screen with Wire Harness Primary ADAHRS Air Data Altitude Heading Back Up Battery GPS Antenna Unlock Code For Map Software	10-05531	$7,974.00

Package	Contents	Part No.	Price
Skyview Lycoming / Continental 4 Cyl Carbureted Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - 4 Cyl. Lyc / Cont Carbureted	10-05532	$1,265.00
Skyview Lycoming / Continental 4 Cyl Fuel Injected Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - 4 Cyl. Lyc / Cont Fuel Injected	10-05533	$1,250.00
Skyview Lycoming / Continental 6 Cyl Carbureted Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - 6 Cyl. Lyc / Cont Carbureted	10-05534	$1,405.00
Skyview Lycoming / Continental 6 Cyl Fuel Injected Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - 6 Cyl. Lyc / Cont Fuel Injected	10-05535	$1,385.00
Skyview Rotax 912 Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - Rotax 912	10-05536	$915.00
Skyview Jabiru 4 Cyl Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - 4 Cyl. Jabiru 2200	10-05537	$1,050.00
Skyview Jabiru 6 Cyl Engine Pack	Engine Monitor Module Without Probes Kavlico Probe Package - 6 Cyl. Jabiru 3300	10-05538	$1,165.00

GRT EIS SYSTEMS

For over 22 years, Grand Rapids Technologies' EIS engine monitor has proven itself in most every aircraft engine installation from the most basic 2-stroke engines to turbines. It can be used as a stand-alone system in aircraft without an EFIS display, or an integral part of a GRT Avionics "glass cockpit" EFIS graphical engine display. EIS provides critical engine data and warnings that could save your life. Basic packages come with wiring harnesses and engine probes recommended by the engine manufacturer, including CHT, EGT, and oil pressure/temperature if sensors do not normally come with the engine. Advanced packages include all of the Basic probes plus fuel flow, current sensor, and manifold pressure. Visit www.aircraftspruce.com for more information on packages and probes. Lifetime warranty for manufacturer defects.

Description	Model	Part No.	Price
Lyc/Cont. Package, 4-cylinder, Basic	EIS-4K-LYC-BAS-PKG	11-11745	$1,070.00
Lyc/Cont Package, 4-cylinder, Advanced	EIS-4K-LYC-ADV-PKG	11-11746	$1,600.00
Lyc/Cont Package, 4-cylinder, Advanced, Long-Life EGT	EIS-4K-LYC-ADVLL-PKG	11-11747	$1,695.00
Lyc/Cont. Package, 6-cylinder, Basic	EIS-6K-LYC-BAS-PKG	11-11748	$1,265.00
Lyc/Cont Package, 6-cylinder, Advanced	EIS-6K-LYC-ADV-PKG	11-11749	$1,795.00
Lyc/Cont Package, 6-cylinder, Advanced, Long-Life EGT	EIS-6K-LYC-ADVLL-PKG	11-11750	$1,900.00
Jabiru 2200 Package, Basic	EIS-4K-JAB-BAS-PKG	11-11751	$895.00
Jabiru 2200 Package, Advanced	EIS-4K-JAB-ADV-PKG	11-11752	$1,290.00
Jabiru 3300 Package, Basic	EIS-6K-JAB-BAS-PKG	11-11753	$1,040.00
Jabiru 3300 Package, Advanced	EIS-6K-JAB-ADV-PKG	11-11754	$1,435.00
Rotax 912/914 Package, Basic	EIS-4K-RTX-BAS-PKG	11-11755	$899.00
Rotax 912/914 Package, Advanced	EIS-4K-RTX-ADV-PKG	11-11756	$1,300.00
Viking Package, Basic	EIS-4K-VIK-BAS-PKG	11-11757	$810.00
Viking Package, Advanced	EIS-4K-VIK-ADV-PKG	11-11758	$1,120.00
UL Power Package, Basic	EIS-4K-ULP-BAS-PKG	11-11759	$1,050.00
UL Power Package, Advanced	EIS-4K-ULP-ADV-PKG	11-11760	$1,170.00
Corvair Package, Basic	EIS-6K-CORV-BAS-PKG	11-11761	$1,140.00
Corvair Package, Advanced	EIS-6K-CORV-ADV-PKG	11-11762	$1,650.00

GRT SENSORS AND PROBES & ACESSORIES

Description	Model	Part No.	Price
Small EGT probe fits exhaust pipesfrom 1-2" diameter	EGT-HCS-01	11-09535	$44.50
Large EGT probe fits exhaust pipesfrom 1.5-2.5" diameter	EGT-HC-01	11-09533	$44.50
Long Life EGT Probe small, for 1-2" pipes	EGT-HC-SLL-01	11-11844	$58.90
8 mm compression-style EGT probe. Includes compression fitting.	EGT-CF-01	11-09534	$44.50
Long life EGT probe small clamp fits pipes 1-2" diameter.	EGT-HC-SLL-01	11-11844	$58.90
Current sensor, +/- 100 AMP. Suitable for aicraft with 60 amp alternators.	CS-01	11-06276	$84.75
Current Sensor +/- 50AMP. Suitable for aicraft with Rotax, Jabiru, and others with light duty charging systems.	CS-02	11-07224	$73.75
Manifold pressure sensor, 0-31 in. Hg. For normally-aspirated engines.	MAP-01	11-06274	$82.75
Manifold pressure sensor, 0-51 in. Hg. For turbocharged engines.	MAP-02	11-09542	$75.95
CNC Machined, Black Powdercoat to match EFIS	EIS-BEXEL	11-11467	$94.85
Bayonet-style CHT probe. Used mostly with Lycoming and Continental engines.	CHT-BAY-01	11-09538	$44.50
Replacement threaded adapter for bayonet style CHT probes.	BHT-ADP-01	11-09539	$5.95
Ring style CHT probe with 4 mm ring. Suitable for some Rotax installations.	CHT-04-01	11-11468	$15.95
Ring style CHT probe with 10 mm ring. Suitable for Rotax 912/914 installations.	CHT-10-01	15-06432	$17.00
Ring style CHT probe with 12 mm ring. Suitable for Jabiru installations.	CHT-12-01	11-11469	$17.95
Ring style CHT probe with 14 mm ring. Suitable for many 2-stroke engines including Rotax & Zenoah	CHT-14-01	11-09537	$17.95
Ring style CHT probe with 18 mm ring. Suitable for Continental engines without Bayonet CHT ports.	CHT-18-01	11-09536	$17.95
Pressure Senders for oil & coolant Ranges from 0-80 psi to 0-150 psi	HPS-01	11-11470	$42.65
Pressure Senders for oil & coolant Ranges from 0-80 psi to 0-150 psi	HPS-02	11-06423	$47.50
Coolant pressure sender 0-28 psi	LPS-02	11-09543	$55.75
Fluid Temperature Probe - 1/8-27 threads	FT-1827-02	11-09540	$23.50
Oil Temperature Probe - for Lycoming & Continental	FT-LC-01	11-09541	$41.95
EIS Outside air temp probe. Wire to either EIS or EFIS.	OAT-02	15-05248	$24.00
Oil Temperature Probe. Wire to either EIS or EIFS. Included with the EIFS system.	OAT-03	11-11227	$84.95
Coolant pressure sender 0-28 psi. Recommended for Carbureted Engines.	LPS-02	11-09543	$55.75
0-100 psi fuel pressure sender. Recommended for fuel injected engines.	HPS-SS-01	11-09545	$151.75
Machined brass probe works with most carburetors except Bing.	CARB-01	11-06273	$28.95
Princeton capacitive fuel level probe with 2 set points. For rectangular or airfoil shaped tanks with linear interpolation between the set points.	FL-PE-01	11-09544	$89.95
Princeton capacitive fuel level probe with 5 set points. For irregularly-shaped tanks. Works with Van's capacitive plates.	FL-PE-ADV	11-11848	$182.85
Capacitive Fuel Level Probe - Standard, 5 set point. PF or FM mounting	---	10-00258	$139.95

AV

GRT EFIS SYSTEMS

GRT AVIONICS SPORT SX EFIS SYSTEM

Evaluating your own avionics needs is not always easy. The Sport SX series provides the low-cost solution that starts big on capability and provides upgrade paths for the future. Its internal high-integrity AHRS provides the perfect balance of simplicity and precision for light aerobatics. The Sport SX is a great option for kitplane builders desiring a lightweight, simple EFIS with unmatched capability and reliability. Purchase EIS engine monitor package for complete graphical engine display.

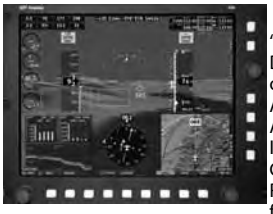
Model	Part No.	Description	Price
S200SX6	11-11768	Single 6.5" EFIS System Package with Upgraded CPU, Internal AHRS & GPS, and all wiring harnesses	$2,600.00
S200SX8	11-11769	Single 8.4" EFIS System Package with Upgraded CPU, Internal AHRS & GPS, and all wiring harnesses	$3,325.00
S100SX6	11-11770	6.5" Multi-Function Display with Upgraded CPU and wiring harnesses. No internal AHRS or GPS (slave unit only)	$1,499.00
S100SX8	11-11771	8.4" Multi-Function Display with Upgraded CPU and wiring harnesses. No internal AHRS or GPS (slave unit only)	$1,689.00
Sport Options- Specify at time of order.			
Model	Part No.	Description	Price
SX-OPT-SYN	11-08484	Synthetic Vision Software	$400.00
SX-OPT-GPSV	11-09548	Vertical Commands autopilot software	$429.00
SX-OPT-GPS	11-09547	Internal VFR WAAS GPS for S100 display (Note: this is included with S200.)	$395.00
SX-OPT-429	11-11772	Remote ARINC 429 module	$4,495.00

GRT AVIONICS HORIZON HX EFIS SYSTEM

" The HX line is a no-compromise solution, including features you might expect to find only in business jet or airline avionics. We go beyond the typical synthetic vision EFIS with terrain optimized to convey a sense of depth perception unmatched by other EFIS systems. Primary Flight Data, Moving Map, and Graphical Engine Data (with optional EIS engine monitor), Airspeed, Sensitive Altimeter, VSI, Attitude, True Airspeed, Ground Speed, Heading, Course, GPS Track, Slip/Skid, Airspeed limits & V-speeds. Full horizontal and vertical autopilot functionality with coupled precision approaches (with IFR GPS/NAV and optional GRT servos); Video PFD overlay for optional FLIR night vision; built-in angle of attack and G-meter; Open compatibility with a variety of avionics, ADS-B receivers, autopilots; Bluetooth communication with GRT Remote App for Android; Precision AHRS does not require GPS or airspeed aiding and is directly wired to Display Units for true redundancy.

"

Model	Part No.	Description	Price
HX6A1-PKG	11-11773	Single 6.5" HX EFIS system package with single AHRS and wiring harnesses	$4,689.00
HX8A1-PKG	11-11774	Single 8.4" HX EFIS system package with single AHRS and wiring harnesses	$7,325.00
HX6A2-PKG	11-11775	Dual 6.5" HX EFIS system package with single AHRS and wiring harnesses	$7,689.00
HX8A2-PKG	11-11776	Dual 8.4" HX EFIS system package with single AHRS and wiring harnesses	$8,200.00
HX Package Options & Accessories			
Model	Part No.	Description	Price
HX6-PKG-ADD	11-11777	Additional 6.5" HX display unit with wiring harness	$2,999.00
HX8-PKG-ADD	11-11778	Additional 8.4" HX display unit with wiring harness	$938.75
AHRS-2-PKG	11-11779	Substitute Single AHRS in any above package with Dual AHRS	$259.95
GPS-EXT-WAAS	11-11780	GPS Module, External VFR WAAS for HX, HXr or Sport	$421.75
GPS-EXT-RAIM	11-09218	GPS Module, External VFR WAAS with RAIM	$742.50



GRT AVIONICS HORIZON HXR EFIS SYSTEM

"HXr offers GRT Avionics' largest screen sizes and a simplifed pilot interface built on the well-proven HX processor. Dedicated remote avionics control panel allows for remote mounting of the radio stack to make room for the large 10.4"" or 12.1"" LCD screen. Primary Flight Data, Moving Map, and Graphical Engine Data (with optional EIS engine monitor), Airspeed, Sensitive Altimeter, VSI, Attitude, True Airspeed, Ground Speed, Heading, Course, GPS Track, Slip/Skid, Airspeed limits & V-speeds. Full horizontal and vertical autopilot functionality with coupled precision approaches (with IFR GPS/NAV and optional GRT servos); Video PFD overlay for optional FLIR night vision; built-in angle of attack and G-meter; Open compatibility with a variety of avionics, ADS-B receivers, autopilots; Bluetooth communication with GRT Remote App for Android; Precision AHRS does not require GPS or airspeed aiding and is directly wired to Display Units for true redundancy.

Model	Part No.	Description	Price
HXR10A1-PKG	11-11781	Single 10.4" HXr EFIS system package with single AHRS and wiring harnesses	$6,685.00
HXR12A1-PKG	11-11782	Single 12.1" HXr EFIS system package with single AHRS and wiring harnesses	$5,859.00
HXR10A2-PKG	11-11783	Dual 10.4" HXr EFIS system package with single AHRS and wiring harnesses	$8,625.00
HXR12A2-PKG	11-11784	Dual 12.1" HX EFIS system package with single AHRS and wiring harnesses	$9,749.00
HXr Package Options & Accessories			
Model	Part No.	Description	Price
HXR10-PKG-ADD	11-11785	Additional 10.4" HXr display unit with wiring harness	$3,375.00
HXR12-PKG-ADD	11-11786	Additional 12.1" HXr display unit with wiring harness	$3,949.75
AHRS-2-PKG	11-11779	Substitute Single AHRS in any above package with Dual AHRS	$259.95
GPS-EXT-WAAS	11-11780	GPS Module, External VFR WAAS for HX, HXr or Sport	$421.75
GPS-EXT-RAIM	11-09218	GPS Module, External VFR WAAS with RAIM	$742.50

AV

GRT AVIONICS AUTOPILOT SERVOS

Digital CNC machined servos add autopilot functionality to any GRT Avionics EFIS System. Heading select, VOR/GPS tracking, ILS and GPS precision approach coupling*, climb/descent to selected altitude using preset IAS or VS*, automatic approach capture. Pitch servo torque sensing provides Trim Up/Trim Down indication. Clutchless design with shearble output arm provides fail-safe mechanical method of freeing flight controls in the unlikely event of servo jam. 12-29V. Standard torque suitable for RV & most 2-place kitplanes. High torque for 4-place aircraft. Specify aircraft type when ordering. *Standard a/p features on HX and HXr. Sport requires Vertical Commands software.

Description	Part No.	Price
Roll servo, standard torque, 1.0 Amp, 2.25 lbs	11-09791	$850.00
Pitch servo, standard torque, 1.0 Amp, 2.25 lbs	11-09792	$900.00
Roll servo, high torque, 2.0 Amp, 2.25 lbs	11-11763	$950.00
Pitch servo, high torque 2.0 Amp, 2.25 lbs	11-11764	$1,000.00
Roll servo wiring harness	11-11766	$26.50
Pitch servo wiring harness	11-11765	$26.50
Servo Mount Kit- Specify type of aircraft.	11-11767	$78.75

GRAND RAPIDS MINI BACKUP EFIS

A small, lightweight, economical VFR EFIS system for LSA and light kitplanes. An affordable, high-quality backup to our larger EFIS systems for IFR operations. A stand-alone autopilot and backup flight instrument all in one. As an IFR backup flight instrument, the Mini-X and Mini-AP can do what no other brand of backup display can do for GRT Horizon and Sport users: Serve as an auxiliary autopilot control head for GRT servos that maintains an independent source of control if the main display unit should fail. Utilize the same pilot interface as the popular Horizon and Sport series, meaning you will not have to remember a different brand's "buttonology" in an emergency. Now taking orders. No deposit required! Shipment of Mini-B anticipated in January 2014, with Mini-X and Mini-AP to follow.

Description	Part No.	Price
GRT Mini-B Backup EFIS	11-12236	$995.00
GRT Mini-X EFIS	11-12237	$1395.00

ADVANCED FLIGHT SYSTEMS - EFIS INTEGRA

ADVANCED FLIGHT SYSTEMS AF3400

AF-4500EF 8.4" AF-3500EF 8.4" AF-3400 6.5"

Can be configured as an EFIS (EF), Engine Monitor (EM), or Combination (EE) or both with the appropriate hardware modules installed. Utilize the Advanced Avionics Bus allowing the pilot and copilot displays to exchange screens. Powered by a state-of-the-art certified Crossbow AHRS engine. LCD display is 50% brighter than any competitor. EFIS — Unlike other systems the horizon display is generated from an internal Crossbow AHRS that is based on certified boards and software. The display features a clear and easy to read airspeed indication with user adjustable color ranges, the altimeter is set using a familiar and convenient adjustment knob. Heading display is generated from a remote mounted magnetometer. The heading can be displayed on a tape across the top or with our new EFIS DG©. Other flight instruments functions include a slip ball and user-configurable g-meter. Aircraft Monitoring and Data Acquisition System — The system continuously monitors and displays not only all aircraft engine data but any of the standard instruments can be eliminated or added to the screen. Mapping — An optional feature, your AF-3400s/3500s can now be configured with onboard mapping. Position is derived from an outboard GPS signal and displayed on the screen. Several display page options can be selected.

Model	Part No.	Description	Price
		Single Screen Systems	
AF-5500	11-11833	AF-5000 EFIS, Basic Map, EMS, AHRS	$5,695.00
AF-5600	11-11835		$6,295.00
AF-5800	11-11836		$6,895.00
		Dual Screen Systems	
AF-5500	11-11837	Dual (2) AF-5000 EFIS, Basic Map, EMS, AHRS	$8,795.00
AF-5600	11-11838		$9,949.00
AF-5800	11-11839		$11,110.00
		EFIS Screens	
AF-5200	11-11787	Display	$2,874.00
AF-5500	11-10556	Display	$3,672.00
AF-5600	11-10557	Display	$4,251.00
AF-5800	11-11788	Display	$4,830.00
		EFIS Screen Options	
AF-Touch	11-11789	Touch Screen Option	$966.00
72010	11-11790	AHRS AFS	$1,449.00
71300	11-11791	Engine Board	$495.00
AF-MAP	11-05963	Advanced Mapping Software	$495.00
20530	11-07181	EFIS AOA Option	$593.00
AF-VPX-Key	11-11792	Vertical Power Interface Software	$272.95
AF-WX-Key	11-11793	Weather Interface Software (Free with 74110)	$247.95
AF-XPDR-Key	11-11794	Transponder Interface Software (Free with 74109)	$247.95
		EFIS Optional Equipment	
71703	11-11795	AF-5000 Back-up Battery	$281.95
73101	11-08324	AF-GPS Moule	$289.95
74120	11-11796	Comm Radio	$1,199.00
74110	11-11797	ADS-B Receiver Module	$772.00
74109	11-11798	Mode S ES Class 1 Transponder	$2,308.00
71400	11-05964	ARINC Adaptor	$495.95
74103	11-08325	XM Weather Module with GPS	$988.00
74125	11-11799	Audio Panel	$1,112.00
		Autopilot System Parts	
80012	11-11801	AF-Pilot Autopilot System (STD Servos)	$2,395.00
		Advanced AOA Systems	
20521	11-11813	AOA Sport System Aluminum Wing	$840.00
20511	11-11823	AOA Pro System Aluminum Wing	$1,445.00

TL ELEKTRONICS EMS INTEGRA TL-6724 / TL-6760

EMS Integra TL-6724 is a multifunctional engine monitoring system integrating all primary engine instruments (Tachometer, Manifold Pressure Indicator, EGT, CHT, Oil and Water Temperature Indicator, Fuel Quantity, Fuel Pressure and Fuel Flow Indicator, Voltmeter, Ammeter, Timer, IAT, OAT etc.). The EMS Integra also integrates propeller control for Constant Speed and Choke Control. EMS Integra is designed for use with all engine makes and models. Wide viewing angles, brilliant colour and direct sunlight readability gives you a new dimension in EMS instrumentation. Proven high-tech components provide you with comfortable, user-friendly control. Its fully ambidextrous controls provide access to a variety of functions- a well-arranged display of genuine analogue instruments, a downloadable measured values history of engine functions by USB port, protection of your engine by constantly monitoring all measured values, direct headphone voice warnings etc.

Description	Part No.	Price
TL EMS Integra TL-6724	10-03524	$1,990.00
TL Integra 9" Remote Display TL-6860	10-05436	$2,370.00
TL Integra 9" Display Mounting Rack TL-6560 TL-6660 TL-6760	10-05437	$63.00

Visit www.aircraftspruce.com for a list of probes, senders, and accessories for the Integra TL-6724.

EFIS INTEGRA TL-6524

EFIS Integra TL-6524 is a multifunctional flight monitoring system integrating all primary flight instruments (Altimeter, Vertical Speed Indicator, Air Speed Indicator, Compass, Accelerometer, Chronometers, Turn & Bank Indicators, Angle Of Attack Indicators, IAT, OAT etc.). The EFIS Integra also combines navigation (HSI, CDI with connection to the popular Garmin SL-30) and 3-D terrain for use worldwide. The wide viewing angles, brilliant colour and direct sunlight readability of the display will give you a new dimension in EFIS instrumentation. Proven, state of the art technology and components will provide you with comfortable, user-friendly control. The Integra controls are fully ambidextrous and provide functions that have previously only been dreamt of - listening to your favourite music after inserting your flash drive into the front panel USB port, 3-D visualization of terrain, integrated 3-axis autopilot, direct voice warnings into your headphones, etc.

Description	Part No.	Price
Integra TL-6524 System	10-03469	$2,390.00
Electronic Flight Information System with 9" Display	10-05433	$3,360.00

ACCESSORIES

Description	Part No.	Price
Mounting Rack for Integra Glass Cockpit 9" Display (TL-6560,TL-6660,TL-6760)	10-05437	$63.00
TL-6524 Backup Battery	10-03470	$150.00
TL-6524 Remote Compass	10-03471	$290.00
TL-6524 Premium Autopilot Key	10-03472	$390.00
TL-6524 Silver Autopilot Key	10-03473	$1,390.00
TL-6524 Gold AutoPilot Key	10-03474	$2,490.00
TL-6524 Servo W/ Magnetic Clutch	10-03475	$1,229.00
TL-6524 Terrain of Europe	10-03476	$190.00
TL-6524 Terrain of Asia	10-03477	$190.00
TL-6524 Terrain of Africa	10-03478	$190.00
TL-6524 Terrain of North America	10-03479	$190.00
TL-6524 Terrain of South America	10-03480	$190.00
TL-6524 Terrain of South Pacific	10-03481	$187.95

EFIS & EMS INTEGRA TL-6624

EFIS & EMS Integra TL-6624 is a multifunctional system that monitors both your flight and engine. TL-6624 integrates all primary flight instruments (Altimeter, Vertical Speed Indicator, Air Speed Indicator, Compass, Accelerometer, Chronometer, Turn-indicator with Inclinometer, Angle of Attack Indicator, internal air temperature, external air temperature, etc.).

The EFIS Integra also includes navigation systems (HSI, CDI with connection to the popular Garmin SL-30) and worldwide 3-D terrain maps. It also integrates all primary engine instruments (RPM, Fuel Flow Pressure Indicator, Exhaust Temperature Indicator, Cylinder Head Temperature Indicator, Oil and Water Temperature Indicator, Fuel Level Indicator, Fuel Pressure Indicator, Voltmeter, Ampere Meter, Timer, Internal Air Temperature Indicator, External Air Temperature Indicator, etc.) In addition the EMS Integra includes Propeller Control for "Constant Speed" and Engine Choke Control. The EMS Integra is designed for use with all engine makes and models. .....

7" Display..... P/N 10-03482.....$3,190.00
9" Display..... P/N 10-05434.....$4,155.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR A LIST OF PROBES, SENDERS, AND ACCESSORIES FOR THE INTEGRA TL-6624.

TL ELEKTRONICS INTEGRA REMOTE DISPLAY TL-6824 / TL-6860

Remote Integra Display TL-6824 is designed for displaying all values measured by TL-6524, TL-6624 and TL-6724. The Remote Integra Display can provide information to the co-pilot or other crew members. The low-profile of the TL-6824 enables installation into seat backs and by providing passengers flight information, it enriches their flight experience. Its wide visual angle, bright colours and readability in direct sunlight ensures a new dimension of information available to the co-pilot and members of the crew. High-tech components used in the Remote Integra Display ensure comfortable user-friendly control. The instrument is suitable for both left-handed and right-handed users plus your favourite music can be played after inserting a flash drive into the front panel USB port.

Description	Model	Part No.	Price
Integra Remote Display with 7" Display	TL-6824	10-03553	$1,390.00
Integra Remote Display with 9" Display	TL-6860	10-05436	$2,370.00
Mounting Rack for Integra Glass Cockpit 9" Display (TL6860)	0024-66	10-05438	$63.00
Backup Battery	6824-01	10-03554	$150.00

AV

MGL V6/V6R VHF AVIATION RADIO TRANSCEIVER

Based on the digital technology intruduced in the V10, the V6 provides the same powerful 6W transmitter and modulation system. Designed for 25Khz spacing with 8.33Khz compatible operation selectable, the dual scan receiver boasts the fastest scanning time which means no loss of reception quality during receive of the standby channel. 100 channel storage and channel operating mode compatible with the V10. Four place, dual circuit intercom system with full isolate. Each intercom microphone input has its own level control and VOGAD noise suppression system. Dual PTT inputs. Black box flight recorder audio output. The intercom outputs are fully stereo with a dedicated stereo music input plus two auxiliary channels for mobile phone and EFIS annunciators. The V6 radio fits a standard 2 1/4" round instrument hole from the rear and provides simple mounting due to captive nuts. Wide Operating voltage range: 12V to 28V DC.

VHF-6 Transceiver .....P/N 11-10464 .....$1,088.00
V6R Remote Transceiver .....P/N 11-12014 .....$1,050.00

MGL AVIONICS V10 VHF AVIATION RADIO TRANSCEIVER

MGL's air band VHF transceiver is the first commercial product of its kind to utilize modern receiver and transmitter technology. All audio processing and much of the receiver and transmitter circuitry is fully digital resulting in an outstanding quality experience unavailable with traditional technology. VHF Airband transceiver based on modern digital signal processing technology with built in multi-mode dual circuit intercom system. Small Size: Fits in a round 3 1/8" instrument hole, but has a mounting depth of only 2.2" + connectors! Light Weight: Approximately 8.8 oz (about 0.5 lb). One of the lightest out there! Powerful: 6 full Watts of transmit power.

Transceiver.....P/N 11-07817 .....$1,065.00

MGL AVIONICS E1 ENGINE MANAGEMENT SYSTEM

A compact 3 1/8" format instrument all that is needed to monitor most smaller aircraft engines from two-stroke ultralight engines to medium sized four strokes such as from Rotax, Continental and Lycoming. Most automotive engine conversions can benefit from the use of the E3 engine monitor. • 66 different engine setup configurations possible • Universal, programmable rev counter (engine RPM) with digital and analog readout, with a programmable high alarm limit • Programmable engine Hobbs meter (password protected) and running timer (flight timer) with automatic flight log • Can monitor up to four programmable thermocouple channels for EGT and CHT probes with a user programmable high alarm limit • A universal temperature sender input with a user programmable low and high alarm limits • A universal pressure sender input with a user programmable low and high alarm limits • Supply voltage measurement up to 30V with a user programmable low and high alarm limits • Maximum recorded values for all measured values are stored in non-volatile memory • High accuracy: Built in thermocouple linearization curves and cold junction compensation • Thermocouple temperature probes can be common K, J or E-type thermocouple probes • Uses standard automotive temperature and pressure senders • Special Rotax 912/914 engine monitor mode utilizing the standard built in Rotax NTC CHT probes • Supports the new Rotax 912/914 4-20mA oil pressure sender.

P/N 11-05578 .....$315.00

MGL AVIONICS XTREME MINI EFIS

The XTreme EFIS is a mini-EFIS unit based on a 4.3" sunlight readable, wide viewing angle, high resolution LCD display. It integrates an SD card reader (for software updates and for flight data recorder), 5 function buttons, a rotary control and a basic GPS navigator (functions available in future firmware release). It can be connected to standard MGL Avionics AHRS sensors and RDAC (engine monitor) boxes. It also integrates a CAN Aerospace compatible communications interface that will be used with future versions of MGL Avionics sensors. Standard RS-232 ports are also available. The XTreme is designed to fit a standard 3 1/8" round instrument hole.

P/N 11-08757 .....$1,150.00

MGL AVIONICS VOYAGER - EFIS/EMS/GPS

8.4" Perfect Fit

The Voyager is IDENTICAL in PRICE and FUNCTION to the Odyssey. The only difference is the size. The Voyager is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Like the Enigma, the Odyssey/Voyager is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable. The Voyager shares all software features with the Enigma, but differs in the following ways: Larger screen (8.4" diagonal). High resolution full VGA active TFT display - one of the best we have found! Faster processor for future functionality. 2 user-configurable rotary knobs and 7 function keys. ARINC 429 interface for communication with traffic alert systems (TIS and ZAON XRX) and for communicating with high-end digital autopilots (GPS Steer and Vertical Nav). CAN (automotive bus) for reading the ECU of automotive engine conversions. Analog +/- 150mA NAV inputs to display CDI/LOC/GS when connected to older analog Nav radios Low... Weight: Under 4 lbs. Current Draw: Only 1.5 Amps @ 12 Volts High... Screen brightness (800-1000 nits). Reliability. Flexibility (any screen layout you want!). Feature count (more instrument options available than most EFISs)

P/N 11-06963 .....$3,900.00

MGL IEFIS CHALLENGER 10.4 INCH TOUCHSCREEN

The iEFIS is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Pressure sensitive, sunlight readable touchscreen that can also be operated using gloves. The pressure sensitive 10.4" touchscreen operates much like a tactile button preventing false activation when touching the screen in turbulent conditions. A simple but highly effective solution. The large amount of flexibility built into the base system allows the adaptation of the iEFIS to almost any mission and aircraft. The iEFIS screens can be completely edited by the user using a simple PC program to create any display the user desires. This makes the system absolutely the most customizable EFIS on the market today! Due to low system cost, the iEFIS is equally suited to light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by multi-engine aircraft with up to 4 engines monitored, and by turbine aircraft and even spacecraft.

P/N 11-12044 .....$2,995.00

MGL XTREME EMS

The XTreme EMS is based on a 4.3" sunlight readable, wide viewing angle, high resolution LCD display. It integrates an SD card reader (for software updates and for engine data recorder), 5 function buttons, a rotary control. It can be connected to standard MGL Avionics RDAC (engine monitor) boxes (required). The XTreme EMS is designed to fit a standard 3 1/8" round instrument hole. The body is located off-center allowing the unit to replace instruments on the right side of a standard 6-pack configuration or any other location that currently occupies two instruments. Due to the light weight and very low mounting depth no complicated mounting brackets or trays are needed. Power use is low and operation from much less than 12V to around 28V is fully supported.....P/N 11-10393 .....$850.00

MGL AVIONICS GENERATION 2 ODYSSEY - EFIS/EMS/GPS

The Odyssey is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. Like the Enigma, the Odyssey is a hardware and software concept that promotes a flexible, powerful EFIS platform together with a software application system that is highly user-modifiable. As an EFIS hardware platform, the Odyssey provides state of the art multi-processor based processing utilizing components chosen for absolute robustness in radiation intense environments such as found at high altitudes. This is coupled with intense low power design methods to further maximize overall system application and reliability. The large amount of flexibility built into the base system allows the adaptation of the Odyssey to almost any mission and aircraft. Due to low system cost, the Odyssey is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even twin-engine aircraft with full dual engine monitoring.....P/N 11-05835 .....$3,900.00

To complete these systems: Select a RDAC engine Unit, Select Sensors, Order Attitude/Heading Sensor (SP-28, SP-4), Select accessories.

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MGL STRATOMASTER EFIS

The Stratomaster is a comprehensive flight, engine and navigation instrument designed for Experimental and Light Sport aircraft. The large amount of flexibility built into the base system allows the adaptation of the Stratomaster to almost any mission and aircraft. Due to low system cost, Stratomaster is equally suited to very light aircraft, gliders and rotorcraft, while providing enough flexibility to be utilized by even twin-engine aircraft with full dual engine monitoring. Please note: Select RDAC model and engine senders for engine functions, and select Attitude/Heading sensors (SP-4 and SP-2) for AHRS funtions.

STRATOMASTER EFIS SYSTEMS			
Model	Description	Part No.	Price
Odyssey	Odyssey 10-.4", including GPS and antenna	11-05835	$3,900.00
Voyager	Voyager 8.4", including GPS and antenna	11-06963	$3,900.00
SENDERS			
Model	Description	Part No.	Price
CHT10	Type-K CHT Thermocouple,10mm spark plug	11-05561	$35.00
CHT12	Type-K CHT Thermocouple, 12mm spark plug	11-05562	$35.00
CHT14	Type-K CHT Thermocouple, 14mm spark plug	11-05563	$35.00
CHT18	Type-K CHT Thermocouple, 18mm spark plug	11-05564	$35.00
CHT Bayo	Type-K CHT Therm. bayonet-style 3/8"-24	11-05565	$35.00
EGT	Type-K EGT Thermocouple, M8 x 1 thread	11-05567	$45.00
EGT Clamp Lg	Type-K EGT Therm. Clamp-Type Lg. (<1.5" dia)	11-05568	$50.00
EGT Clamp Sm	Type-K EGT Therm. Clamp-Type Sm. (>1.5" dia)	11-07842	$50.00
Water temp.	Water Temperature Sender	11-05566	$18.00
Prec. Sender	Precision Water/Oil Temperature Probe	11-05570	$35.00
Oil Temp	Oil Temp, 5/8-18 UNF thread (Lyc/Cont)	11-08070	$49.50
OP-VDO	Oil Pressure 150 PSI, VDO 360-004	11-08066	$45.00
FT-60	Fuel Flow Sensor (Fuel Pump)	10-01196	$129.50
FT-90	Fuel Flow Sensor (Gravity Fed)	10-01224	$259.00
201A-6	Floscan 201A-6 Fuel Flow Sensor 30 GPH "A"	11-08071	$178.95
201B-6	Floscan 201B-6 Fuel Flow Sensor 60 GPH "B"	11-08072	$172.90
201C-6	Floscan 201C-6 Fuel Flow Sensor 80 GPH "C"	11-08073	$210.00
FP-100 UMA	Fuel Pressure 100 PSI (fuel injected engines)	11-08067	$110.00
FP-35 UMA	Fuel Pressure 35 PSI (carbureted engines)	11-08068	$110.00
N1EU07G-M	Fuel Pressure Sender 7 PSI (for MGL System)	10-04939	$125.00
FP 7 PSI UMA	Fuel Pressure 7 PSI (Rotax/Jabiru engines)	11-08337	$125.00
CNV-AT	Serial to Parallel Converter - Ultra/Infinity Sngl	11-05723	$125.00
GT1	Gear Tooth Speed Sensor	11-05725	$85.00
MNEA Cab	NMEA to Airtalk Cable for fuel computer	11-08331	$34.95
Ferrite	EMI Ferrite Bead Intereference Suppresor	11-08064	$6.00
Ferrite - Clip	EMI Ferrite Bead Intereference Suppresor Clip-on	11-08332	$12.50
Batt 12v 1.2Ah	12V 1.2Ah Backup Btty - Sealed Lead-Acid	11-08065	$29.95
Batt 12v 2.5Ah	12V 2.5Ah Backup Btty - Sealed Lead-Acid	11-08065	$29.95
Tach-Slick	UMA Tach Pickup for Slick Mags	11-08334	$99.75
Tach-Bendix	UMA Tach Pickup for Bendix Mags	11-08335	$97.75
SD 1GB	1GB SD Card with North American Databases	11-05569	$50.00
Shunt	50mV Shunt - 50 Amp	11-08330	$20.00
CAP	10,000uF / 25V Electrolytic Capacitor	11-05724	$6.50
Transorb	33V High Speed transorb	11-05727	$6.00

MGL ENIGMA MKIII

The "Enigma MKIII" is based on the iEFIS Discovery and shares its housing and large 7" high resolution screen. It has about the same outside dimensions as the original Enigma, but it is a completely different system.
It will be fully self-contained (no iBox) and features a built-in Attitude Gyro. It provides two RS232 ports and a CAN-interface for connection to RDAC, compass and other devices. It contains a built-in GPS and full pitot/static sensors. The software is based on a simplified version of the iEFIS and is aimed at providing simple installation and simple operation. Only GPS navigation is supported. The Autopilot is included.
The Engima MKIII effectively fits between the XTreme mini EFIS and the iEFIS Discovery.

CALL OR VISIT OUR WEBSITE FOR DETAILS.

MGL MAGNETIC CURRENT MEASUREMENT SENSOR

This sensor can be used to measure DC currents in aircraft power systems in a wide range from less than 4A to as high as 120A depending on installation and configuration. The sensor connects to an EFIS system via spare RDAC inputs. Inputs CHT1,CHT2,oil pressure or oil temperature can be used and these can also be used on a second RDAC unit (consider a low cost RDAC VD as second RDAC if required). G1 and G2 EFIS systems can support up to 4 of these sensors while Enigma can support 2. P/N 11-10422 ..... $49.75

MGL AVIONICS SERVO

MGL Avionics Servo with a generic hardware and pushrod kit. P/N 11-10423 ..... $995.00

MGF SPORT MOUNT PANEL FLUSH

The second generation Sport Adapter allows for easy one-button-removal and provides an even more secure hold than the first generation. Available now on all Sport cases ordered! P/N 13-12429 ..... $149.00

MGL IEFIS EXPLORER

The Explorer EFIS introduces a custom developed touch pressure sensitive LCD screen aimed exclusively at the small aircraft application. With the ability to accurately measure contact force in all conditions, it becomes possible to utilize the user interface advantages of a touch screen even in turbulent flight.
Unlike conventional touch screen technology, MGL's "tap screen" can be used with gloves, is completely unaffected by sunlight and even uses a polarized anti reflective and anti glare film. The tap screen uses only high quality optical glass in its construction and thus has no negative effects on the image quality, even in difficult light conditions. The tap screen is further qualified for zero pressure conditions such as experienced in space and is not affected by sudden, large pressure changes.
Recognizing that some operations can never be fully replaced by a touch screen, the Explorer adds no less than 5 "clickable" rotary controls which assume functions depending on current need plus adds conventional, tactile buttons for quick access to often used functions regardless of what appears on the screen.

Description	Part No.	Price
MGL IEFIS Explorer 8.5" Touchscreen	11-10816	$2,500.00
Accessories		
Description	Part No.	Price
MGL IBOX	11-10826	$1,097.00
MGL IEFIS Explorer Harness Kit	11-10827	$359.90
Ibox Harness for SP-6/SP-7	11-11230	$270.00
Servo Harness for Two Devices	11-11231	$190.00
RDAC XF with Can Bus Harness	11-11232	$90.00
EI FT 60 Fuel Flow Transducer For < 350hp / Fuel Pump	10-01196	$129.50
Westach Temp Probe 5/8-18 THD 1" Tip 4 Lead 399s9 Non Tso	10-01236	$49.50
MGL CHT Bayonet 3/8"-24 TYPE K	11-05565	$35.00
MGL EGT Thermocouple Clamp Small	11-07842	$50.00
VDO Oil Pressure Sender 150PSI	11-08066	$45.00
MGL Tach Pick Up For Slick Mag	11-08334	$99.75
MGL SP-7 Stnd Atttitude Sensor	11-09743	$800.00
MGL SP-6 Magnetometer Sensor	11-09744	$260.00
MGL RDAC XF MAP 12 Thermocouple Channels With Map	11-10676	$345.00

MGL RDAC OPTIONS			
RDAC VD	RDAC VD, 4-Channel Thermocouples	11-05554	$160.00
RDAC VT	RDAC VT, 4-Channel Therm for Turbine Engines	11-05553	$165.00
RDAC-XF	MGL RDAC XF 12 Thermocouple Cannels	11-10674	$315.00
RDAC-XF MAP	MGL RDAC XF 12 Thermocouple Cannels with Map	11-10676	$345.00
RDAC-CAN	MGL RDAC for Rotax 912IS Engine	11-11296	$215.95
IOX	In/Out Extender	11-08336	$209.95
AHRS ATTITUDE / HEADING SENSORS			
SP-5	SP-5 Advanced Attitude Sensor (Horizon)	11-06554	$2,150.00
SP-6	SP-6 Magnetometer Sensor (Compass)	11-09744	$260.00
SP-7	SP-7 Standard Attitude Sensor (Horizon)	11-09743	$800.00
STRATOMASTER 2-1/4" INFINITY SINGLES			
ALT-1	Encoding Altimeter	11-05702	$310.00
ALT-2	Encoding RS232 Altimeter	11-05703	$320.00
ASI-1	Airspeed Indicator	11-05704	$280.00
ASX-1	Encoding Altimeter / Airspeed Indicator	11-05705	$350.00
AV-1	AHRS Display	11-05706	$215.00
BAT-1	Battery Voltage / Current Monitor Inc 50 Amp Shunt	11-05707	$245.00
E3 EMS	Engine Monitoring System	11-06442	$280.00
FF-1	Fuel Computer	11-05713	$265.00
GF-1	G-Force Indicator	11-05715	$240.00
MAP-1	Universal Pressure Indicator	11-05716	$270.00
RTC-2	Aviation Real Time Clock	11-06443	$225.00
RV-1	Universal RPM Indicator	11-05717	$225.00
RV-2	Turbine RPM Indicator	11-05718	$225.00
TC-1	4-Channel Thermocouple Temp	11-05719	$250.00
TP-1	Universal Temp/Press Display	11-05720	$215.00
STRATOMASTER 3-1/8" VELOCITY SINGLES			
ALT-3	Altimeter	11-05572	$325.00
ALT-4	Encoding Altimeter (Gillman Code)	11-05684	$350.00
ASI-3	Airspeed Indicator	11-05573	$300.00
ASX-2	Altimeter / Airspeed Indicator	11-05687	$355.00
AV-2	AHRS Display (Requires SP-2 & SP-4)	11-05690	$235.00
E1-EMS	Engine Monitor System	11-05578	$315.00
FF-3	Fuel Computer	11-05576	$275.00
Flight-2	Primary Flight Display	11-05575	$420.00
GF-2	G-Force Indicator	11-05693	$260.00
MAP-2	Manifold Pressure / RPM	11-05695	$285.00
ROTOR-1	Rotor / Engine Tach	11-07812	$255.00
RTC-1	Aviation Real Time Clock	11-05696	$220.00
RV-3	Universal RPM Indicator	11-05697	$230.00
TC-2	4-Channel Thermocouple Temp	11-05698	$255.00
TC-3	12-Channel Thermocouple Temp	11-05699	$340.00
TP-2	Universal Temp/ Press Display	11-05701	$225.00

LEVIL – CAMERA SYSTEMS

LEVIL PORTABLE ATTITUDE INDICATOR

The iLevil series thrives to satisfy the demand of our customers from both fields, General Aviation and Light Sport Aviation, for an all-in-one lightweight and affordable solution with the same reliability of our industry proven AHRS-G series. The iLevil series was designed from the ground up to be able to integrate multiple platforms into a small and powerful system, saving you space time and money trying to integrate the latest technology in aviation.
Note: Certified General Aviation aircraft are not allowed to modify their pitot static system, therefore model SW is recommended.
The first and only iPad-compatible AD-AHRS that revolutionized the way we fly, the AHRS-G mini. With its incredibly low profile, it made it easy for pilots to have a back-up AI solution in their pockets at all times, even drive Synthetic Vision apps on the iPhone. Technology advances during the past year allowed us to go even smaller and develop the AHRS-G micro, which eventually will be embedded on the iLevil. The G-micro features higher rate of turns than the G-mini, which facilitates Acrobatic-type maneuvers. Unlike other portable AHRS currently in the market, our systems are GPS independent, thus if you loose GPS signal, you can still rely on our AHRS.
Thanks to the FAA efforts to enhance flight safety, monitoring the weather and other airplanes around you is now possible without any subscription. All iLevil devices have a built-in GPS and 978 MHz ADS-B receiver that will capture the following data. Flight Information Services–Broadcast (FIS-B). Traffic Information Services-Broadcast (TIS-B). WiFi , Internal Li-Po battery, USB-DB9 charger.

iLevil with Air Data ..... P/N 11-11310 ..... $1,376.00
iLevil withour Air Data ..... P/N 11-11309 ..... $1,046.00

ILEVIL SPORT PORTABLE AHRS GPS

The Sport combines the latest in GPS and AHRS technology to bring pilots an affordable backup solution that is both Android and iOS compatible. The battery lasts up to 8 hours when fully charged and the solar panels will increase the battery life up to 12 hours on a bright sunny day. The iLevil Sport utilizes WiFi technology to sync as many devices as you want simultaneously! The integrated serial port is designed to relay information from external devices such as the NavWorx ADS600-B ADS-B transceiver, providing certified GPS, Weather and Traffic information to your mobile devices on top of back-up AHRS. Take it from airplane to airplane or leave it installed, the iLevil Sport will provide peace on mind on every flight!

Note: The iLevil Sport does not have an on-board ADS-B reciever.
P/N 11-12462 ..... $772.00

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• 24 Hour Access!
• Fast, Easy Navigation!

GARMIN VIRB CAMERA SYSTEM

VIRB records true HD 1080p video that lets you relive every minute of your adventure in full, high-contrast, undistorted detail. Adjust resolution and filming speed for crisp, dramatic slow motion up to 120fps. And it's all seen through our WideVu lens and processed through 16 megapixel CMOS sensor for the highest quality video, even before you start editing it. Set multiple HD video modes: 1080p@30fps, 960p@48fps, 720p@30/60fps, 848x480@120fps.
1080p HD video recording with 16 megapixel CMOS image processor. 1.4" Chroma display. Rechargeable lithium-ion battery (record up to 3 hours at 1080p). Rugged, durable, waterproof (IPX7*) with an aerodynamic design. 1.4" Chroma Display True High Definition Recording.
P/N 11-12090 ..... $299.99

ACCESSORIES

Virb Tripod Mount ..... P/N 11-12381 ..... $6.75
Pilot USA Virb to Dual GA Headset Recording Adapter
P/N 11-12270 ..... $43.75
Pilot USA Virb Video Adapter USB to Helicopter GA
P/N 11-12271 ..... $58.85

GARMIN VIRB ELITE CAMERA SYSTEM

VIRB records true HD 1080p video that lets you relive every minute of your adventure in full, high-contrast, undistorted detail. Adjust resolution and filming speed for crisp, dramatic slow motion up to 120fps. And it's all seen through our WideVu lens and processed through 16 megapixel CMOS sensor for the highest quality video, even before you start editing it. Set multiple HD video modes: 1080p@30fps, 960p@48fps, 720p@30/60fps, 848x480@120fps.
1080p HD video recording with 16 megapixel CMOS image processor. 1.4" ChromaTM display. Rechargeable lithium-ion battery (record up to 3 hours at 1080p). Rugged, durable, waterproof (IPX71) with an aerodynamic design. Rugged, durable, waterproof (IPX71) with an aerodynamic design.
P/N 11-12089 ..... $399.99

GARMIN VIRB / D2 AVIATOR ACTION PACK

Capture Your Flights in Full HD. Navigate with D2 pilot watch's Nearest and Direct-to buttons. Capture video in stunning HD with VIRB Elite action camera. Control camera wirelessly from D2. Prop filter helps reduce prop blur in videos. Record cockpit audio with headset audio cable. The ultimate in portable wrist-worn GPS flight navigation meets the freedom to record and enjoy all your aerial adventures in crisp HD video with this comprehensive Action Pack that includes the VIRB Elite Aviation Bundle and D2 pilot watch. The compact VIRB Elite camera mounts easily in your aircraft, providing digital image stabilization, a WideVü lens, prop filter, crisp 1.4" Chroma display, and up to 3 hours of recording time at 1080p. Plus, wireless connectivity lets you start/stop recording, capture still shots, view elapsed time and other functions using your Garmin D2 pilot watch as a convenient wireless remote.

Garmin Virb Aviator Action Pack ..... P/N 11-12656 ..... $899.00
Garmin the Virb Elite Aviation Bundle ..... P/N 11-12658 ..... $549.00
Garmin Virb Prop Filter ..... P/N 11-12659 ..... $49.99

AV

GOPRO HERO 3+ BLACK EDITION CAMERA SYSTEM

The HERO3+ Black Edition is 20% smaller and lighter than previous models—making it the most mountable, wearable and versatile GoPro ever. It is wearable and gear mountable, and waterproof to 131'.
Features: • SuperView video mode captures the world's most immersive wide angle perspective • Auto Low Light intelligently adjusts frame rate for stunning low light performance • 33% improved image sharpness and reduced distortion • Faster built-in Wi-Fi for enhanced connectivity to the Wi-Fi Remote (included) and GoPro App • 25% longer battery life • Upgraded audio performance.
P/N 11-12137 ..... $399.99

GOPRO HERO 3+ SILVER EDITION CAMERA SYSTEM

The HERO3+ Silver Edition is 15% smaller and lighter than previous models—making it the most mountable, wearable and versatile Silver Edition GoPro yet.
Features: • 2x faster image processor enables 1080p60 and 720p120 fps video • Enhanced low light performance • Improved image sharpness and reduced distortion • Faster built-in Wi-Fi for enhanced connectivity to the Wi-Fi Remote (sold separately) and GoPro App • 25% longer battery life • Upgraded audio performance. P/N 11-12136 ..... $299.99

GOPRO ACCESSORIE

Description	Part No.	Price
Hero 3 WIFI Remote	11-11395	$79.99
Hero 3 Frame Mount	11-11396	$39.99
Hero 3 Chest Mount Harness	11-11397	$39.99
Hero 3 Handlebar Mount	11-11398	$19.99
Hero 3 Roll Bar Mount	11-11400	$29.99
Hero 3 WIFI Remote Charging Cable	11-11403	$19.99
Hero 3 WiFI Remote Mounting Kit	11-11404	$19.99
Hero 3 USB to 3.5mm Audio Adapter	11-11405	$19.99
Hero 3 Cigarette Lighter Adapter	11-11406	$29.99
Hero 3 Wall Charger	11-11407	$39.99
Hero 3 Rechargeable Battery	11-11408	$19.99
Hero 3/Plus Slim Skeleton Housing	11-12207	$49.99
Hero 3/Plus Standard Housing	11-12146	$49.99
Hero 3 Plus LCD Touch BacPac	11-12139	$79.99
Hero 3 Plus Battery BacPac	11-12138	$49.99
Hero 3/Plus Protective Lens and Cover	11-12148	$19.99
Flat and Curved Adhesice Mounts 6pc	11-11413	$19.99
Grab Bag of Mounts for quick-release cameras	11-11964	$17.95
Helmet Front Mount	11-12140	$12.99
Junior Chest Mount Harness	11-12141	$39.99
Suction Cup Mount	11-12143	$39.99
Tripod Mount	11-12144	$9.99
"Jaws" Flex Clamp Mount	11-12145	$49.99
Gear Box 2	11-11580	$29.99
Gear Box 3	11-11583	$34.99
Gear Box 5	11-11584	$39.99
Gear Box 7	11-11585	$39.85
POV20 LT Black Soft Case	11-11572	$34.99
POV20 Black Incredibly Strong Case	11-11573	$44.99
POV20 White Incredibly Strong Case	11-11574	$44.99
POV20 Black Deluxe Edition Case	11-11575	$54.99
POV20 White Deluxe Edition Case	11-11576	$54.99
POV40 Case With Hand Strap	11-12222	$66.75
POV60 Black Multi-Camera Case	11-11578	$159.99
POV Black PAK Video Lighting System	11-11579	$399.99
Pilot USA Gopro Hero 3 to Dual GA Headset Recording Adapter	11-11565	$43.75
Nflightcam Prop Blur Filter Lens For Gopro	11-12333	$49.95
Nflightcam Hero 3 Plus Propeller Filter	11-12335	$59.95
Nflightcam Gopro Billet Mount	11-12336	$99.95
Nflightcam Gopro Audio Cables	11-12337	$49.95
Nflightcam Suction Cup Mount	11-12339	$29.95
Floaty Backdoor	11-12208	$19.99
Dual Battery Charger	11-12209	$29.99
Knob and Nut Kit	11-11830	$15.50
Standard Housing Lens Replacement Kit	11-12147	$19.99

MOTOCAM 1080P SINGLE CAMERA WITH QUICK RELEASE CABLE & GPS

1080p Single camera with quick release audio cable. Video - 5 Megapixel Sensor, H.264 Codec, .mov file type. GPS - Built-in GPS receiver, "Time to first fix" using AssistNow™ Service Audio Standard - GA audio headset interface (6ft cable), AAC Audio Compression Lens - Wide Angle Lens: 135°: High Definition, 110°: Standard Definition, Dual alignment lasers Memory - Removable MicroSD, Capacity: 16GB (2GB included), Average Record Time HD >> 30 min / GB, SD >> 60 min / GB Body - Water Resistant Aluminum Shell, TRail™ Mount System
Battery & Power - Removable Lithium-Ion Battery, Record Time: Up to 2 hours, sold separately) P/N 11-09359 ..... $648.95

Motocam 1080P 4 Camera System with Quick Release Cable & GPS- 4 Cameras with a 4 Channel Control Box, 4 Camera Cables, and 4 Mounts. P/N 11-09363 ..... $2,283.00

MOTOCAM 360 SINGLE CAMERA WITH QUICK RELEASE CABLE

1080p Single camera with quick release audio cable. Video - 5 Megapixel Sensor, H.264 Codec, .mov file type Audio Standard - GA audio headset interface (6ft cable), AAC Audio Compression Lens - Wide Angle Lens: 135°: High Definition, 110°: Standard Definition, Dual alignment lasers Memory - Removable MicroSD, Capacity: 16GB (2GB included), Average Record Time HD >> 30 min / GB, SD >> 60 min / GB Body - Water Resistant Aluminum Shell, TRail™ Mount System Battery & Power - Removable Lithium-Ion Battery, Record Time: Up to 2 hours, Charge via USB to computer or chargers (sold separately), Charge time: 3 hours (average) P/N 11-09357 ..... $598.95

Motocam 360 4 Camera System with Quick Release Cable - 4 Cameras with a 4 Channel Control Box, 4 Camera Cables, and 4 Mounts.
P/N 11-09361 ..... $2,199.99

MOTOCAM 1080P SINGLE CAMERA WITH QUICK RELEASE CABLE & LCD

1080P Single camera with quick release audio cable and integrated LCD. Features: Sensor type: CMOS, Water Resistance: 0.5m, Video resolution: 1080p, 720p & WVGA, Video format: H.264, File format: .MOV, Frames per second: 30 FPS, Video format: 16:9, Lens Rotation: 300°, Recording Angles: 127° in 1080p, 170° in 720p & WVGA, White balance: Auto, Exposure: Auto / Manual (advanced users), Zoom: Digital x4 (in 720p & WVGA mode), Standard GA audio headset input (6ft cable), AV Output: HDTV out (cable included), Battery: 1110mAh rechargeable lithium-ion. Power-Save option saves batteries by powering down the screen, Built-in memory: 32 MB SDHC memory capacity: Supports memory cards up to 32 GB Photo resolution: 5 Megapixel LCD screen: 1.5" colour TFT Lens focal range: 0.5m to infinity. P/N 11-09358 ..... $599.95

Motocam 1080P Dual Camera System with Quick Release Cable & LCD- 2 Cameras with a 4 Channel Control Box, Camera Cables, and Mounts.
P/N 11-09616 ..... $1,499.00

MOTOCAM 1080P 4 CAMERA W/ QUICK RELEASE CABLE & LCD - 1080p 4 camera with quick release audio cable and integrated LCD. Camera Mounts: Choose flat Mount (4), Ubolt mount(4), or strap mount(4). ..... P/N 11-09362 ..... $2,299.95
Wireless ..... P/N 11-10003 ..... $2,499.00

NFLIGHT GOPRO HERO 3 / 3+ COCKPIT KIT

So you have been capturing everything in your life with a GoPro but you are sick of annoying propellers and nothing but engine noise in your flying videos? We have the solution. The Nflightcam GoPro Cockpit kit allows you to turn your GoPro Hero3 or Hero3+ into an amazing cockpit camera and audio recording device.
P/N 11-12369 ..... $99.99

AV

MOTOCAM CAMERA SYSTEMS

4 CAMERA SHOCKBOX DIGITAL VIDEO RECORDING SYSTEM

Package Contents:
* Sony 550 CCD color camera (4) * 12 foot camera cables (4) * RAM ball and socket camera mounts (4 set) * Stereo audio communication cable (1) * 4Gb SD memory card (1) * Video Editing Software (1) * TV & PC video transfer cables (2) * Charger(1)

PN 11-07112.....$1,799.95

BLIND SPOT ELIMINATOR

Package Contents:
* 4" Color LCD Monitor (1) * 12Volt Input Wire Harness (1) * Sony 550 CCD Color Camera (1) * RAM ball and socket camera mount (2) * Note: Video recording can be added separately.

P/N 11-08138..... $749.95

VIDEO DATA SYNCH BOX

Package Contents: * Data Acquisition Box (1) * Wire harness (1) * GPS Receiver Puck (1) -Air Speed -Altitude -Heading -Location Option: - Garmin Data Port Cable - GPS receive puck. 12-32v input. Rugged aluminum housing construction. Simple 3 button design. Automatic real-time GPS data overlay on to composite video stream. Less than 1amp power draw. RCA style video input/output Note: The video data synch box can be added to any standard composite video recording system. P/N 11-08137..... $725.00

MOTOCAM HARDWIRE OPTION

MotoCam 360 step down voltage regulator connector (In-line). This regulator will reduce the aircraft voltage from 24v down to 12v to supply any MotoCam 360 on-board video recording system constant power for unlimited video recording run-time. P/N 11-08342.....$72.50

MOTOCAM ACCESSORIES

MOTOCAM 16GB MICRO SD CARD - MotoCam 16GB Micro SD Card w/ Adapter P/N 11-09366..... $54.25

MOTOCAM NC360 5HOUR BATTERY - 5 Hour Li Ion DVR Battery (2200mAh) for extended video recording (2005 - 2008 DVR). 3.6V

P/N 11-09434..... $49.95

DEOHAKO PROPSHOT SMARTY MOUNT WITH LENS

Deohako PropShot Lens - Filtered lens to remove propeller distortion from in-flight videos and photos. Adjustable Lens Positioning -compatible with most smart phones. Universal Smartphone Grip. Rotating Ball Head - Position smartphone at any angle to capture in amazing flight footage. Quick Release, Strong, Wide, 4" Suction base.

P/N 13-14857 ..... $78.95

STRUT CAMERA MOUNT FOR CESSNA

The W3 Camera Mount by Cloudbase Engineering has been specifically designed to mount industry standard action cameras to the wingstrut on General Aviation aircraft. In addition to aircraft, The W3 Mount can also be reconfigured to attach to tubular structures between 1.13" and 2.80" in diameter. Not FAA Approved.

W3 Cessna Strut Camera Mount with 7" long strap: 140a 150 152 170 172 175 & Glasair Sportsman P/N 13-14981 .....$119.75
W3 Cessna Strut Camera Mount with 7.5" long strap: 180 &182
P/N 13-14982 .....$119.75
W3 Cessna Strut Camera Mount with 9.25" long strap: 185 205 206 210 P/N 13-14983 .....$119.75

WINGIT MOUNT FOR CESSNAS

WingItMounts™ have take photography to a higher level by mounting cameras to wing strut and taking unique and exciting views of flights. Holding up to three Gopro cameras, you will be able to capture your flights form unique and exciting views all at the same time. Milled from Aircraft grade aluminum all WingItMounts™ are made to the highest quality materials. No screws or fasteners are needed to attached the WingItMounts™ WIMGP-01 to your airplane. Applications: Cessna: C-150, C-152, C-170, C-172, C-180 or C-182. Camera not included. P/N 11-11472..... $119.95

REMOTE CAMERA SYSTEM

• Mounts a traditional camcorder (i.e. Sony) • 360 degrees of rotation • 50 degrees of tilting ability • Optional stick grip with built in hat switch • Remote switch control • Weight - 7lbs • Dash mounted LCD screed to see what the camera is seeing • Vibration dampening built into mounting bracket.

Description	Part No.	Price
Basic Kit - Includes camera mount system with remote switch	11-04318	$799.00
Deluxe Kit - Includes camera mount system with remote switch and LCD screen	11-04319	$1,038.00
Super Deluxe Kit - Includes camera mount system, built in grip switch, & LCD screen	11-04320	$1,245.00

ACCULOCK BLACK BOX CAMERA PLANE/CAR

Features of the Acculock Black Box Camera include 2CH video recording, GPS module (speed & location info), exclusive viewer playback, indoor infrared recording, and an online map (Google). Great for planes and cars

P/N 11-10444 .....$499.00

DATATOYS AV-HD PRO AIRCRAFT CAMERA SYSTEM

The AV-HD Pro is our next generation cockpit camera; offering a smaller camera size, longer cable, higher resolution image sensor, and built-in GPS.

Features:
- Full l080p HD Recording
- Smallest Camera Head on the Market
- 2" ChromaLCD
- Propeller Filtering
- Headset Audio Recording
- GPS Overlay & 3D Flight Path Recording
- 170 Degree Field of View with 6X Zoom
- Four Mounting Options
- Live View & Playback via HDMI

P/N 11-12268.....$320.00

FLYVIE PRO RECORDER

The Flight Recorder Pro is a patented and portable flight recorder. The unit captures and records high quality video from two small cameras, as well as GPS data and audio from internal and external communications in the cockpit. Captured imagery includes the pilot's view and the instrument panel as well as the pilot's manipulation of the flight controls. The data is saved to a small personal memory card which can then be downloaded and reviewed, analyzed and tagged over the Internet.
Package includes: Netbook, 2 - Webcams, GPS cable and accessories.
Features: Video record two views - both instrument panel and external horizon views, Audio record the cockpit and ATC communication, View your flight recording with GPS track overlaid on Google Earth, Share tagged segments of your flight with others - anytime, anywhere

P/N 10-04513 .....$1,795.00

QSTARZ GPS FLIGHT RECORDER

The Best Economical and Efficiency Solution Applied by GPS BT-Q1000XT adopts the latest GPS chip-set MTK II bringing you the highest performance and longest battery life for your special commercial requirements. With it reliable and durable design, BT-Q1000XT is definitely the best choice to improve your bottom line: lower the cost and improve efficiency. Make your business having more bargaining power and competitive advantages over your competitors. Powerful Software Integrated with Google Map

P/N 11-08343.....$110.00

AV

ADVANCED AIRCRAFT ELECTRONICS HIGH GAIN AIRCRAFT ANTENNA SYSTEMS

Here is a new series of aircraft antennas specifically designed to be used without a ground plane. This means that composite aircraft and fabric covered aircraft can now have their antennas mounted totally within the structure. These antennas are designed using the latest engineering technology. Laboratory measurements show them to have better electrical characteristics than currently available products. The unanimous reports from pilots who have been using them confirm that they out perform everything now available on the market. One antenna model works for communication, navigation, and for ELT (Three antennas in the aircraft, but all the same design), and this design is tolerant to installation errors. They will work in metal airframes when a plastic or fiberglass wing tip or similar plastic component is available to provide the mounting structure. The VHF antennas, 5T and 5I, differ only in the location of the BNC connection. The 5T is configured to allow the coax cable to be routed flat along the mounting surface of the airframe. This antenna model would be appropriate for a composite aircraft where the antenna would be mounted in the fuselage or fin and the coax would be close to the skin and be attached periodically for strain relief. In either case, the antenna can be used as a retrofit on in service aircraft or in new installations. The 5I series has the BNC connection positioned so that the coax cable would route out and away from the antenna mounting surface. This configuration is offered for antenna installations such as wing tips of fabric aircraft. If the antenna is mounted on the inside of the tip, the coax route is directly inward toward the wing root and the BNC connection is located near the spar to provide support for the cable. Both antennas are identical in their electrical performance.

Features: Inside mounting. Use with composite skins. Use with fabric covered airframes. Glue or bond to the airframe. Light weight. Wide service temperature, No ground plane corrosion, Mount anywhere inside, Maximum range with low VSWR. Model VHF series designed for comm or nav or ELT. Guaranteed against failure for the life of the airframe. Adapts to existing airframes or to in process construction.

Model 5I (straight BNC connector) NAV/COM Antenna ..... P/N 11-04261 ..... $118.95
Model 5T (right angle BNC connector) NAV/COMM Antenna ..... P/N 11-04262 ..... $118.95
Model L2 Transponder Antenna ..... P/N 11-04212 ..... $98.95

COMANT GPS ANTENNAS

GPS antenna kits from Comant enable you to install a low profile aerodynamic GPS antenna to the exterior of your aircraft. These antennas are all FAA approved under TSO C129, provide superior GPS signal acquisition, and are resistant to ice build-up in flight. All kits come complete with 10' of coax cable. Call with Comant Part No. for pricing on the Comant C1401, C1405, CI-406, OR CI4510 series antenna you require.

CI 401 ANTENNAS

These antennas are designed for aircraft up to 600 knots and feature a rectangular footprint. Available in active or passive models. Height: 0.75". 50 ohms.

CI 401 ACTIVE ANTENNAS		
APPLICATION	P/N	PRICE
Magellan w/detachable antennas except 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Skyforce, and panel GPS requiring 26 dB gain		
Antenna Only	CI-401-220	$543.75
CI 401 Passive Antennas (limited to 10' run of RG142 or 6' of RG58)		
Magellan w/detachable antennas incl. 5000A, Garmin 55, 89, 90, 95, 100, 150, 155, 165, 250, Micrologic Super Sport & all other GPS receivers requiring a passive antenna.		

GARMIN GA 25 GPS ANTENNA

The GA 25 BNC low profile remote GPS antenna integrates a magnetic mount, 9.5 ft (2.9 m) cable and a BNC connector.

P/N 11-05172 ..... $23.50

GARMIN GXM USB EXTENSION CABLE

GXM USB extension cable 010-10617-02 for GXM 30 and GXM 40 Satellite WX antennas.

P/N 11-06189 ..... $16.95

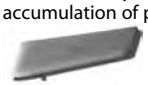
BENDIX KING GPS ANTENNA KA92

The KA 92 antenna is a compact, aerodynamically-styled "patch" antenna that mounts on top of the aircraft. Weight: 0.30 lbs. (0.14 kg) Width: 2.70 in. (6.86 cm) Height: 0.70 in. (1.78 cm) Length: 4.30 in. (10.92 cm)

Antenna ..... P/N 11-04036 ..... $774.00
Installation Kit ..... P/N 11-02581 ..... $116.95

COMANT MARKER BEACON ANTENNAS

CI-102 MARKER BEACON - Frequency 75 MHz. For use with the modern, high sensitivity marker beacon receivers. Featuring 4-hole internal mounting for simple installation. Enclosed in an injection molded radome which is impervious to the tough environments typical of the underside of an aircraft. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-17931 ..... $139.95



CI-118 MARKER BEACON - Frequency 75 MHz. Designed specifically for high-performance aircraft applications. Features aerodynamic design in a lightweight package. Antenna is a low profile blade-type encased in a molded polyurethane shell. Skydrol and rain erosion resistant.

P/N 11-17932 ..... $358.00

COMANT MARKER BEACON (CI-118-1) - Frequency • 75 MHz. Low-drag, lower profile alternative to the popular CI 102 "boat style" marker beacon antenna. Approved for medium to high performance single, turbo-prop or jet aircraft and provides simple external mounting. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static.

P/N 11-06847 ..... $565.00

COMANT MARKER BEACON (CI-118-9) - Frequency 75 MHz. Identical to the CI 118 except the mounting configuration allows for "drop-in" replacement to the Honeywell Bendix-King KA 26 Marker Beacon. This Comant design has been tested to the tough DO-160D environmental standards. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06989 ..... $522.00

COMANT MARKER BEACON (CI-118-10) - Frequency 75 MHz. This Comant marker beacon is identical to the CI 118 except with a 4-hole through mount configuration. This model has been tested to the tough DO-160D environmental standards. Skydrol and rain erosion resistant. DC grounded to minimize accumulation of precipitation static. P/N 11-06848 ..... $542.00

COMANT MARKER BEACON (CI-164) - Frequency • 75 MHz. Lightweight flush mount provides for dualmarker beacon signal outputsatthe antenna, eliminating theneed fora separate marker beacon splitter. Antenna is housed in a aluminum enclosure with a glass laminate cover. Internal components are potted in place for mechanical integrity. The CI 164 is designed for curved "crown" surface mounting as is currently used on the Cessna Citation I and II. P/N 11-06850 ..... $1,389.00

COMANT MARKER BEACON (CI-165) - Frequency • 75 MHz. Lightweight flush mount antenna, provides for dual marker beacon signal outputs at the antenna, eliminating the need for a separate marker beacon splitter. Antenna is housed in a aluminum enclosure with a glass laminate cover. Internal components are potted in place for mechanical integrity. The CI 164 is designed for curved "crown" surface mounting as is currently used on the Cessna Citation I and II. P/N 11-06851 ..... $1,409.00

COMANT ANTENNAS

COMANT DME/TRANSPONDER ANTENNAS

COMANT DME/TRANSPONDER (CI 100 SERIES) - All Metal Blade DME/Transponder antenna designed and developed for Mach 2 military aircraft. Design is unique in the blade and mounting base are die-cast as one piece with no dielectric material in the the airstream. Standard six-hole mounting configuration. See Order Options for available connectors

ORDER OPTIONS			
Connector	Model	Part No.	Price
HN	CI 100-4	11-06815	$371.00

CI-101 TRANSPONDER ANTENNA – Frequencies Covered 1030-1090 MHz. Transponder antenna with top loaded stub monopole. Contact points are made from beryllium copper. Mounts through a single 0.600" diameter mounting hole.
P/N 11-17970 ..... $144.95

CI-105 TRANSPONDER/DME ANTENNA – A very broadband and rugged antenna which is encased in glass reinforced molded shell. Rated to 400 kts. TAS. Height. 3.25"; Wt. 0.2 lb. Does not include BNC or hardware. P/N 11-17965..... $143.85

COMANT DME/TRANSPONDER (CI-105-3) - Frequencies Covered 75 MHz. Antenna configuration specifically designed for external applications using a three hole flange mounting. BNC female connector. P/N 11-06810.....$330.00

COMANT DME/XPDR (CI -105-6 & 105-7) - Frequency • 960-1220 MHz. Comant CI 105-3 DME/Transponder antenna. Ant signed for external applications using a three hole flange mounting. BNC female connector.
CI 105-6 connector - BNC.....P/N 11-06811 .....$296.95
CI 105-7 connector - C .....P/N 11-06817 .....$368.00

COMANT DME/TRANSPONDER (CI-105-9) - Frequency • 960-1220 MHz. Antenna assembly encased in a glass reinforced polyester molded shell. Comes standard with a 6" extension coax cable and BNC connector. This model offers standard two stud mounting, where the studs are extended to 1 inch in length. P/N 11-06818.....$243.95

COMANT DME/ TRANSPONDER (CI -105-16) - Frequency • 960-1220 MHz. Was designed specifically for the Honeywell Bendix- King™ KA60. This unit offers the extended length two-stud mounting found on the KA60. Tested to the tougher DO-160D environmental requirements, this antenna offers the best in ruggedness and performance.
P/N 11-06819.....$147.95

COMANT DME/XPDR (CI-110-40-30) - Frequency • 960-1220 MHz &1030-1090 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. With a popular four hole mount and connector with open path to ground, this antenna is ideally suited for those aircraft equipped with standard and Mode S transponders. Tough one piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06820.....$315.00

COMANT DME/ TRANSPONDER (CI-110-41-30) - Frequencies Covered 960 -1220 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. With a popular four hole mount and connector with short path to ground, this antenna is ideally suited for those aircraft equipped with standard and Mode S transponders. Tough one-piece construction provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06821 .....$322.00

COMANT DME/XPDR (CI-110-60-30) - Frequency • 960-1220 MHz & 1030-1090 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. Six hole mount and connector with open path to ground. Suited for aircraft equipped with standard and Mode S transponders. Provides 175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06822.....$322.00

COMANT DME/XPDR (CI-110-61-30) - Frequency • 960 -1220 MHz. All metal, low profile antenna is designed for business jet and commercial high speed aircraft. Six hole mount and connector with short path to ground. Suited for those aircraft equipped with standard and Mode S transponders. Tough one-piece construction provides175 lbs. side load capability. Moisture failure is prevented with completely sealed construction.
P/N 11-06823.....$336.00

COMANT DME/ TRANSPONDER (CI-305) - Frequency • 960-1220. Miniature high speed DME/Transponder - one of the smallest DME/Transponder antennas available from Comant. Less than 2.75 inches high, featuring a very low-drag frontal profile. Strong, lightweight and easy to mount using four external mounting holes through base.
P/N 11-06824.....$216.95

COMANT FM BAND & AM/FM ANTENNAS

COMANT AM/ FM RECIEVER (CI-222) - Frequency 88-108 MHz 550-1600 KHz. Offers a unique low profile design using standard 4 hole mounting used on many VHF type antennas. Bent whip configuration is ideally suited for underbelly and helicopter installations.
P/N 11-00412.....$259.00

COMANT DATALINK & SAT-

COMANT FIS/DATA LINK (CI 248-180) - 136.450 - 136.475 MHz. Assures positive FIS performance with the new CI 248-180 FIS Data Link antenna. Designed specifically to bring NEXRAD, METAR, and TAF frequencies to the cockpit.
P/N 11-07077.....$283.95

COMANT IRIDIUM (CI-490-1) - Dual-band passive antenna operates at Iridium™ frequencies, with continuous transmit and receive coverage from 1616 to 1626.5 MHz. Can also operate separately as a passive GPS antenna. Iridium™ delivers essential communications services to and from areas where terrestrial communication are not available. P/N 11-07078.....$534.00

AV

COMANT RADIOPHONE / DME ANTENNAS

COMANT UHF (CI-177-20) - 450-470 MHz. A rugged monopole antenna particularly wellsuited to the harsh environments experienced on the underside of an aircraft. Features standard4-hole mounting, diecast metal base and radiator encased in glass laminate housing. P/N 11-06836.....$586.00

COMANT UHF (CI-200) - 450-470 MHz. Rugged monopole antenna particularly well-suited to the harsh environments experienced on the underside of an aircraft. Features a very compact 3-hole mounted die-cast aluminum base with the radiator encased in a glass laminate housing.
P/N 11-06837.....$386.00

COMANT UHF (CI-271) - 403-512 MHz. Stub antenna designed to withstand the harsh environments associated with the underside of an aircraft. Antenna radiator is mechanicly captivated and is sealed against leakage. All exposed metal surfaces are nickel-plated for corrosion resistance and long service. Mounts through a single 0.600" hole. BNC connector is standard. P/N 11-06838.....$209.95

COMANT UHF (CI-273)- -403-512 MHz. Stub antenna designed to withstand the harsh environments associated with the underside of an aircraft. Antenna radiator is mechanicly captivated and is sealed against leakage. All exposed metal surfaces are nickel-plated for corrosion resistance and long service. Mounts through a single 0.600" hole. BNC connector is standard.
P/N 11-06839.....$191.75

COMANT UHF (CI-275) - Frequency 406-512 MHz. Wide band UHF antenna designed for high-performance aircraft over the full frequency range of 406-512 MHz. Low profile, blade-type antenna is encased in a low drag, low weight molded body to ensure high reliability. The CI 275 comes standard with a BNC connector. Other connectors available. See order option chart.

Connector	Model	Part No.	Price
BNC	CI 275	11-06840	$562.00
TNC	CI 275-2	11-06841	$627.00
N	CI 275-5	11-06842	$654.00

COMANT UHF (CI-285) - Frequency • 400-960 MHz UHF blade antenna design for high performance aircraft over the full range of 400-960 MHz. Features vertically polarized/ omni-directional pattern, extremely wide band/high efficiency electrical performance. DC grounding for lightning protection, 6 hole mounting. P/N 11-06843.....$749.00

COMANT UHF (CI-306) - Frequency • 800-870 MHz. Stub-type antenna tuned for the 800- 870 MHz radio telephone band. Intended for use on low-flying aircraft and helicopters. CI 306 available with BNC connector and mounts through a single 0.600" inch diameter hole. P/N 11-06844.....$315.00

COMANT CI 310-20 RADIOPHONE - Frequencies Covered 806-960 & 1030-1090 MHz L Band / UHF blade antenna designed for high performance aircraft. Features vertical/ omnidirectional pattern, wide band/high efficiency electrical performance and DC grounding for lightning protection.
P/N 11-06845.....$398.00

COMANT CI 310-22 RADIOPHONE ANTENNA- Frequencies Covered 806-960 & 1030-1090 MHz L Band / UHF blade antenna designed for high performance aircraft. Low profile, light weight antenna and is packaged in a molded body with metal mounting base to ensure stable environmental performance and resistance to vibration, rain erosion and cleaning solvents. Features vertical/omnidirectional pattern, wide band/high efficiency electrical performance and DC grounding for lightning protection.
P/N 11-06846.....$418.00

COMANT RADIOPHONE / DME ANTENNAS

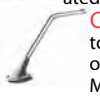
COMANT VHF COMMUNICATION (CI-121) - Frequencies Covered 118-137 MHz. Similar to the CI 109, the CI 121 is smaller in diameter and lighter at only 0.5 pounds. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS.
P/N 11-17921 .....$173.75

COMANT VHF COMMUNICATIONS (CI-122) - Frequencies Covered 118-137 MHz. Designed specifically for mounting to the underside of an aircraft providing excellent radiation coverage for air-to-ground VHF communications. Bent configuration makes it ideally suited for helicopters and low wing aircraft. Upgraded to the new RTCA DO-160D environmental requirements and offers 118 to 137 MHz frequency associated with the DO-186A MOPS. P/N 11-17922 .....$199.85

COMANT VHF COMM (CI-211) - Frequencies Covered 118-137 MHz. For large twins and medium jet aircraft. Only 8.25 inches high. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to137 MHz frequency associated with DO-186A MOPS.
P/N 11-07082 .....$684.00

COMANT VHF COMMUNICATIONS (CI-291) - Frequencies Covered 118-137 MHz Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO 186A MOPS. P/N 11-17991 .....$218.95

COMANT VHF COMMUNICATIONS (CI-292-1 - Frequencies Covered 118-137 MHz. Designed specifically for top mounting on an aircraft. Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO-186A MOPS. P/N 11-05093 .....$231.95



COMANT VHF COMMUNICATIONS (CI-292-2) - Upgraded to the new RTCA DO-160D environmental requirements and offers the 118 to 137 MHz frequency associated with DO 186A MOPS. P/N 11-29202 .....$247.95

COMANT VHF COMMUNICATION (CI-248-5 - Frequencies Covered 118-137 MHz. Developed for Cessna 182 and 182T aircraft. The only VHF antenna with a built-in notch filter, that allows installation in close proximity to GPS antennas without co-sight interference. P/N 11-05585 .....$330.00

COMANT VHF COMMUNICATIONS (CI-108) - Frequencies Covered 450-470 MHz Suitable for either top or bottom mounting. Upgraded to the RTCA DO-160D environmental requirements with DO-186A MOPS. Optional leading edge protection - CI 108-L.
CI-108..... P/N 11-07079 .....$862.00
CI-108L ..... P/N 11-07080 .....$1,337.00

COMANT VOR / LOC / GS ANTENNAS

COMANT VOR/ GS (CI-120G-S) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Antenna system qualified for use on single engine, twin, jet, and helicopter aircraft. Provides glideslope reception capability. Complete set includes a pair (2) of blades, each with single BNC connector output, two coax interconnect cables and a signal combiner output providing for a single cable run to the avionics installation. P/N 11-06801 .....$1,180.00

COMANT VOR/LOC/GS (CI-120-200G/S) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Antenna system qualified for use on single engine, twin, jet, and helicopter aircraft. Provides glideslope reception capability. Complete set includes a pair (2) of blades, each with single BNC connector output, two coax interconnect cables.Dual output signal combiner providing for separate RF cable runs to the avionics installation for NAV1 and NAV 2 receivers, is included. P/N 11-06802 .....$1,238.00
CI-120-200G/S-L - Blades have leading edge protection and come with rubber gasket enabling mounting on curved vertical stabilizers.
P/N 11-06803 .....$1,323.00

COMANT VOR/LOC/GS (CI-120-400) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Designed for the Cessna 182 Series. Complete kit includes a pair (2) of blades, each with a single BNC output, and two coax interconnect cables. Single BNC output phasing combiner providing for a single RF cable run to the avionics installation. P/N 11-06804 .....$1,170.00

COMANT VOR/LOC/GS (CI-157P) - Frequency 108-118 MHz (VOR/LOC) 329-335 MHz (Glide Slope) "V" dipole VOR/ Glide Slope antenna with fixed elements designed specifically for compatibility with the Piper Aircraft mounting. Radiating elements are not removable. Not approved for helicopter installations.
P/N 11-15700 .....$288.95

COMANT VOR/LOC/GS (CI-185C) -Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) "V" Dipole VOR/LOC/ GS antenna with detachable elements mounts on top of the vertical fin stabilizer for most single engine general aviation aircraft. RF design similar to the CI 157P. Integral ferrite balun provides for higher radiation efficiency. Not approved for helicopter installations. Consult your FBO or installation shop for best application information.
P/N -11-17923.....$297.50

COMANT VOR/LOC/GS (CI-158C-2) - Frequency • 108-118 MHz (VOR/LOC) 329-335 MHz (GS) Detachable elements mounts on top of the vertical fin stabilizer offering the four-hole mounting configuration found on many beech aircraft. Detachable elements result in a significantly smaller shipping and storage carton than fixed element versions. Not approved for helicopter installations. P/N 11-06806 .....$309.00

COMANT VOR/LOC/GS (CI-159C) - Frequency 108-118 MHz (VOR / LOC) 329-335 MHz (Glide Slope) Similar to the CI 158C-3 with the exception of offering 2-hole mount instead of a 4-hole mount. Not approved for helicopter installations. P/N 11-17924 .....$382.00

AV

COMANT ANTENNAS

COMANT VOR / LOC / GS ANTENNAS

COMANT GLIDE SLOPE (CI-193) - Frequencies Covered 329-335 MHz (GS) For interior mounting for GS reception. P/N 11-05200 .....$194.75

COMANT VOR/GS (CI-205-3) - Frequency 108-118 MHz (VOR/ LOC) 329-335 MHz (Glide Slope) Mounting on the aircraft vertical stabilizer or helicopter tail boom. Set includes a pair (2) of "towel bar" sensor elements each with a single BNC output connector and a one-piece dual coax interconnect signal combiner harness with a single BNC connector output. Provides for a single cable routing to the avionics location.
P/N 11-17985 .....$1,426.00

COMANT VOR/LOC/GS (CI-215) - Frequencies Covered 108-118 MHz (VOR/LOC) , 329-335 MHz (GS) Detachable elements featuring two integrally molded mounting legs or "spacers" for increased strength.
P/N 11-17926 .....$439.00

COMANT VOR/LOC/GS (CI-259E) - Frequencies Covered 108-118 MHz (VOR/LOC), 329-335 MHz (GS) Fixed elements for helicopter aircraft.
P/N 11-06809 .....$328.00

COMANT COMDAT GPS ANTENNAS

COMDAT ANTENNA (CI-401-220) - Frequency • GPS 1575.42 +/- 3 MHz Contains stable amplifier that offers great performance. Gain performance at 26.5 to 31.5 dB minimum. Presents very low noise levels at 3.8 dB maximum. Built-in voltage regulator. P/N 11-04139.....$543.75

COMDAT GPS (CI-401-221) - GPS antenna with TNC connector. Meets RTCA DO 160-D operating standards including direct effects lightning. Operate with 26.5 dB panel mount GPS receivers. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equ. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz / 26.5 dB Gain P/N 11-06795.....$448.00

COMDAT ANTENNA (CI-420-220) - Stand-alone GPS antenna with TNC connector. Meets RTCA DO 160D operating standards including direct effects lightning. Designed to operate with 26.5 dB panel mount GPS receivers. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz - 26.5 db Gain P/N 11-05848.....$448.00

COMDAT GPS (CI-420-221) - Stand-alone GPS antenna with TNC connector. Meets RTCA DO 160D operating standards including direct effects lightning. Designed to operate with Garmin 17.0 dB panel mount GPSreceivers. Not compatible with most portable GPS receiver systems. GPS 1575.42 MHz - 17.0 db Gain P/N 11-04291.....$449.00

COMANT COMDAT GPS/XM ANTENNAS

COMDAT GPS/XM (CI 420-420) - Frequencies • GPS 1575.42 MHz / 26.5 dB Gain XM 2332.5-2345.0 /30-34 dB Gain. GPS and XM Weather antenna. Designed for compatibility with panel mount 26.5 dB gain GPS receivers. Add XM to an existing GPS antenna location without the need for a completely new installation location. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. Not compatible with most portable GPS receiver systems P/N 11-05852.....$779.00

COMANT COMDAT VHF/GPS ANTENNAS

COMDAT VHF/GPS (CI-2480-200) - Dual function single engine antenna for VHF/GPS. For popular 26.5 dB gain GPS panel mount systems.Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain P/N 11-05850.....$598.00

COMDAT ANTENNA (CI-2480-201) - 1575.42 MHz 17.0dB Gain 118 - 137 MHz VHF. Separate connectors for GPS and VHF, GPS is protected from VHF harmonics. Designed for use with Garmin's™ panel mount GPS systems that require 17dB gain. P/N 11-05849.....$599.00

COMANT COMDAT VHF/GPS ANTENNAS

COMDAT VHF/GPS (CI-2680-200) - Designed for use with Aircell Broadband Systems (ABS). Single and twin engine piston aircraft for applications of this antenna design. Some light turbine and light jets. Consult your FBO or installation shop for best application information. VHF 118-137 MHz GPS 1575.42 MHz / 26.5 dB Gain P/N 11-06789.....$902.00

COMANT COMDAT VHF/GPS/XM ANTENNAS

COMDAT ANTENNA (CI 2680-500) - Frequencies • VHF 118-137 MHz XM 2332.5 - 2345.0 30-34dB Gain. VHF/GPS/XM For twin and light jet aircraft. Provides 80 dB of VHF harmonic suppression. Requires Avidyne's DC50 coupler switch for dual VHF/Data Link functionality. Certified FAA TSO-C144 for GPS and GPS WAAS Class Gamma 1 equipment. Not compliant for GPS WAAS Class Gamma 2 and 3 applications. P/N 11-05855.....$1,182.00

COMANT COMDAT XM ANTENNAS

COMDAT XM (CI-420-10) - XM 2332.5-2345.0 /25.0 dB Gain. For Garmin GDL 69/69A receivers and Heads Up Technologies (HUT) receivers with short coaxial cable runs. Feature robust TNC female connector. P/N 11-06798.....$570.00

COMDAT XM (CI-420-16) - XM 2332.5-2345.0 /26-30 dB Gain. For Heads Up Technologies (HUT) receivers with longer coaxial cable runs . Features robust TNC female connector.
P/N 11-06799.....$570.00

COMANT ATTENUATOR, SPLITTERS, COUPLERS, & DUPLEXERS

COMANT SPLITTER (CI-5120) DUAL VOR/ LOC/ GS - 108-118 MHz & 329-335 MHz. For use with Garmin GNS 580 and similar systems. Splits single coax antenna input into equally proportioned VOR/ LOC/GS outputs. P/N 11-06826.....$209.95

CI-502 Dual VOR Coupler – Allows the simultaneous use of two VOR receivers from one VOR antenna. P/N 11-17975.....$157.90

CI-503 Dual GS Diplexer – Permits operation of two glide slope receivers from one glide slope antenna. P/N 11-17976.....$143.75

CI-505 VOR/GS Triplexer – Permits operation of two NAV & one glide slope receiver from 1 VOR/LOC antenna.
P/N 11-17977.....$194.75

CI-507 Single VOR/GS Diplexer – Provides the operation of one VOR and one glide slope receiver from one VOR/GS antenna.
P/N 11-17980.....$142.95

CI-509 COMANT COUPLER MARKER BEACON - Permits the use of two marker beacon receivers from one marker beacon antenna.
P/N 11-06852.....$145.75

CI-601 COMANT DUPLEXER - Designed to provide operation between two transceivers and one antenna. P/N 11-06827.....$1,216.00

CI-1125 VOR/GS Quadraplexer – Permits operation of two NAV & two glide slope receivers from 1 VOR/LOC antenna.
P/N 11-03777.....$198.95

AV

DM C63-1/A COM ANTENNA

Frequency Range 118-137 MHz The DM C63-Series antennas are VHF communication antennas designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 118-137 MHz for both transmitting and receiving applications. The DM C63-1/A is designed for mounting on top of the fuselage. All DM C63-Series antennas are supplied with a gasket and a doubler plate. P/N 11-02764 .....$169.75

DM C63-2 COM ANTENNA

118-137MHz Bent Rod For Bottom Installation, Frequency Range 118-137 MHz The DM C63-Series antennas are VHF communication antennas designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 118-137 MHz for both transmitting and receiving applications. The DM C63-2 is a low profile "bentback" radiating element designed for mounting on the bottom of the fuselage.....

P/N 11-02765 .....$217.95

DM C63-3/A ANTENNA

VHF communication antenna designed for high mechanical strength with machine tapered aluminum alloy radiating elements. These vertically polarized antennas cover the frequency range of 138-174 MHz for both transmitting and receiving applications. Low profile "bentback" radiating element designed for mounting on the bottom of the fuselage. Supplied with a gasket and a doubler plate.

P/N 11-02766 .....$309.00

DM C70-1/A COM ROD ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. Height: 15" Speed Rating: 400 mph. P/N 11-02768 .....$272.95

DM C70-3 COM ROD ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. Height: 20.5". Speed Rating: 250 mph. P/N 11-02769 .....$334.00

DM C70-4 COM ANTENNA

Designed for top or bottom installation on high-performance, single, twin and turbo engine fixed and rotary wing aircraft. These uniquely designed antennas offer mechanical strength and high-electrical efficiency to provide maximum reliability and full 360/720 channel transceiver operation. The lightweight profile is unobtrusive, resists icing and offers low drag. P/N 11-02770 .....$331.00

DM NI70-2 COM ANTENNA

L-band metal blades with and extended bandwidth for use with both transponders or distance measuring equipment. Sealed and waterproofed for increased reliability.

P/N 11-02767 .....$229.95

DM N48-1 NAV ANTENNA

Balanced loop design assures an omnidirectional radiation pattern at the horizon to obtain the maximum signal for standard VOR and area navigation systems installed in lightweight aircraft, medium twins, and helicopters operating up to 250 mph. Dual VOR receiver operation is obtained when the antenna is used with the DM H21-1 diplexer. P/N 11-02771 .....$769.00

DORNE & MARGOLIN -2/L BAND BLADE/ 4HOLE/C CONN

Blades are low profile antennas which incorporate high side load strength, a sealed construction against water and Skydrol, and lightning protection circuits. Reduced maintenance costs. P/N 11-08338 .....$244.95

DORNE & MARGOLIN NAV ANTENNA SPLITTERS

11-02774

DM H21-2 - Dual Market Beacon or Dual VOR

P/N 11-02772 .....$128.99

DM H22-1 - Single G/S or Single VOR.

P/N 11-02773 .....$149.50

DM H23-1 - Triplexer. Dual VOR & Single G/S

P/N 11-02774 .....$331.00

DM H69-1 - Quadraplexer. Dual VOR & Dual G/S

P/N 11-02775 .....$176.75

DM H24-1 - Diplexer, Dual G/S.....P/N 11-02776 .....$174.90

ANTENNA INSTALLATION TEMPLATES

Custom designed templates improve the antenna sealing process, making it more precise, efficient and cost-effective.

Each Sealing Guide template is custom designed to correspond to an individual antenna. They consists of 2 pieces, one inner part and one outer part. The inner template adheres to the base of the antenna, the outer template is placed on the body of the aircraft surrounding the antenna. Sealant is applied to the gap between the templates. Sealant is applied to the gap between the templates. When the templates are removed and discarded, the sealant is left to cure, resulting in a clean, precise and smooth seal.

Each template is custom designed to correspond to an individual antenna. You will no longer need to laboriously cut and paste various lengths of tape, trying to fit them around the irregular antenna shape.

The Sealing Guide template consists of 2 pieces, one inner part and one outer part. Application is simple. The inner template adheres to the base of the antenna, and the outer template is placed on the body of the aircraft surrounding the antenna. Sealant is applied to the gap between the templates. The templates are then removed and discarded. The sealant is left to cure, resulting in a clean, precise and smooth seal.

Incorporating the "Sealing Guide" system into your sealing process will significantly reduce labor time.

For use with the following antennas:	Part No.	Price
CI-105-9, CI-105, CI-105-16, AV-74	11-06653	$23.85
CI-105-3	11-06653	$23.85
CI-100 Series, CI-105-6, CI-105-7, CI-110-40 Series, CI-110-41 Series, CI-110-60 Series, CI-110-61 Series, S65-5366-850L, S65-5366-890L, S65-5366-2L, S65-5366-3L, S65-5366-7L, S65-5366-8L, S65-5366-10L, S65-5366-10LC, S65-5366-11L, S65-5366-116L, S65-5366-119L, S65-5366-144L, S65-5366-145L, S65-5366-168L, S65-5366-4 Series, AV-741, DM N150 Series, DM N170 Series	11-06656	$25.85
CI-105-20, CI-105-22, CI-105-24, CI-105-25, CI-150-250-L	11-06666	$26.95
CI-121, CI-122, CI-177, CI-177-1, CI-177-13, CI-177-3, CI-177-4, CI-177-20, CI-291, CI-292-1, CI-292-2, CI-292-3, CI-292-4, CI-222, CI-222-1, CI-4510, CI-317, CI-317-1,CI-405 Active Series, CI-405-26 Active, AV-10, AV-14, AV-17	11-06665	$26.95
CI-248-5, CI-248-30, CI-248-180, CI-2480-100, CI-2480-101, CI-2480-200, CI-2480-201, CI-2480-204, CI-2480-206, CI-2480-300, CI-2480-301, CI-2480-304, CI-2480-400, CI-2480-401, CI-420-10, CI-420-16, CI-420-220, CI-420-221, CI-420-224, CI-420-230, CI-420-420, CI-420-421, 2.70-4.40, 110-338	11-06666	$26.95
CI-401 Series ACT, CI-401 Series PAS, S67-1575-16, S67-1575-52, S67-1575-82, S67-1575-132, S67-1575-133, S67-1575-134, S67-1575-135, S67-1575-145, AV-GPS, DM N1021-1	11-06667	$26.95
S67-1575-136, S67-1575-863, S67-1575-109, S67-1575-137	11-06671	$26.95

GARMIN GA30 ANTENNA

A replacement for our GA™ 29 GPS antenna, this robust and passive antenna is packaged in a low-profile waterproof housing and provides three easy mounting solutions: pole, surface or under-deck (for the underside of fiberglass decks). Includes surface, pole and under-deck mounting brackets, mounting hardware, antenna cable (32 ft/10 m) and installation instructions. P/N 11-08669 ..... $53.50

TED 4-70 GPS NOTCH FILTER

Your global positioning system receives its positional information at 1575.42 MHz. The communications radios on-board your aircraft typically broadcast in the 121.5 MHz range. That is a wide separation in frequency bandwidth but it's not the complete picture. Your comm's are also producing harmonics which can produce significant noise at the GPS frequency. Now you can filter that signal and avoid potentially hazardous situations.

A simple low cost way to clean up the receivers frequency environment. The TED 4-70 notch filter installs quickly and easily via standard BNC bayonet couplings, in-line between radios and antenna. The 4-70 rejects in excess of 50dB of 1575.42 signal at the source. Each filter is individually tuned and checked to assure maximum performance. Of course, the 4-70 also passes strenuous environmental criteria so important in aircraft applications. Major GPS manufacturers recognize this problem & recommend using the 4-70 on new and retrofit installation.

P/N 11-02204.....$113.75

AV

RAMI ANTENNAS

ALL LISTED ANTENNA SPECIALISTS HAVE 50 OHM IMPEDANCE. FOR SPEEDS TO 250 MPH AND 25,000' ALTITUDE.

AV-534

VHF COM ANTENNA - Stainless steel bent whip antenna with insulator and mounting hardware. 118-136 MHz. Wt. 3-1/2 oz. Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 3.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: N/A Max Weight: 8 oz Max Height: 19-1/2" RF Power Capacity: 50 Watts

P/N AV-534 ..... $69.75

Same antenna as described above but furnished w/96" lead of RG58 A/U cable with BNC and ground strap with lugs. Wt. 7.5 oz.

P/N AV-534L $81.75

VHF "BROAD BAND" COM ANTENNA - Blade type-low drag. Aluminum radiator encapsulated in rigid urethane foam with white fiberglass housing. 118-136 MHz. Power capability: 50 watts. 13-1/2" high. Weight: 20 oz. Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 3.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 20 oz Max Height: 13-1/2" RF Power Capacity: 30 Watts

P/N AVT-4 ..... $309.00

VHF "BROAD BAND" ANTENNA - Rod type. Silver plated braid radiator encapsulated in fiberglass tube with white epoxy finish. Die cast aluminum base. 118-136 MHz. Wt: 8 oz. BNC termination. Supplied with weather sealing rubber pad and mounting hardware. Application: Airborne Communications Frequency: 118 to 136 MHz Impedance: 50 Ohms Nominal VSWR: 1.8 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 20-1/4" RF Power Capacity: 25 Watts

P/N AV-529 ..... $139.95

RAMI VOR ANTENNA - A VOR receive only antenna consists of taper ground high-strength 17-7PH stainless steel elements Insulators are weather-sealed compression-molded bakelite with the mounting holes provided. May be mounted with the V pointed either forward or aft. Operates at speeds up to 350 mph and altitudes up to 50,000 ft. Drag force of 3.42 lb @ 250 mph. The AV-532L includes all of the same features as the AV-532 and a 30 ft cable with integral balun is also supplied. Order P/N 11-03992 for male BNC connector.

P/N AV-532L $187.75

P/N AV-532 (without Cable) $157.75

TRANSPONDER ANTENNA - Chrome plated, phosphor bronze radiating element mounted in Teflon insulator. Ball tip for low-noise static discharge. May be installed from the outside. TSOd. 1030-1090 MHz. BNC connector. Wt. 1 oz.

P/N AV-22 ..... $52.75

MARKER BEACON ANTENNA - Boat Type Application: Marker Beacon

Frequency: 75 MHz Impedance: 50 Ohms Nominal VSWR: 1.6 to 1 Maximum Connector: Type "BNC" Female Max Weight: 6.25 oz Max Height: 2-1/2" RF Power Capacity: Receive only

P/N AV-569 ..... $122.75

VHF DIPLEXER COUPLER - Splits the signal from a single antenna into two NAV receivers; eliminating the need for a second antenna. Application: Navigation Frequency: 108 to 118 MHz Impedance: 50 Ohms Nominal VSWR: 1.4 to 1 Maximum Connector: (3) Type "BNC" Females Max Weight: 3.5 oz Insertion loss: 3 dB Avg / 5 dB Max Isolation: 30 dB Minimum Dimensions: 2" x 1-3/3" x 1-1/8" RF Power Capacity: Receive only P/N AV-547 ..... $102.75

ANTENNA AV-9 - A broadband DME ("L" band) antenna durably constructed around a Type "N" low-loss connector. Easily installed and operates to speeds of up to 250mph and altitudes up to 50,000 ft. Application: DME Frequency: 980 to 1220 MHz Impedance: 50 Ohms Nominal VSWR: 1.75 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "N" Female Max Weight: 3 oz Max Height: 2-1/2" RF Power Capacity: 250 Watts Pulse P/N 11-02344 ..... $114.85

BASE STATION ANTENNA - Ground Plane 118-136 MHz Application: VHF Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type PL-259 Max Weight: 1.0 lb Max Height: 34" RF Power Capacity: 100 Watts

P/N AV-5 ..... $133.75

AV-10 COMMUNICATIONS ANTENNA - 4-bolt design. Designed for high-performance aircraft applications. Identical in mounting and appearance to Cessna communications antennas. Rated to 250 knots. Equivalent to Comant CI-121 Antenna. Wt. 8 oz. Ht. 17-1/2" Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 2.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 20-1/4" RF Power Capacity: 25

P/N 11-12500 ..... $138.00

PUBLICSERVICEANDBUSINESSBANDANTENNAAV-14- Available in 4-bolt design.Features a tapered glass laminate housing and die-cast aluminum base. Rated to 250 knots. Equivalent to Comant CI-177-1. Wt. 8oz. Ht. 17.5" Application: Airborne Communications Frequency: 138 to 174 MHz Impedance: 50 Ohms Nominal VSWR: 2.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 17-1/2" RF Power Capacity: 25 Watts P/N 11-12600 ..... $186.95

AV-17 COMMUNICATIONS ANTENNA - 4-bolt design for mounting to the underside of an aircraft. Low profile configuration makes it ideal for helicopters and low-wing aircraft. Equivalent to Comant CI-122 antenna. Wt. 8 oz. Ht. 8-3/4" Application: Airborne Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 3.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type "BNC" Female Max Weight: 8 oz Max Height: 8-3/4" RF Power Capacity: 25 Watts P/N 11-12700 ..... $159.95

VHF TRIPLEXER SPLITTER - Splits signal from VOR NAV antenna into two NAV receivers and one glide slope receiver. Application: Navigation & Glide Slope Frequency: 108-118 & 328-335 MHz Impedance: 50 Ohms Nominal Connector: (4) Type "BNC" Females Max Weight: 3.5 oz Filtering: 30 dB Min / 40 dB Avg Insertion Loss: 3.75 dB Maximum Isolation: 22 dB Min / 35 dB Avg Dimensions: 2" x 1-3/3" x 1-1/8" RF Power Capacity: Receive only. P/N AV-571 ..... $136.95

RAMITRANSPONDER/DMEANTENNA(AV-74)- Constructed of an acrylonitrile-styrene-acrylic (ASA) shell. Supplied with cellular neoprene mounting pad and hardware. The antenna is designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.09 lbs @ 250 mph. This antenna is a direct replacement for Comant's model CI-105. Application: DME/Transponder Frequency: 960 to 1220 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Connector: Type "BNC" Female Max Weight: 0.2 lb Max Height: 3.4" RF Power Capacity: 2.5 kW Peak

P/N AV-74 ..... $109.85

VHF DIPLEXER SPLITTER- Splits the signal from a VOR NAV antenna into NAV and glide slope receivers. Application: Navigation & Glide Slope Frequency: 108-118 & 328-335 MHz Impedance: 50 Ohms Nominal Connector: (3) Type "BNC" Females Max Weight: 3.5 oz Filtering: 30 dB Min / 40 dB Avg Insertion loss: 1 dB Maximum Isolation: 38 dB Min Dimensions: 2" x 1-3/3" x 1-1/8" RF Power Capacity: Receive only P/N AV-570 ..... $106.75

AV

RAMI ANTENNAS

ALL LISTED RAMI ANTENNA SPECIALISTS HAVE 50 OHM IMPEDANCE. FOR SPEEDS TO 250 MPH AND 25,000' ALTITUDE.

ANTENNA AV-1 - is a base station antenna for communications with ground vehicles or aircraft. It has heavy-duty construction with 3/8" diameter aluminum radials, a 1" diameter aluminum tube radiator, and is iridite-treated for durability. It mounts easily to a 1" diameter pipe or a 1-1/4" O.D. tube with locking set screws Application: VHF Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 2.0 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type PL-259 Max Weight: 2.75 lb Max Height: 34 RF Power Capacity: 1000 Watts

P/N 11-05996.....$275.95

VEHICLE COM ANTENNA AV-3 - is a low profile snap-in mounting quarterwave antenna for use on surface vehicles. It has a solderless cable connection at the antenna and is supplied with 12 feet of cable and PL-529 connector. Application: VHF Communications Frequency: 118 to 137 MHz Impedance: 50 Ohms Nominal VSWR: 1.5 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type PL-259 Max Weight: 2.50 lb Max Height: 55" Max (field cuttable) RF Power Capacity: 100 Watts

P/N AV-3.....$116.75

ANTENNA AV-12 - is a VOR receive only antenna which uses a highly efficient technique of molding the elements directly into a high-impact thermo-setting bakelite center insulator. A 25 ft cable with integral balun is also supplied. with the AV-12L Application: VOR Receive Only Frequency: 108 to 118 MHz Impedance: 50 Ohms Nominal VSWR: 2.2 to 1 Maximum Connector: N/A Max Weight: 5.5 oz (14 oz with cable) Width Across Tips: 29-1/2" RF Power Capacity: Receive only

P/N AV-12.....$211.95

P/N AV-12L.....$236.95

COZY ANTENNA KIT - For composite Aircraft Antenna component kit for Canard Aircraft: Includes, copper tape and toroids to fabricate your own inexpensive, flexible antenna set for NAV, COM, MKR, ILS antennae. Antennae can be placed anywhere that they fit on fiberglass aircraft. This kit has the advantage of having all required parts for multiple (up to 8) antennae and are the most inexpensive antennae on the market.

P/N 11-11420.....$55.40

QUICKIE ANTENNA KIT - Simple installation procedure produces excellent communications antenna. Order additional kit for navigation antenna.....P/N 11-09800.....$19.75

Toroids Only - Used in our quickie antenna kit for composite aircraft.....P/N 11-09900.....$0.75 ea.

ADF ANTENNA KIT - This ADF Antenna Kit is an economical replacement for the Cessna factory style antenna used on all the smaller Cessna aircraft. This antenna will work on most aircraft except those with a moveable tail such as the Mooney.

Replacement Kit.....P/N 11-12300.....$26.50

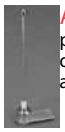
For new installations.....P/N 11-02655.....$33.95

VHF ANTENNA MOUNTING PLATE - Aluminum 2x4 mounting plate for straight 45-90 degree antenna including transponder antenna. The antennas sold separately, 4 clearance for mounting and center hold for antenna.....P/N 11-09988.....$15.50

ANTENNA DM N4-17/N - VOR/LOC/GS BAL. LOOP SYSTEM (DM N4-17/N) Single Output -- Frequency VOR/LOC 108-118 MHz -- GS 329-335.3 MHz Frequency Range: VOR/LOC 108-118 MHz GS 329-335.3 MHz VSWR: 5.0:1 max Polarization: Horizontal Radiation Pattern: VOR/LOC Omnidirectional GS Forward Pointing Gain: 0 +/- 2 dB Impedance: 50 Ohms Lightning Protection: dc short Weight: 1.32 lbs Connector: BNC Female Cable Length: 27 inches Side Load: 17 psi FAA Approval: C34e, C36e, C40c D0138 ENV. CAT. AA5XXXXXHDXS.....P/N 11-05859.....$998.00

CABLE ASSEMBLY AV-6 - Cable assembly consisting of 50 foot of RG-58/U low loss transmission line, a PL-259 connector at one end and a BNC male connector at the other. Commonly used with the P/N 11-06992.....$77.75

ANTENNA AV-741 - Designed for use with DME/Transponder sets. Constructed from an aluminum casting which is capable of withstanding particle erosion at high speeds. Designed to operate at speeds up to 350 mph and altitudes of 50,000 ft. It has a drag force of 0.35 lb @ 250 mph. Application: DME/Transponder Frequency: 980 to 1220 MHz Impedance: 50 Ohms Nominal VSWR: 1.4 to 1 Maximum Polarization: Vertical Pattern: Omni-Directional Connector: Type Max Weight: 0.5 lb Max Height: 3.3 RF Power Capacity: 4 kW Peak, 0.1 kW continuous P/N 11-06995 $115.75



ANTENNA AV-15 - Used with aviation, land mobile radio and flight phone bands. Chrome-plated ball tip provides low noise static discharge. Designed to operate at speeds up to 350 mph and altitudes of 50,000 ft. It has a drag force of 0.75 lb @ 250 mph.....

P/N 11-06993.....$154.75

ANTENNA AV-64 - Marker beacon antenna designed for very low drag. Supplied with cellular neoprene mounting pad and hardware. Designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.22 lbs @ 250 mph.

P/N 11-06994.....$124.80

ANTENNA AV-530 - Designed for broadband communications. Has a die-cast aluminum base and a tapered stainless steel whip for less drag at higher airspeeds. Supplied with a weather-sealing gasket and mounting hardware. Designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 1.65 lb @ 250 mph.

P/N 11-06696.....$156.75

AV-100 ELT ANTENNA - This FAA/TSO antenna is intended for use with an ELT (Emergency Locator Transmitter) for general aviation. It has a passive two frequency wire whip, designed for low speed aircraft (up to 250 knots). Frequency: 121.5 MHz, 406 MHz.

P/N 11-10839.....$203.95

AV-520 VOR/LOC/GS ANTENNA - The AV-520 FAA/TSO is a "V" style VOR/LOC/GS antenna utilizing detachable painted stainless steel elements and internal balun transformer. The antenna is rated at speeds up to 350 mph and altitudes up to 50,000 feet. It is a direct replacement for the CI 159C. Frequency: 108–118 / MHz 329-335 MHz.

P/N 11-10840.....$222.95

AV-525 VOR/LOC/GS ANTENNA - The AV-525 FAA/TSO is a VOR/LOC/GS antenna similar in style to the AV-12 but utilizes an internal balun transformer. The antenna is rated at speeds up to 350 mph and altitudes up to 50,000 feet. It is a direct replacement for the CI 157P. Frequency: 108-118 MHz (VOR/LOC) / 329-335 MHz (GS) P/N 11-10841.....$242.95

AV-535 ANTENNA - The AV-535 is a "Bent Whip" antenna suitable for belly mounting. It is designed to operate in the public service and business bands. The antenna is rated at speeds up to 350 mph and altitudes up to 50,000 feet. It is a direct replacement for the CI 292-3. Frequency: 138-174 MHz.

P/N 11-10845.....$188.99

AV-575 ANTENNA DIPLEXER/SPLITTER - The AV-575 FAA/TSO antenna is a marker beacon antenna splitter allowing two receivers to share the same antenna. It is a direct replacement for the CI 509. Frequency: 75 MHz.

P/N 11-10843.....$94.75

AV-585 ANTENNA DIPLEXER/SPLITTER - The AV-585 FAA/TSO antenna is a diplexer/splitter providing (2) VOR/LOC and (2) GS outputs from one VOR/LOC/GC antenna. It is a direct replacement for the CI 1125. Frequency: 108-118 MHz / 328-336 MHz.

P/N 11-10842.....$139.75

AV-925 ELT ANTENNA - The AV-925 antenna was developed to be used with airborne FM transceivers typically used in first responder type aircraft providing a single antenna solution for the multiband transceivers. It has met DO-160G, Section 8, Category U requirements for robust vibration and is qualified for installation on helicopters with unknown related rotor frequencies. It is also qualified to perform as a 406 MHz ELT antenna, and is well suited for this function on higher speed, fixed wing aircraft.

P/N 11-10846.....$2,295.00

AV-926 TRIPLEXER - The AV-926 triplexer can be used with airborne multiband FM transceivers. The device is designed to provide three separate frequency band ports (typically going to a multiband transceiver) from a single port multiband antenna.

P/N 11-10847.....$576.00

AV

ANTENNAS

BOB ARCHER AIRCRAFT ANTENNAS

These antennas have been designed by Bob Archer from Torrance, CA utilizing concepts common to military aircraft and space vehicles. The antenna performance is superior to most in use today in private aircraft. The only requirement for max. performance is that the antennas must be installed in accordance with the installation instructions. These antennas are designed to be installed inside fiberglass or other non-conductive wing tips or tail caps of metal or other conductive material aircraft.

SPORT AIRCRAFT ANTENNAS

MODEL 1A This Wing Tip Com Antenna is designed to fit inside larger fiberglass wing tips on metal (conductive that is) airplanes such as T-18's, RV's Bonanzas etc. But tuned out for the Com Band. The wing tips must have internal dimensions of at least 11"x24" and generally fit better on the bottom surface. The VSWR is normally less than 2.0:1 over a frequency band of 108 to 127 Mhz but could be higher due to installation factors. Offered because of pressure from RV builders. Users report good communications at ranges greater than 50 miles. Should be installed so that the maximum height of the tip is utilized to get the most vertical polarization.

Left Side ..... P/N 11-21016-1 ..... **$100.00**
Right Side ..... P/N 11-21016-2 ..... **$98.75**

MODEL 4 - Wing tip VOR antenna designed for smaller tips with a 10 degree flare on the top portion and a curled aft portion. VSWR less than 2.0:1 over the frequency band of 108 to 118Mhz.

Right Side ..... P/N 11-21025-1 ..... **$99.85**
Left Side ..... P/N 11-21025-2 ..... **$99.85**

NOTE: When ordering wing tip antennas, order antennas with -1 suffix if installing on the bottom inside surface of a left hand tip or upper inside surface of a right hand tip. Order antennas with a -2 suffix if installing on the inside lower surface of a right hand tip or the upper inside surface of a left hand tip. Wing tip Com antennas should be installed only on lower inside surfaces.

STAINLESS VHF ANTENNAS FOR HOMEBUILTS

These VHF antennas are stainless steel including all hardware. Insulators are made of Delrin, which resists extreme cold or high temperatures and is non-breakable. Antennas are available in straight and 45° or 90° angles. 118–136 mHz range. Weight: 3 oz. Not FAA approved.

Straight ..... P/N 11-04516... **$44.75** 45° .... P/N 11-04517 ... **$44.75**
Transponder ... P/N 11-02759... **$21.50** 90° .... P/N 11-00648 ... **$54.90**

COPPER ANTENNA FOIL TAPE 3/8 INCH

Used as an antenna ground in composite aircraft.
P/N 11-12900..... **$36.65**

TORROIDS (FERRITE BEADS)

Used in our quickie antenna kit for composite aircraft. P/N 11-09900..... **$0.75**

STAINLESS STEEL ADF ANTENNA KITS

• Replace your rusty antenna • Will never rust • Fits most high/low wing light aircraft • The safest! Ceramic safety insulator • Easy to install • The finest stainless ADF antenna you can buy ***Note: Not for Mooney aircraft or any aircraft with a movable empennage.***

Economy stainless ADF ANT.kit..... P/N 11-12300 ..... **$26.50**
ADF stainless ANTENNA kit..... P/N 11-02655 ..... **$33.95**

ANTENNAS FOR COMPOSITE AIRCRAFT

MODEL 6 - This com antenna is designed to be installed on the inside surface of the aft fuselage of composite and wood aircraft. It is a dipole that is folded up to minimize the vertical dimension and requires 12" of fore and aft space and 26.5" vertically. It is designed with flexibility so it can match the internal curvature of the fuselage. The VSWR is less than 2:1 across the com frequency band. ..... P/N 11-21000 ..... **$99.85**

MODELS 7 & 8 - These antennas are essentially the same with the exception of the overall length and the matching devices with the com antenna being installed vertically and the nav antenna being installed horizontally. VSWR is less than 2:1 over their respective frequency bands. The outer ends of these antennas may be swept to +/-30° to facilitate installation in various aircraft types.

NAV Antenna Model 7 ..... P/N 11-21030 ..... **$99.85**
COM Antenna Model 8..... P/N 11-21035 ..... **$99.85**

ACTIVE GPS ANTENNA AV-GPS

The RAMI model AV-GPS is a permanently mounted external aircraft antenna designed for use with GPS receivers which provide +5 volts DC on their antenna connector. It is an active (amplified) antenna providing an average of 26 dB gain over a passive (non-amplified) antenna. The antenna is designed to operate at speeds up to 350 mph and altitudes up to 50,000 ft. It has a drag force of 0.18 lb @ 250 mph. (Not FAA TSO'd) Commonly used for an external mounted GPS antenna for portable GPS units. P/N 11-17990 ..... **$209.95**

ANTENNA WIRE

COAXIAL CABLE - RG-58U – Tinned copper conductor, solid polyethelane dielectric. Standard cable for radio installations. For experimental aircraft only. P/N 11-04258..... **$0.58 ft**..... **$40.60/100ft.**

TYPE RG-400U – Tinned copper conductor, PVC Type IIA jacket. FAA approved for certificated aircraft. P/N 11-09202. **$3.75/ft $318.75/100ft.**

BNC COAXIAL ANTENNA CONNECTORS FOR RG-58U CABLE

Male ..... P/N 11-03992..... **$2.85**
Female ..... P/N 11-03993..... **$3.50**

BNC COAXIAL ANTENNA CONNECTORS FOR RG-400U CABLE

Male.....P/N 11-01802 ..... **$3.60** Female ..... P/N 11-01803 ..... **$3.95**

ANTENNA INSULATORS

(1) Feed-Thru Insulator for lead-in wire from fixed antenna. Type 4125. 10-32 threads, 3" length tip to tip, 1-9/16" casing. ..... P/N 11-10500 ..... **$15.65**
(2) Strain Insulator for receiver antenna. .....P/N 463 ..... **$9.60**

ANTENNA SEALANT AC236B1/2

Perfect sealant for antenna installations. AC-236 Class B is a two-component, manganese dioxide cured, liquid polysulfide polymer system providing excellent fuselage seals. P/N 09-00532 ..... **$22.70**

WSI WEATHER/SIRIUS RADIO ANTENNA - Operates with all new WSI InFlight® capable receivers. The antenna receives Sirius Satellite Radio broadcasts to enable the WSI weather service. It was designed specifically to suppress interference from ground based signals. Its proprietary design allows for optimum performance while the aircraft is turning. The antenna has been thoroughly tested and meets all of the RTCA DO-160E requirements. P/N 11-05937 ..... **$720.00**

TED TRANSPONDER ANTENNA - This monopole transponder/DME antenna meets the same specifications and is a direct replacement for the CI-101 and AV-22 antennas. Exceptional performance and value. P/N 11-17995 ..... **$17.95**

AV

KLEIN WIRE STRIPPERS / CUTTERS

Klein wire strippers and cutters cut, strip, gauge and loop a wide range of wire types and sizes. Made of strong, hardened steel with comfortable handles, these tools are durable and long lasting.

Part No.	Description	Price
12-00234	Strips 16 to 26 AWG stranded wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges.	$13.85
12-00236	Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 20-30 AWG solid wire and 22-32 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action.	$19.75
12-00235	Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 10-18 AWG solid wire and 12-20 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action.	$19.75
12-00233	Strips 10 to 18 AWG solid wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges.	$14.75

SUPERCHAMP IV CRIMPING TOOL

The professional quality crimping tool. This versatile hand tool has crimping dies for insulated an uninsulated terminals and splices in wire sizes No. 22 to No. 10 AWG. It has a terminal locator to position insulated terminals during crimping and an in-nose cutter for tight locations. This tool is a wire stripper and has a built-in heavy duty bolt cutter. Color coded dies in tool nose correspond to color on terminal insulation sleeve to insure die selection. A stud gauge and wire stripping gauge are important on the tool body. Cushioned handles. Made in the U.S.A.

P/N 604252-1 ..... $19.85

BANTAM ROTA-CRIMP TOOL

The AMP Bantam Rota-Tool crimps uninsulated terminals and splices for No. 8 to 1/0 sizes. The correct die position is selected by rotating dies to correct AWG number. Dies are fixed in tool to avoid loss. Compact, rugged and easy to handle. 15" long. Wt. 5 lbs. Not for certified Aircraft use. P/N 601075 .....$2,160.00

TWISTED STRIPPER TWISTED SHIELDED PAIR WIRE PREPARATION TOOL

Stop the Razor's Hidden Damage Ring and slit. That has been the standard way to remove twisted pair jackets since the introduction of this type of wire. This time consuming and innacurate process has obvious disadvantages when compared to the TS-7000: P/N 12-02031 .....$1,259.00

BALLPOINT HEX SOCKET DRIVER

3/32" Ballpoint Hex Socket Driver for use on hex head screws and nuts.

*This tool is commonly used with most avionics units like Honeywell Bendix/King and Garmin.

P/N 12-02063..... $4.90

QUICK SHOT AVIONICS REFERENCE MANUAL

Quick Shot is a compact, rugged binder type manual which shows detailed wire pin-outs for a wide variety of general aviation avionics equipment. Each page is removable and very durable. The wiring diagrams in Quick Shot Volume 1 include Apollo/UPS, Bendix, Garmin, Icom, Sandel Mid-Continent Instruments and Avionics, Sigtronics, United, Telex, David Clark, PS Engineering, Narco, Val, and many more.

P/N 11-01623.....$56.50

26-20GA ROUND BARREL CRIMPER

4-Way Indent Tool, Round Pin, 20-26 AWG, RS232 D-sub. High-grade steel construction for outstanding performance.

P/N 11-08685.....$166.95

LITTLE BLUE CRIMPER

The Daniels AFM8 is designed for most of the miniature and sub-miniature connector types that are so widely used in all types of electronic systems. Originally developed for the Air Force, the AFM8 meets the need for a miniature tool accommodating wire sizes 20 thru 32 AWG. The cycle controlled precision ratchet assures consistently accurate crimps every time. The tool has a built-in eight step selector knob for ease in dialing the correct crimp depth setting for the wire being used.

Little Blue Crimper.....P/N 11-04443..... $319.00
Adapter K13-1 For Low Density Pins .....P/N 11-12211.....$53.75
Adapter K42 For High Density Pins .....P/N 11-12212.....$53.75

BIG BLUE CRIMPER

The Daniels AF8 has virtually limitless application within the specified wire range of 12 thru 26 AWG. Over 1,000 turret heads or positioners are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The eight impression crimp, which is standard in the AF8, assures absolute maximum tensile strength with almost every closed barrel contact. The precision ratchet controls cycling on the tool in both directions of handle movement. This assures the same, accurate crimp every time. It's like having a quality control inspector at every work station.

P/N 11-04442 .....$316.00

AMP PRO CRIMPER II HAND TOOL

The PRO-CRIMPER II Hand Tool provides the versatility of general-purpose service of general-purpose service tools along with the reliability and ease of use of many premium-grade tools For versatility, 75 die sets (available separately) are interchangeable, including those for open-barrel contacts and terminals. Additionally, many of these die sets have multiple cavities for crimping a variety of contact or terminal sizes.

Pro Crimper II 58433-3.....P/N 12-01379..... $184.80
O-Crimp Die 58435-1 .....P/N 12-01380..... $312.00
Hex Crimp Die 58436-1 .....P/N 12-01381 ..... $147.75
Pin & Socket 58495-2 .....P/N 12-01382..... $207.95

CRIMPING/CUTTING TOOL

This tool is designed to crimp insulated and non-insulated 10 to 20 AWG solderless terminals & connectors. It has easy-to-read tool markings to identify the insulated or noninsulated crimping dies. Its tapered nose design works well in tight places and has specially hardened cutter in th nose for quick, clean cuts. Size: 9.75". Lifetime warranty.....P/N 12-00698.....$34.90

CRIMPMASTER CRIMP TOOL FRAME

Crimpmaster Crimp Tool Frame Only. 1.26lb.

30-506 Crimp tool ..... P/N 11-08686 .... $73.50
Die Set Hex for the 30-506 ..... P/N 11-08687 .... $53.75

CRIMPMASTER™ CRIMP TOOL

for #22 to #10 AWG (.324mm2 - 5.261mm2) Insulated Ring Tongue Terminals and Splices Features: Provides good and consistent crimp every time, Dies change quickly and easily with a screwdriver, Interchangeable dies provide versatility in a single tool, Cushioned, comfort-grip handles

30-500 Crimp tool .....P/N 11-08688 ..... $87.80
Die set 26-16 AWG for 30-500 tool.....P/N 11-08689 ..... $52.75

CRIMP TOOL (HX4) CRIMP TOOLS

The DMC HX4 Crimp tool features a system of interchangeable dies which eliminate the need of separate fixed die crimp tools for each and every different application. Many maintenance and manufacturing concerns have standardized on this model, thus eliminating the cost associated with maintainaing and calibrating bulky inventories of single purpose tools. Length: 11" Weight: 11 oz.

H4X Crimp Tool.....P/N 11-08690.....$267.95
Die set 5-24 AWG.....P/N 11-08691.....$160.75

HAND CRIMP TOOL GMT232

The GMT232 Hand Crimp Tool crimps low profile environmental splices. The GMT232 is the most popular tool to cover the range of 12 (yellow), 16 (blue), and 20 (red) splices for low profile environmental splice applications. The GMT232 has a locator which is configured to hold the splice in the correct location while either wire is being terminated. This tool is comparable to the popular Tyco AD1377.

P/N 11-08692.....$172.90

AV

AVCOMM AC-2EX PORTABLE INTERCOM

Measuring a mere 5.1" by 2.85", it is designed to produce powerful communications you can depend on. The compact design makes it easy to carry in your flight bag, a feature pilots who rent aircraft will especially appreciate. Need 4 positions? Simply add the AC-2XM module to accommodate additional passengers. FEATURES: • AVCOMM's Expandable Portable: 2 to 4 place • Rugged compact design • Two 9V batteries with quick access or 12-28V DC power • Stuck mic' indicator & Power-transmit LED • For use with mono or stereo headsets • Pilot priority PTT • Fail safe feature • Wt: 14.1 oz. • Full 3 year factory warranty.....P/N 11-02264.....$227.26

DRE D-205E INTERCOM

Two place portable/built-in expandable intercom with outstanding, clean stereo sound. Individual squelch circuits and PTT jacks. Stuck mic warning (visual and audio alarm). Automatic failsafe pilot communication to radio with loss of power to the intercom. Accessory inputs for Stall Warning, Altimeter Alert, Collision Avoidance & Engine Monitor, etc. (for built-in use). Standard cell phone interface. No deterioration of sound as battery weakens Powered by two 9V batteries. Auxiliary power input (on the side). Automatically compatible with mono or stereo headsets or a mix. Optional mounting flanges allow installation in ultra-lights and LSA. Anodized aluminum case. Additional features include Mil-Spec quality cabling, music input for MP3 players, CD, etc. and auto music muting with manual override. 3-year warranty.

DRE Stero Intercom.....P/N 11-09576.....$349.00
DRE-205E Aux. Power Cord.....P/N 11-09585.....$14.75
DRE Aux. Power Cord Ol Style.....P/N 11-09586.....$13.50
DRE-205E Mounting Brackets.....P/N 11-09577.....$12.95

AVCOMM DX-AC6PA INTERCOM

Designed to provide the highest level of audio performance. The Quick Install Kit makes it a snap for almost anyone to install without the task of soldering individual connectors. Compact aluminum case that fits virtually anywhere on the panel. 2~6 place panel mount intercom. Quick Install Kit included. Rugged construction. Solid extrudedaluminum frame. Compact size fits virtually anywhere. Power transmit LED. 12~28 volt compatible. Pilot priority PTT. Full three-year factory warranty

P/N 11-02267.....$374.95

FLIGHT DATA SYSTEMS AP-60 AUDIO MIXER

An Audio Mixer is Required any time there is more than one Audio Source. This unit mixes and amplifies six audio inputs. Mounts behind the instrument panel. For Example: * Communications Radio Audio * Navigation Radio Audio * EFIS Warning Audio * Music Player Audio * Traffic Warning Audio Specifications * Aux. Audio Input * Compact (2.5" X 3.4 X .6"), Lightweight (2.1 oz) * 12-28 Volt Compatible * No Special Tools Required For Installation

P/N 10-03427.....$84.75

NAV-DATA 4 PLACE INTERCOM

Our Four place intercom is packed with features only found in much more expensive units. Failsafe feature for pilot in the event of power loss. Pilot isolate switch. Oprates on one 9 volt battery. Adjustable squelch (mute). Voice activated (VOX). Built in push to talk switch. Music in / Record out jacks. P/N 13-06088.....$106.75

FLIGHTTECH ITC-2004 ENRI 4-PLACE INTERCOM

4 place portable intercom with pilot isolate capability. Features: Exclusive Electronic Noise Reduction circuits. Up to 110db of Noise Reduction. Continues Audio, No missed Syllables or Words. Built-in Cellular Phone Interface, includes patch cable. Pilot/All Switch. 9 Volt Battery or External DC Operation, Cigarette Lighter Adaptor included. Auxiliary Stereo Audio Input with Radio Mute and Intercom Audio Mute. Light weight, 10 oz. Push-to-Talk Button for Keying the Comm Radio. Pilot and CoPilot Radio PTT Jacks. Small Size: 5.5" x 1.5" x 3.2" Three Year Warranty.....P/N 11-17669.....$260.95

FLIGHTTECH ITC-401SJ INTERCOM

• Exclusive Background Noise Reduction Technology • Continuous Audio, No Missed Syllables or Words • Up to 110db of Noise Reduction • Single Volume Control • Built-In Cell Phone/Aux Audio Interface • 9 Volt Battery Operation • External DC Power Jack and Power Cord • PTT for Keying Comm Radio • Small Size: 4" x 2.5" x 1.5' • Compatible with headsets with Electret Microphones • Three Year Warranty.

P/N 11-09736.....$169.95

AIRCRAFT SPRUCE SKYCOM 200 PORTABLE INTERCOM

200- 2 PLACE - Measures just 2.25"x1.38"x 2.75". Portable & Compact. Pilot/Co-Pilot Volume Controls. Adjustable Squelch Circuit. Fail Safe Mode. Easy Battery Access. Powered by 9V Battery. 25-30 Hours Battery Life

200E- 4 PLACE - Measures just 2.25"x1.38"x 2.75". The Skycom 200E 4-Place comes with a 2-Place intercom and a 5-foot extension cable that connects to another 2-Place remote intercom for passengers in the backseat. Portable & Compact. Pilot/Co-Pilot Volume Controls. Adjustable Squelch Circuit. Fail Safe Mode. Easy Battery Access. Powered by 9V Battery. 25-30 Hours Battery Life

SkyCom 200E 2-Place Intercom.....P/N 11-11860.....$89.95
SkyCom 200E 4-Place Intercom.....P/N 11-11865.....$118.95

SKYCOM 400 PORTABLE INTERCOMS – features dual volume controls, pilot/crew/pass, pilot/co-pilot isolate, auxiliary music input & 9V battery or cigarette liter operation.

SkyCom 400 4-Place.....P/N 11-11875.....$149.95

COMTRONICS ULTRA-COM II INTERCOM

Comtronics very popular two-place portable intercom was designed for pilot/copilot communication in high noise environments. Separate volume controls are adjustable by either pilot or passenger to meet individual hearing needs. This intercom can be used as an intercom only or a complete package with the addition of a single transceiver using a matching Comtronics radio interface cable with push-to-talk switch. The ULTRA-COM II integrates directly with all Comtronics headsets and helmets providing air-to-air and air-to-ground communication. This intercom includes a 3-foot adapter cord connecting to various external inputs such as a radio interface cable with push-to-talk switch for a single transceiver. P/N 11-00685.....$28.95

PS ENGINEERING PM 1000II 4 PLACE MONO PANEL MOUNT INTERCOMS

PS Engineering's renowned voice activated intercom (VOX) eliminates clipped words and shouting. Other features include individual volume and squelch controls for the pilot and copilot. Music can be added to the intercom for in-flight entertainment. Automatic muting when the intercom is active, or intercom and radio (PM 1000II-series) ensures uninterrupted communications. PS Engineering's "SoftMute" gradually returns the music to the original level when conversation stops. PM 1000 is an effective 2-place intercom, with individual volume and squelch controls, while the 4-place PM 1000II adds a transmit indicator lamp, and music muting during radio traffic. The PM 1000II, 11-11922, has pilot isolate mode that allows the pilot to concentrate on flying, while the passengers enjoy music and conversation. The PM 1000II with CREW mode (P/N 11-11920) allows for separate intercom for the pilot and copilot positions, as well as separate music sources for front and back. On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on 11-11922 PM 1000II with out crew wire harness , on 11-11920 PM 1000II with crew wire harness, or on 11-02553 please call 800-826-3160. Warranty: 1 year, Unit is TSO'D.

PM1000II 4-Place Intercom.....P/N 11-11922.....$309.95
PM1000II-w/Digital Recorder.....P/N 11-11906.....$419.95
6-pl. for expansion module.....P/N 11-02555.....$399.95
PM1000II-w/ Internal Crew.....P/N 11-11920.....$449.95
PM1000II-w/Crew & Recorder.....P/N 11-11908.....$479.95
PM1000 2-pl. for dual audio panels.....P/N 11-02553.....$429.95
Jack Kit (4-Place).....P/N 11-11910.....$35.00

XCOM INTERCOM

Digitally controlled, intercom system suitable for nearly every 2 or 4 place aircraft. Features a full VOX (Voice Activated) intercom with second com ability, music input with muting and the ability to use different branded headsets without compatibility issues. Successfully mated to the leading handhelds as well as panel-mounted Icom, Narco, King and the like. Measuring only 2-1/8 x 1 x 3-7/8" or (53 x 24 x 100mm) and with a panel size of only 1 x 2 1/8 (53 x 24mm), it's one of the smallest and lightest intercoms in the world and only draws 60 ma (at 14 V) during operation. Mount horizontally or vertically. No voice clipping. Monitors and reduces background noise when the voice circuit is open. One simple DB15 connector is all thats needed, RS-232 port for future software updates. 2 com inputs cater for a primary airband com and a secondary VHF, UHF or Marine band transceiver. Additional input for CD player, FM Radio or MP3 player is available with auto muting to enable seamless communication in the cockpit. Voltage: 10-30 VDC. 2 yr warranty.

P/N 11-02207.....$447.00

AV

PS ENGINEERING AEROCOM III

The Aerocom III is a 2-place stereo portable intercom with IntelliVox™, a completely automatic VOX squelch. Each microphone computes the difference between speech and cabin noise. It opens instantly when somebody talks and only the microphone spoken into is active. This prevents unwanted background noise from entering the audio system. Powered by a 9V battery (10 hrs of use) or aircraft power. Features low battery alert. By using external push-to-talk buttons (not included), both the pilot and copilot positions have the ability to transmit over the aircraft radio. The aerocom III will route stereo music to the headsets through the optional music cable. The music automatically mutes when there is intercom activity or radio traffic.There are two modes controlled by a top-mounted switch. In "ALL" mode, both positions hear radio communications, music, and have intercom capability. In the "ISO" mode, only the pilot side is connected to the aircraft radios, without intercom or music distractions. The copilot position continues to have music, and intercom communications with an expansion unit if installed.The aerocom III is expandable to 4-places with the Aerocom EX expansion unit available by special order. This contains separate music input and dedicated IntelliVox™ processors. Specifications: Size: 4.375"l x 3.250"w x 1.500"h; Wt: 10 Oz.; Power: 9V batt. or 12/24V aircraft power Battery Life: Approx. 10 hrs.; Headphone output: 40m w/channel into 150Ω, < 1% THD; ±3dB mic frequency range: 350 Hz to 4500 (to reduce noise); ±3 dB music frequency range: 180Hz–15,000Hz P/N 11-00427 ..... $299.95
Expansion Unit (adds 2-places)..... P/N 11-01108 ..... $139.95

PM 3000 PANEL MOUNT STEREO INTERCOM

The world's first stereo intercom to be FAA-TSO approved. Available in 4- & 6-place versions. The 4-pl. PM 3000 (P/N 11-11931) features pilot isolate and "All" reception modes. The PM 3000 6-place (P/N 11-00851) intercom includes a "CREW" mode. In CREW mode, the pilot & copilot are on one intercom channel, while passengers have conversation on another. Constant squelch adjustments are eliminated with the PM 3000. A single squelch knob controls multiple circuits making the intercom one of the quietest to use, even in the noisiest airplanes. The 6-place PM 3000 provides for two independent stereo entertainment inputs. This gives the passengers and the crew each the option to listen to their music device. The PM 3000 has an automatic fail-safe interconnect to the aircraft systems. If power to the intercom is disrupted, the pilot's headset is automatically connected to the aircraft radio. With the PM 3000 installed, both pilot and copilot have transmit capability over the aircraft radio. A 2-color LED shows green when power is on, and red during radio transmissions. This feature acts as a stuck microphone indication. On On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on the PM 3000 4 place or 6 place please call.
PM 3000 4-Pl. Stereo Intercom (w/o digital recorder) – single music input. Installation hardware includes four sets of headset jacks, a music jack and reversible (horizontal and vertical) metal mounting plate.
P/N 11-04843..... $419.99
PM 3000 4-Pl.w/ digital recorder w/o Crew ..... P/N 11-02556..... $539.95
2-1/4" Mounting plate (w/o crew) ..... P/N 11-00394..... $17.95
PM 3000 6-Pl. Stereo Intercom (w/o digital recorder) – dual music input. Installation hardware includes six sets of headset jacks, two music jacks and reversible (horizontal and vertical) metal mounting plate.
P/N 11-00851..... $599.00
2-1/4" Mounting plate (w/ crew)..... P/N 11-00393..... $17.95

PM501 PANEL MOUNT INTERCOM

For the pilot who is interested in the basics and then some, the PM501 panel mount inter- com provides the pilot with standard features along with a few features found in more expensive systems.This four channel intercom features individual power output amplifiers for each headset, true pilot isolate for uninterrupted radio communications, music input w/ unprecedented high monaural music input, music muting during ICS communications w/ "soft mute" for easy listening entertainment, & PS Engineering's top quality squelch circuit. *The PM 501 does not come with jacks. For a quote on the wiring harness please call. Specifications: Height: .90 inches, Width: 2.60 inches, Depth: 4.85 inches, Weight: 8.5 ounces, Power Requirement: 12-24 VDC, Unit is not TSO'D P/N 11-11800 ..... $269.95

PMA 4000 PANEL MOUNTED AUDIO PANEL/INTERCOM

Offers the simplicity of IntelliVox - automatic intercom squelch. Designed with the kit and homebuilt in mind, the PMA 4000 has 2 Com and 2 Nav inputs, along with 4 additional unswitched inputs. The PMA 4000 is a monaural 4-place intercom. A speaker amplifier is included. The copilot volume control can also be remote controlled, for tandem aircraft. On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on the PMA 4000 harness please call. PMA 4000 w/o Recorder ..... P/N 11-01634 ..... $795.00
2-1/4" Mounting plate ..... P/N 11-00395 ..... $19.95

PS ENGINEERING PM 1200 2 PLACE MONO HIGH NOISE PANEL MOUNT INTERCOM

The PM 1200 is a 2-place panel mount intercom designed for the loudest of aircraft. If you fly Warbirds or other extremely noisy aircraft, PM 1200 is perfect. Incorporating IntelliVox with our new Active Mic Processor (AMP), the PM 1200 dynamically reduces noise inadvertently picked up by the Mic. It also supplies up to 120mW of headset audio. On all PS Engineering intercoms a wire harness must be done by PS Engineering or a PS Engineering dealer or warranty is void. For a quote on the PM 1200, or the PM 1200 blind mount click here. Specifications: Height: 1.25 inches, Width: 3.0 inches, Depth: 5.50 inches, Weight: 12 ounces, Power Required: 12-24 VDC, Warranty: 1 Year, Unit is not TSO'D P/N 11-01671..... $429.99

SIGTRONICS SCI-4 INTERCOM

The SCI-4 from Sigtronics features dual squelch indicator lights and dual volume and squelch controls to control volume and squelch independently for front and back seats, crew/pilot isolate and pre-wired harness for easy installation. The SCI-4 is RFI and EMI immune and measures only 1"x 2.5". Includes all hardware and jacks needed for installation. SCI-S4/S6 Intercoms have the same features as SCI-4/6 Intercoms plus music inputs. 5-yr warranty. Made in USA.
SCI-4 4-place..... P/N 11-00027..... $349.00
SCI-6 6-place..... P/N 11-00028..... $379.00
SCI-S6 Stereo 6-place ..... P/N 11-00425..... $479.00
SCI-S4 Stereo 4-place ..... P/N 11-00424..... $450.00

SIGTRONICS BATTERY POWERED PORTABLE INTERCOMS

5-year warranty and a sure-fit for all students, instructors and aircraft renters. All have a music input and Aux output for recording lessons and radio communications. Both pilot and co-pilot positions have PTT jacks. Powered by an internal 9V battery (included), good for 40 hours of operation in airplanes lacking a cigarette lighter socket. A 4' Aux power adapter is included. When using the power cord, the battery is by-passed, preserving the life of the battery. The 2-place SPO-22, 4-place SPO-42 and 6-place SPO-62 are compatible with all standard aircraft headsets. The 4-place and 6-place models have a satellite box for rear seat positions to keep unwanted headset cords out of the pilot's way. A special HIGH-NOISE model, perfect for Ultra-lights and Kit aircraft, is available in all configurations. It filters out background noise, lowers the input level at mic amp, increases output signal, and mic interface can be modified to interface with Icom radios. Also features a sidetone modification. Made in USA.
For 2 People (Standard) ..... P/N 11-02794 ..... $187.00
For 2 People (High Noise)..... P/N 11-02793 ..... $210.00
For Up To 4 People..... P/N 10-19115 ..... $210.00
For Up To 4 People (High Noise)..... P/N 11-01799 ..... $252.00
For Up To 6 People..... P/N 11-02798 ..... $244.00

SIGTRONICS SPORT 200/200S INTERCOM

Optimized for the High Noise Environment. Sigtronics 2-place Sport 200 & Sport 200S Intercoms are designed specifically for Light-Sport and Ultralight aircraft. Tested at ambient noise levels of up to 120dB, their Sport series intercoms will outperform all other intercoms on the market. modes of operation, voice activated squelch and push to intercom — perfect for open cockpit aircraft, give the Sport 200 intercoms maximum flexibility and performance. To this they added special internal circuitry to optimize the intercoms for the most demanding high noise environments. Use Satellite Radio, MP3 or CD players as your audio source with stereo headsets for true stereo sound. With full or partial music muting for intercom and full mute for radio reception and transmission, you will be able to enjoy your music and never miss a radio call. Size: 1" x 2.5" x 4"deep. For even more convenience you can mount the intercoms horizontally or vertically. All hardware including headphone and microphone jacks are included with these easy to install intercoms. Weight: 4.5 oz., Jacks & wiring harness: 5.5 oz.; Input power: 11VDC - 32VDC; Current: 0.06 am
SPORT 200S Stereo panel mount int. ..... P/N 11-02885 ..... $279.00
SPORT 200 Intercom ..... P/N 11-02884 ..... $199.00

SIGTRONICS FACE-PLATE OPTION FOR INTERCOMS

This new faceplate fits the Sigtronics SPA-400, SPA-600 and SBD-800 voice-activated panel mount intercoms. Designed to adapt these compact units to the standard 2-1/4" instrument hole, the new printed bezel increases mounting flexibility and customer convenience. Made of durable and lightweight ABS plastic.
P/N 11-08500 ..... $9.95 Ea.

AV

SIGTRONICS MINIATURE PANEL-MOUNTED INTERCOMS

Measuring only 1" x 2-1/2" x 4" deep, only 4.5 oz, the SPA-400 and 6-place SPA-600 are FAA TSO'd and can be mounted either horizontally or vertically. Also available in special "HIGH-NOISE" model SPA-400N for Ultra-lights, and open cockpit aircraft, kit aircraft and warbirds. The se intercoms allow you to put "push-to-intercom" buttons in the aircraft to eliminate VOX mode when desired. This is especially good for open-cockpits where wind noise can be a problem. The SPA-400N simulates side-tone because some radios that are currently used in these markets do not have it. The SAS-440 and SAS-640 intercoms feature Sigtronics' exclusive "Auto-Squelch". One touch of the squelch button and the intercom perfectly sets the squelch level to your headsets and the aircraft noise level. All Sigtronics intercoms are voice activated with a 5-year warranty and operate on any voltage from 12V to 24V. Made in USA.

2 Thru 4 Way (Standard SPA-400 ..... P/N 11-02791 ..... $216.00
6 Way (Standard) SPA-600 ..... P/N 11-02801 ..... $252.00
4 Way (High Noise) SPA-400N ..... P/N 11-02792 ..... $237.00
2 Thru 4 Way (Auto Squelch) SAS-440 ..... P/N 11-02804 ..... $324.00
6 Way (Auto Squelch) SAS-640 ..... P/N 11-02816 ..... $360.00
Retrofit stereo switcher-use with previously installed
SPA-400 intercom - RES-401 ..... P/N 11-02796 ..... $129.00

SIGTRONICS SPA-4S STEREO INTERCOM

The SPA-4S is a 2 or 4 place voice activated intercom with inputs for stereo music. It is a small, compact system that allows it to fit in space critical panels. The SPA-4S uses the industry standard Sigtronics squelch, fast on slow off for hands free communication. The music will full mute during ATC communication and partial mute during intercom communication. Each intercom comes complete with all necessary mounting hardware, jacks, and two 4-foot pre-wired harnesses. The SPA-4S only requires 1" X 2.5" of panel space, mounts horizontal or vertically, is 4" deep, and weights 5.5 oz. The SPA-4S intercom can easily upgrade the SPA-400. The SPA-4S uses the same panel hole pattern and interface cable as the SPA-400. A second cable is provided for the music inputs and headphone outputs. The SPA-4SN is available for the high noise amateur built aircraft. As with all of Sigtronics products, the SPA-4S is RFI and EMI immune. Power: 11-32 VDC.

Standard SPA-4S ..... P/N 11-00567 ..... $289.00
High Noise SPA-4SN ..... P/N 11-00568 ..... $311.00

PILOT USA PA200 SERIES INTERCOM

PA200 World's Smallest Portable Intercom. A solid VOX intercom offering clear communications. Adjustable volume control and squelch control allows for easy adjustment for all ambient noise levels. 2 push-to-talk switches can be used with the intercom allowing transmission through the radio. Unit is ideal for rental aircraft. PA 200R is also available for motorsports. FEATURES: •On/Off volume control •Adjustable squelch circuitry •Fail-safe capability •Y-adapter for 2 push-to-talk switches •Powered by one 9V battery (24 hours) •Size: 2.25" x 1.38" x 2.75" •3-yr unconditional warranty •Wt: 8 oz. (227 grams)

PA-200T ..... 11-02712 ..... $115.00
PA-200ET ..... 11-11525 ..... $140.00
PA exp box ..... 11-03541 ..... $34.95
PA-200TA24 ..... 11-03542 ..... $140.00
PA-200IK ..... 11-11530 ..... $130.00
PA-200IC ..... 11-03544 ..... $130.00
PA-200V ..... 11-03545 ..... $130.00
PA-200TA23 ..... 11-03543 ..... $140.00

PILOT USA PA400 SERIES INTERCOM

The stereo version PA-400ST intercom is a portable design that has been used successfully in general aviation for over 18 years. No other intercom on the market has the features and capabilities of the PA-400ST intercom. This particular series has been recently modified to include a cell phone jack for your safety and convenience. Before using in an aircraft we recommend that you take a check-ride in your living room and become familiar with all the features of your new intercom. A hook-up diagram is included in this guide along with brief description of each function and each control setting.

PA400ST P/N 11-03548 ..... $175.00

FLIGHTCOM IISX PORTABLE INTERCOM

The IIsx is the world's most popular 2-place, portable intercom. The modular design offers expansion capability to the backseat if needed. * Expandable to 4-place portable with optional SR-4 expansion module * Auxiliary inputs and outputs for music or recording flight information * Low-battery indicator and pilot isolate * Uses aircraft power or 9-volt battery Flightcom IISX 2 place includes: • IISX Intercom • Cigarette lighter adapter • Co-pilot transmit cable Flightcom IISX 4 place includes: • All parts in the 2 place • SR-4 expansion module

Flightcom IISX 2 Place ..... P/N 11-08700 ..... $99.00
Flightcom IISX 4 Place ..... P/N 11-08710 ..... $147.95
SR-4 Remote Expansion module ..... P/N 11-04260 ..... $46.65

FLIGHTCOM 403D PANEL MOUNT STEREO INTERCOM

Stereo intercom features include 6-place capability, instant music muting, and pilot isolate so you could focus on your flight and eliminate backseat chatter.

* 3-place transmit capability * Easy to adjust squelch and volume controls * Instant music muting, pilot isolate Specifications: * Weight: 5 oz * Length: 5" * Width: 2.4" * Height: 1.2 in * Not TSO'D * Two-year warranty Flightcom 403 intercom includes * 403 Intercom * Connector kit * 6 place stereo jack kit * 2-1/4" hole face plate & vertical/horizontal face plates

Switches are provided in installation kit to allow individual headphone positions to select either stereo or mono mode, allowing the use of monaural headsets

403 w/o recorder w/ jack kit ..... P/N 11-17605 ..... $229.00
Stereo input and output jack kit ..... P/N 11-18755 ..... $121.75

FLIGHTCOM 403MC PANEL MOUNT INTERCOM

The 403 is a 6-place panel mount, voice-activated mono intercom. This easy to use intercom is designed to fit almost anywhere in the panel. Includes:* 403MC Intercom * Connector kit * 4 place mono jack kit. Features: * 3-position transmit capability * Selectable muting and pilot isolate * Auxiliary input for music or alerts * Rectangular faceplate can be mounted horizontally or vertically Specifications: * Weight: 3.6 oz * Length: 2.62 in * Width: 2.37 in * Height: 1 in * Not TSO'D * Power requirement: 12-28 VDC * Two-year warranty ..... P/N 11-08755 ..... $149.00

FLIGHTCOM 403LSA INTERCOM

2-place stereo activated intercom enhances the fun of flying, as well as safety, by optimizing communication clarity. Features include 2-place capability, instant music muting, and pilot isolate so you can focus on your flight. Easy to use and designed to fit almost anywhere in the panel. Switches provided in installation kit allow individual headphone positions to select either stereo or mono mode. Weight: 5.0 oz. Size: 5 in. L X 2.4 in. W X 1.2 in. H Power Requirements: 0.16 amp, 12-28 VDC

P/N 11-07871 ..... $189.00

AV

FLIGHTTECH ITC-401-ENRI PORTABLE INTERCOM

The ITC-401-ENRI 2-place intercom features the Enhanced Noise Reduction Intercoms circuit in a basic, small package. With ENRI, the problems common with voice activated intercoms are eliminated. There are no squelch controls to adjust, no automatic squelch circuits that keep changing levels, only one single volume control. ENRI continuously monitors background noise picked up by the headset microphone and eliminates it, even while talking. Excellent for open cockpit aircraft. 9V Battery Operation • Pilot/All Switch • Available with cable and standard plugs or ICOM A-22, A3 and A4 Cable & Plug • 3 year warranty • 4"L x 2.5"W x 1.5"D. P/N 11-00544 ..... $169.95

ITC-401-23 - Plugs directly into Icom A5 & 23 with out the need for additional cables P/N 11-01005 ..... $169.95

ITC-401/1-ENRI - Plugs into Icom A22, A3, A4 with out need for additional cables P/N 11-00825 ..... $169.95

FLIGHTTECH ITC-2003-ENRI REMOTE PANEL MOUNT INTERCOM

The ITC-2003-ENRI features ENRI technology, a unique design, a small panel control unit and a remote intercom unit. The small control panel consisting of a Volume control and a Pilot/All switch measures only 1"w x 1.3"d x 1"h. The second part, the intercom unit is only 4.6"x 3.1"x 1.7" and included mounting tabs. Because of D.C. switching and control between the panel control and the intercom, the mounting location is not critical. Simply mount the intercom unit in an easy to reach location, run cables to the headphone jacks, power and a small six conductor cable to the panel control unit. The Electronic Noise Reduction feature is exclusive to FlightTech Intercoms and allows for quiet communications without the background noise common to Voice Operated Squelch controlled intercom. With ENRI, the microphones are active at all times, ENRI monitors the background noise and eliminates it allowing only the headset user's voice to pass.
Power: 12V or 24V P/N 11-00172 ..... $365.95
With preassembled 2-place cable..... P/N 11-00822 ..... $365.95

FLIGHTTECH ITC-401TC INTERCOM

ITC-401TC is different from the rest of the ITC-401 series in that the "Noise Reduction" control is located on the front of the intercom, rather then an internal "Set and Forget" adjustment The ITC-401TC is available in versions with cables and plugs for panel mount jacks as well as handheld radios and they include the following: ITC-401TC, Standard cable and plugs for panel jacks P/N 11-03201 ..... $169.95
ITC-401TC-1, Cable and plugs for the ICOM, A22, A3, A24, & A
P/N 11-03202..... $169.95
ITC-401TC-23, Cable & plug for the ICOM A23 & A5
P/N 11-03203..... $169.95

FLIGHTTECH ITC-2001-ENRI 2PLACE PORTABLE STEREO INTERCOM

ITC-2001-ENRI

Ideal for the renter pilot or as a permanent intercom without the installations concerns associated with a panel mount intercom. Features: Exclusive Electronic Noise Reduction circuits. Up to 110db of Noise Reduction. Continues Audio, No missed Syllables or Words. Built-in Cellular Phone Interface, includes patch cable. Pilot/All Switch. Specifications: 9 Volt Battery or External DC Operation, Cigarette Lighter Adaptor included. Auxiliary Stereo Audio Input with Radio Mute and Intercom Audio Mute. Light weight, 10 oz. Push-to-Talk Button for Keying the Comm Radio. Pilot and CoPilot Radio PTT Jacks. Small Size: 5.5" x 1.5" x 3.2" Three Year Warranty.

Model	Description	Part No.	Price
	Electronic Noise Reduction Intercoms		
ITC-2001-ENRI	2-place portable intercom w/ENRI	11-17668	$232.95
ITC-402P-ENRI	Full feature panel mount intercom designed for the pilot with a two place aircraft.	11-00926	$219.95
ITC-404SP-ENRI	4-place stereo intercom panel mount	11-01354	$279.95
ITC-2001-I	2 Place Intercom for use with (ICOM A22, A24 AND A6 Radios)	11-07010	$234.95
Model	Description	Part No.	Price
	Pre-Assembled Cables		
ITC-404S-P	2-place Cable	11-01377	$130.95
ITC-404S-P	4-place Cable	11-01378	$138.95
ITC-2003	2-place Cable	11-01379	$130.95
ITC-2003	4-place Cable	11-01380	$138.95
ITC-404S-P	Interface Cable	11-01381	$29.95

SOFTCOMM PANEL MOUNT INTERCOMS

ATC-2P (2-passenger), ATC-4P (4-passenger) & ATC-6P (6-passenger) panel-mounted intercoms are so compact that they fit most anywhere in the aircraft's panel. Designed to mount either horizontally or vertically, these panel-mounted intercoms will fit in any homebuilt, business aircraft, or general aviation aircraft in production today, and offer stereo or mono sound. The panel-mounted intercom has an exclusive Softcomm feature of a back-up battery (9V) that affords power to the Intercom when the aircraft's master power is shut off or fails in flight. The battery is automatically switched off when aircraft power is present and on when absent. The panel-mounted intercom offers SoftComm's features of Recorder-In and Recorder-Out. A miniature remote audio panel houses this feature and can be located anywhere the pilot prefers. This allows recording of clearances, flight lessons, enroute weather and flight events. The ATC-2P, ATC-4P, & ATC-6P panel-mounted intercoms come complete with mounting instructions, wiring diagrams, all required microphone and headphone jacks, audio recorder jacks, and bi-directional mounted nomenclature plates. These intercoms are supplied with pre-tested 8 ft. cable assembly terminated into a DB25 pin connector. Size: 1"hx2.5"wx6"d. Power 12Vdc. Wt:6.25oz., 3yr warranty.

ATC-2P ..... 2-Place Intercom (mono).....P/N 11-11812 ..... $199.95
ATC-2PS ..... 2-Place Intercom (stereo) .....P/N 11-02216 ..... $199.00
ATC-4P ..... 4-Place Intercom (mono).....P/N 11-11822 ..... $209.00
ATC-4PS ..... 4-Place Intercom (stereo) .....P/N 11-05313 ..... $219.00
ATC-6P ..... 6-Place Intercom (mono).....P/N 11-11824 ..... $229.95
ATC-6PS ..... 6-Place Intercom (stereo) .....P/N 11-11807 ..... $248.75

ITC-402P/404S-P PANEL MOUNT INTERCOMS WITH ENRI

The ITC-402P Enhanced Noise Reduction Intercom is a small,easy to install intercom designed for the pilot who flies a two or four place aircraft. Featuring single control volume control operation,the pilot and passenger can enjoy quiet communications on those long cross country trips. The ITC-402P includes a stereo auxiliary audio input.To prevent missing ATC communications, the music is muted when either audio from the communication radio is present or there is intercom audio. The new ITC-404S-P has full auxiliary Stereo in and Stereo out, with dual function muting. Features: • Enhanced Noise Reduction Technology • No Squelch circuits or controls • Size: 2.1"w x 1.2"h x 3.1"l • Single Volume Control Operation • Pilot/All Isolation Switch • Pilot and Copilot Push-to-Talk Switch Inputs • Stereo Music Input w/Muting • 12 to 28VDC operation.•Cellular Phone interface, include phone cable.

Model	Description	Part No.	Price
	Electronic Noise Reduction Intercoms		
ITC-404SP	4-place stereo intercom panel mount Note: Will not work w/ the unamplified dynamic mic.	11-01354	$279.95

SOFTCOMM PORTABLE INTERCOMS

These top quality, economical intercom systems are perfect for any type aircraft and are compatible with any standard headset. Features include automatic on/off power, panel controls for volume and gain and a pilot isolate switch (ATC-4 only). The intercoms are 9V DC portable or panel mountable with pilot and copilot transmit as a standard feature. These intercoms can be used with other equipment to record instructions or play cassette music. The new model of the ATC-2 has reduced size and weight, and a front-panel mounted PTT switch. The improved ATC-4 and ATC-6 also have a new dual transmit design. All units have aux power cord and stereo cable. With pilot isolate and push-to-talk switch. Model ATC-2T is a 2-place portable intercom designed for the student pilot. It has a recording feature that allows all CFI and ATC instruction to be recorded on a standard cassette player for future study. It is 9V battery powered and is compatible with all general aviation headsets and radios.

2-Place Portable (mono) ATC-2Y..... P/N 11-05818 ..... $176.95
4-Place Portable (mono) ATC-4Y..... P/N 11-05819 ..... $184.95
4-Place Portable (stereo)ATC-4S..... P/N 11-05905 ..... $211.95

SOFTCOMM INTERCOMS FOR ULTRALIGHTS

These Softcomm Intercoms are specially designed to operate with today's transceivers in mind. The ATC-2I models are full featured intercoms with Record-In and Record-out, a PTT switch mounted in the face place and a "AUX power" input for using aircraft power instead of the 9 VDC battery(S), Listen to CB's, CD players and AM/FM radios while in flight. Features music "MUTE" circuit, volume control and "squelch" adjustment. Housed in a rugged ABS case with a space for 2 batteries, these intercoms are compact and fully portable.

Model	Description	P/N	Price
ATC-2I-A23	Icom, IC-A23, IC-A5	11-02217	$175.95
ATC-2I-A20	Icom, Delcom and Bendix King radios	11-07700	$173.95
ATC-2I-A22	Icom's A-22 compact transceiver	11-07710	$173.95

AV

BOSE® A20® HEADSET – CLARITY ALOFT

Improved noise reduction. Greater comfort. Bluetooth® connectivity.

The most technologically advanced Bose® headset ever. Bose was the first to introduce active noise reducing headsets to aviation more than 20 years ago, forever changing the way pilots fly. Now, the New Bose A20® Aviation Headset introduces an entirely new standard. It's been engineered for significantly increased noise reduction in even louder environments. With an improved degree of comfort you'll appreciate. All without compromising the clear audio you expect from Bose. Plus, a Bluetooth® communications interface, auxiliary audio input and priority switching. It's made in the U.S.A., and meets or exceeds all TSO requirements. No other headset can deliver this advanced combination of benefits.

Bose® Acoustic Noise Cancelling® headset technology - Sound is monitored outside the earcups and at the ears, unwanted noise is identified, and a correction signal is created to cancel the unwanted noise. TriPort® acoustic headset design - Proprietary Bose® technology uses acoustically tuned ports to optimize the low-frequency output of the system. Adjustable boom microphone - Provides the means of communication for pilots and passengers. Proprietary ear cushion design - Provides an important acoustic seal between the headset and the head. Replaceable ear cushions - Provide an important acoustic seal between the headset and the head. Redesigned earcup architecture - Provides more room for customers' ears without compromising overall headset size. Magnesium alloy headband - Provides strong, lightweight structural frame to support the headset and distribute the necessary clamping force. Adjustable headband sliders - Offer up to three inches of adjustment in headband length, using high-strength, aerospace-grade composite material. Detachable sheepskin headband cushion - Evenly distributes the headset weight across the user's head. Center torsion spring - Mechanical support for the headband joint, allowing it to be opened or closed to fit different head sizes. Side swappable down cable - Allows easy attachment of integrated cable/boom mic assembly to either earcup. Headband stop - Prevents headband from closing completely when not in use. Carrying case - Custom-designed to fit the headset. Adjustable clothing clips - Provide means to attach the portable control module and cable to a pocket, belt or other suitable attachment point. Cable, microphone and connector configurations - Interface and compatibility with a wide range of civilian and military aircrafts. Tethered battery door - Provides protection and easy access to the battery compartment. Integral circuit shielding - Shields sensitive electronics from the harsh electromagnetic interference (EMI) associated with ground and airborne transmitters. Digital micro-controller system - A digital microcontroller operates the user controls and module functionality, and monitors battery life. Auxiliary audio input - Input jack for external audio sources such as GPS systems and music players. Male-to-male audio cable - Provides the means to connect an external audio source to the headset. Independent, receded L/R volume controls with midrange detent and visual volume level indicator - Adjust the headset audio volume level for left and right channels. Power LED and battery-life indicators - Indicates when the noise reduction is turned on. Indicates the remaining hours of battery life (green: healthy batteries, yellow: 2-8 hours, red: less than 2 hours). User configurable switches - Stereo/mono switch to configure the headset for a specific intercom. Auto-off (on/off) switch gives user the option of automatic or manual power control. Audio prioritization switch - Manages the different audio signals available to the headset (intercom, aux-in). Flexible power circuitry - Senses the power source of the headset and switches seamlessly from battery to aircraft power without compromising the headset performance. **Requires the 6-pin to Twin Plug adapter Automatic smart shutoff - Detects that the headset is no longer being used and automatically shuts off power after a period of inactivity. FAA/JAA TSO-certified - Meets or exceeds requirements for headset performance. Limited 5-year transferable warranty - Limited warranty coverage for parts, labor and second-day return shipping expenses of non-abusive malfunction.

Bose® A20® Aviation Headset™ with Bluetooth® Connectivity		
Description	Part No.	Price
Battery Powered. Electret microphone. Straight Cord. twin plug	11-08724	$1,095.00
Aircraft powered. Electret microphone. Straight Cord. 6 pin connector	11-08725	$1,095.00
Battery Powered. Electret microphone. Straight Cord. U-174 plug	11-08726	$1,095.00
Bose® A20® Aviation Headset™ Without Bluetooth® Connectivity		
Battery Powered. Electret microphone. Twin Plug. Straight Cord	11-08728	$995.00
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08729	$995.00
Battery Powered. 5-ohm dynamic microphone. Straight Cord, U-174 plug	11-08731	$995.00
Bose® A20® Aviation Headset™ - No cable		
Headset Assembly	11-08732	$800.00
Bose® A20® Aviation Headset™ Cable Assemblies with Bluetooth® Connectivity		
Battery Powered. Electret microphone. Straight Cord. twin plug	11-08733	$295.00
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08734	$295.00
Battery Powered. Electret microphone. straight Cord. U-174 plug	11-08736	$295.00
Bose® A20® Aviation Headset™ Cable Assemblies without Bluetooth® Connectivity		
Battery Powered. Electret microphone. Straight Cord. twin plug	11-08737	$195.00
Aircraft powered. Electret microphone. Straight Cord, 6 pin connector	11-08738	$195.00
Battery Powered. 5-ohm dynamic microphone. straight Cord, U-174 plug	11-08739	$195.00
Battery Powered. 150-ohm dynamic microphone. straight Cord, U-174 plug	11-08754	$195.00

Bose® A20® Aviation Headset™ Accessories		
Description	Part No.	Price
6-pin to Twin Plug Adapter	11-08741	$49.75
Aircraft power Installation Kit	11-01846	$32.95
Ear Cushion Kit	11-08743	$29.95
Headband Cushion Kit	11-08744	$19.95
Boom Microphone Windscreen (Electret)	11-04846	$6.75
Boom Microphone Windscreen (Dynamic)	11-08747	$6.75
Service Accessory Kit (ear cushions, headband cushion, mic windscreen)	11-08748	$49.75
Carry Case	11-08749	$24.95
Auxiliary Input Cable Adapter	11-08751	$13.75
Clothing Clip	11-08752	$5.75
Earcup Down-cable Cover	11-08753	$9.95
headset Cable. 5 Pin XLR Airbus Plug	11-12046	$295.00

S-MOD STEREO MUSIC ADAPTER FOR THE BOSE AVIATION X

This is the feature that the manufacturer forgot. Our adapter replaces the manufacturer's cover which is used to cover the 5-pin plug on the unused (non-microphone) earcup. If the microphone is mounted on the left earcup, our adapter goes on the right, and vice-versa. Features: • Replaces existing cover on headset without modifications.• Input stereo audio media device into headset via 3.5mm mini-stereo jack..• Hi/Lo impedance switch for volume matching..• Does not block aircraft communications.

P/N 11-07965 ..... $79.95

CLARITY ALOFT HEADSET

Used to improve both hearing protection and speech communications. Each earpiece includes a miniature speaker that reproduces speech signals from the aircraft audio system. The replaceable compliant foam tips attach to the earpiece and contain a pathway for the sound to travel from the transducer to the ear. Provides the highest level of hearing protection available by any method including active noise reduction. (ANR) The noise-canceling microphone is a high fidelity noise canceling Electret Condenser microphone. Include a music input in the Volume control box. This button could also be used as a backup in case of other system failures. Balance and comfort are the result of its elegantly simple design. P/N 11-02923 ..... $525.00

CLARITY ALOFT PRO HEADSET

Clarity Aloft™ Aviation Headsets are the result of our commitment to the highest standards in aviation communications. These headsets contain the most technically advanced components brought together from diverse experts in audio communications. All the features you'll love from the original with TSO Certification and additional features like: Music Input. Equipped with a music input in the volume control box that will accommodate most music devices through a 1/8 inch plug.

P/N 11-05794 ..... $695.00

CLARITY ALOFT LINK AVIATION HEADSET

Wirelessly connect to multiple Bluetooth devices for phone calls, music, and more. Tailored Digital Signal Processing gives it the clearest sound available today. Purchase includes: Headset, carrying case, owner's guide, starter supply of eartips (package of 12), and 2 AA batteries. Features: •Full spectrum noise reduction • Professional grade microphone with added Digital Signal Processing • 2 Bluetooth devices can be linked simultaneously • Enjoy music and movies on your iPod or iPad P/N 11-10420 ..... $795.00

CLARITY ALOFT ACCESSORIES

Description	Part No.	Price
Headset Bag	11-08441	$34.85
Microphone Cover	11-04644	$4.95
Replacement Ear Tips - Standard (Gray)	11-04643	$24.95
Replacement ear Tips - Slim (Peach)	11-04642	$24.95

AV

LIGHTSPEED ANR HEADSETS

LIGHTSPEED

LIGHTSPEED ZULU PFX ANR HEADSET WITH BLUETOOTH®

Meet the new leader in ANR aviation headsets: Zulu PFX. The proprietary innovations in Lightspeed's new PFX technology deliver the quietest headset available and create a personalized flying experience by actively conforming to your ears, your environment, and your preferences.

- Acoustic response mapping measures your unique auditory landscape, adapting the audio response to your ear shape and size for maximum noise attenuation, voice clarity, and music fidelity.
- Streaming Quiet™ dynamic ANR continuously adapts to your environment, extending the amount, consistency, and frequency range of noise cancellation.
- Personal preferences can be set using the enhanced capabilities in FlightLink, the proprietary app developed by Lightspeed.

In addition to its advanced personalization features, Zulu PFX also leverages the latest technological advances across multiple fields.

- Enhanced durability — Rugged cables, constructed of silver-coated copper alloy wrapped around a Kevlar core, deliver extraordinary flexibility, strength, and audio quality.
- Upgradeable firmware — Updates are just a download away, giving Zulu PFX unlimited potential to evolve with new software innovations.

Zulu PFX also includes the award-winning comfort and advanced features that have made the Zulu family the choice of pilots around the world—made even better.

- Music fidelity — The Front Row Center™ feature combined with advanced digital processing enriches the concert-class fidelity.
- Auto Shutoff™ — In Zulu PFX, Lightspeed's proprietary Auto Shutoff feature is enhanced, with user controlled sleep delay intervals.
- Full Bluetooth integration — Enjoy excellent call clarity, music fidelity, and wireless access to critical audio alerts from mobile device apps.

Included: Custom molded carrying case, cellphone/music patch cord, USB cord, steel CPU clip, cord clip, four AA batteries, foam windscreen.

Weight: 14 oz.

5-Year Lightspeed warranty

Zulu PFX Headset
Dual GA Plugs, Battery Power ..... P/N 11-12007 ..... $1,100.00
Dual GA Plugs, Panel Power ..... P/N 11-12008 ..... $1,100.00
Helicopter LEMO, Panel Power ..... P/N 11-12009 ..... $1,100.00

LIGHTSPEED HEADSET ACCESSORIES

Description	Part No.	Price
Zulu Head Pad	11-08723	$9.95
Sierra Replacement Head Pad	11-10662	$9.95
QFR/Skycom Zippered Comfort Head Pad	11-07555	$10.75
Zulu / Sierra Ear Seals	11-08043	$19.85
3G Series 1" Soft Leather Seals	11-01987	$19.95
XL Series 1.5" Soft Seals	11-01988	$19.85
QFR/Skycom Series 0.75" Comfort Seals	11-01284	$19.95
QFR/Skycom Replacement Stock Seals	11-01995	$19.85
Zulu, Sierra, 3G, QFRc, XLC Wind Screen	11-08575	$3.35
Mach 1 Wind Screen, sold each	11-00358	$3.75
Zulu Shirt Clip	11-10661	$3.95
Music Patch Cord	11-01989	$5.95
Cell Patch Cord	11-01990	$5.65
Aviator Sunglasses	13-10005	$350.00

LIGHTSPEED ZULU.2 ANR HEADSET WITH BLUETOOTH®

Experience the remarkable comfort and quiet of the ANR aviation headset that firmly established Lightspeed as the innovation leader. A triumph of communication connectivity, Zulu.2 delivers remarkable comfort, quiet, and clarity, and a host of advanced features:

- Full Bluetooth integration — Enjoy excellent call clarity, music fidelity, and wireless access to critical audio alerts from mobile device apps.
- FlightLink compatible — Capture and retrieve incoming and outgoing communications with the free FlightLink app.
- Cell phone/music connection — An integrated control box auxiliary input offers an additional option for connecting a cell phone, music player or other audio device.
- ComPriority™ — Never miss important radio communications with patented ComPriority which lowers the volume of any auxiliary device automatically during radio or intercom transmissions.
- Auto Shutoff™ — Lightspeed's proprietary feature saves battery life by automatically shutting down the headset power when not in use.

Included: Custom molded carrying case, cellphone/music patch cord, cord clips, two AA batteries, foam windscreen.

Weight: 15.7 oz.

5-Year Lightspeed warranty

Zulu.2 Headset
Straight Cord, Dual GA Plugs, Battery Power ..... P/N 11-09692 ..... $850.00
Straight Cord, Lemo, Panel Power ..... P/N 11-09716 ..... $850.00
Coil Cord, Lemo, Panel Power ..... P/N 11-09717 ..... $850.00
Coil Cord, U-174, Battery Power ..... P/N 11-09718 ..... $850.00
Coil Cord, Dual GA Plugs, Battery Power ..... P/N 11-09719 ..... $850.00
Zulu.2 Custom ..... P/N 11-09721 ..... $850.00

LIGHTSPEED SIERRA ANR HEADSET WITH BLUETOOTH®

Sierra is everything you've been looking for in a value-priced headset with the fit, comfort and features you've come to expect from Lightspeed:

- Quiet — State of the art technology brings active noise cancellation over a broad range of low frequency noise.
- Comfort — Equipped with plush ear seals and weighing just 16 ounces, Sierra is remarkably comfortable, even during long trips.
- Bluetooth connectivity — Allows wireless connection from Bluetooth phones. (Stereo streaming [A2DP] and alerts from mobile device apps are not available with Sierra.)
- FlightLink compatible — Sierra is now compatible with FlightLink's recording feature.
- Music connection — An integrated control box input allows you to connect a music player.
- ComPriority™ — Patented ComPriority lowers the volume of any auxiliary device automatically during radio or intercom transmissions.

Included: Carrying case, music patch cord, cord clip, two AA batteries, foam windscreen.

Weight: 16 oz.

5-Year Lightspeed warranty

Sierra Headset ..... P/N 11-08588 ..... $600.00

AV

SIGTRONICS HEADSETS

AIRCRAFT SPRUCE SKYCOM & SKYPRO HEADSETS

SKYCOM H-40A AVIATION HEADSET - Features Foam Ear Seals and Air-Foam Headpad for exceptional comfort and fit. The Skycom H-40A Headset provides 24 dB Passive Attenuation. It Features a high quality Noise Cancelling Electret Microphone specially designed to match the frequency of the human voice to provide sound clarity, best intelligibility, and background noise reduction. The Unique ball-joint articulating boom rotates laterally for precise lip-angle alignment, and swivels for placement on either side of the mouth. Independent built-in volume control permits pilot and co-pilot to separate sound levels. The Cables are shielded and the speakers are wired in parallel for greatest reliability. Fully adjustable headband fits all sizes. Navy Blue Earcups are fabricated from high impact ABS plastic..... P/N 11-09099.....$89.95

SKYCOM H-80A AVIATION HEADSET - The Skycom H-80A is the top-of-the-line Passive headset manufactured for Aircraft Spruce. It incorporates all of the quality features of the economy SkyCom H-40A above, plus many more. The Skycom H-80A Headset features Leatherette Ear Seals and Super Cushion Headpad for exceptional comfort and fit. The Skycom H-80A Headset provides 24 dB Passive Attenuation. It Features a high quality Noise Cancelling Electret Microphone. It has Dual volume controls and a Mono/Stereo Selector Switch. All this in a premium, lightweight headset with attractive dark navy blue ear cups.....P/N 11-09098 ..... $129.95

SKYCOM ANR HEADSET - Available exclusively from Aircraft Spruce,

The Skycom ANR Headset features Soft Leatherette/ Memory Foam Ear Seals for exceptional comfort and fit. Ultra-soft Pillow-Top Headpad remains comfortable during long flights. The Skycom ANR provides 24 dB Passive Attenuation, and 16-19 dB Active Attenuation. It Features a high quality Noise Cancelling Electret Microphone for crisp communications, full flex boom. The required battery for this headset is 9 volt. NOW UPDATED with Auto Shut-Off circuitry and Cell Phone/Music Input. Includes carrying case. This Skycom headset delivers excellent ANR performance at an economical price!

P/N 11-02214 ..... $239.00

REPLACEMENT EAR SEALS

These seals fit SKYCOM H-40A, SKYCOM ANR, and SKYPRO H-80A headsets.

Replacement Gel Ear Seals .....P/N 11-04680.... .....$24.95/pr.
Replacement Foam Ear Seals.....P/N11-04681 .....$11.95/pr.

HEADSET/INTERCOM PACKAGES

AIRCRAFT SPRUCE SKYCOM PACKAGE #1

• 2 Skycom H-40A Headsets • 1 Skycom 400 Intercom (portable) • Headset Bag • Push-To-Talk Switch.....P/N 11-11885 ..... $378.95

BRG AH2000G ANR HEADSET

24 kt Gold Plated Headband. Up to 45 dB Active Noise Reduction. GA Dual Plugs. Mono / Stereo Capability. Cell / Satellite Phone Interface. Auxiliary Audio Interface. Noise Canceling Electret Microphone. All Flexible Microphone Boom. Super Soft Double Foam Head Pad. Easy-to-wear super soft silicone gel ear seals. Dual oversized volume knobs for easier control. Straight cord from headset to molded plug, 60 in. (150CM). Auto Power On and Off. Automatic switch to passive mode with low battery. Low battery indicator. Assembled strictly following the FAA TSO standards. Designed in the USA.

P/N 11-12163..... $289.00

SIGTRONICS S-AR HEADSET

The S-AR headset protects your hearing switched on or off. With S-AR switched on you hear a major reduction in low frequency noise. Radio transmissions that are weak and garbled on passive headsets will sound strong and clear with an S-AR headset. Features up to 19 db of active noise reduction, air foam head pad cushion that virtually eliminates "Hot Spots", ultra-deep gel ear seals for comfort and ease of use and custom flex boom for perfect mic placement. Sigtronics exclusive "Stop-Break" high flex cord and RFI and EMI free electronics make the S-AR ideal for pilots who want a high performance mono/stereo headset. A battery power module (9V) with belt clip and custom headset bag are included with all S-AR headsets.

P/N 11-00859..... $449.00

SIGTRONICS HIGH PERFORMANCE HEADSETS

All Sigtronics headsets and intercoms are specifically designed for high-noise environments and are RFI and EMI immune, giving you clear, interference-free transmission even in fabric or composite aircraft or in use with handheld radios.

SERIES 8 HEADSETS

"8 Series" superlight headsets are full-size quality headsets available at just 11.9 oz., delivering comfort, and performance. A new lightweight, custom flex boom stays where you put it, even in the roughest conditions.

S-58 features new, durable, non-glare "powder-coated" black hardware and Sigtronics "sky-blue" earcups. The new ergonomic headpad and custom fit gel seals deliver comfort and eliminate "hot-spots". A new microphone configuration cancels unwanted noise before it can get into the system. Sigtronics' 5-year warranty, custom padded bag, easy-grab volume controls, ultra foam windscreen & exclusive clothing clip are included. Wt. 11.9 oz. Flex boom.

Mono .....P/N 11-19105 ..... $237.00
Stereo .....P/N 11-02803 ..... $267.00
Helicopter .....P/N 11-02813 ..... $276.95

S-68 headsets include all of the S-58 features plus high-performance black earcups and 14K Gold Plated hardware. P/N 11-19125 ..... $252.00
Stereo ..... P/N 11-02805 ..... $272.00
Helicopter..... P/N 11-02815 ..... $260.00

S-45 series headsets are the same as the S-40 headset, except they have airflow headpads and gel earseals for maximum comfort.....P/N 11-02797 ..... $194.95
Helicopter .....P/N 11-02810 ..... $274.95
Stereo .....P/N 11-02811 ..... $229.00

S-20 incorporates the M-80 microphone, designed specifically for use in high noise environments with its excellent noise canceling properties. The microphone gain is set to operate over a wider range of aircraft radios, even handheld - the ultimate test.

S-20 Headset.....P/N 11-02799 ..... $144.00

SIGTRONICS S-8 HEADSET

Eliminate scratching the top of your canopy by using the Sigtronics S-8 headset. features a behind the head headband with quick adjust hook-n-loop strap that fits the shape of your head, a flex boom and gel ear seals. The S-8 has a passive noise reduction rating of 24 dB. 5 Year warranty. P/N 11-00645.....$259.00

SIGTRONICS HEADSET ACCESSORIES

P/N 11-04368

Electret Mic Muff ..... P/N 900084 .....$2.75
Foam Ear Seals..... P/N 100369 .....$9.70
Shirt Clip..... P/N 11-04368.....$4.25
S-AR Ear Seals Gel / Foam Filled
P/N 11-12533..... $19.95
Windscreen MIC 8 Series ..... P/N 11-12534.....$2.85

SIGTRONICS HEADSET/INTERCOM COMBOS

SIGTRONICS 2-PLACE COMBOS - Includes 2 Sigtronics S-58 headsets, 1 SPO-22 (2)place intercom, push-to-talk switch, & comfort covers for headsets.
Combo #1A w/S-58 Headsets .....P/N 11-00037..... $679.95

SIGTRONICS 4-PLACE COMBOS - Includes two Sigtronics S-58 headsets, SPO-42 (4)place intercom, push-to-talk switch, & comfort covers for headsets.
Combo #2A w/S-58 Headsets .....P/N 11-00038..... $706.85

SIGTRONICS PANEL MOUNT COMBOS - Same as Combo #2 except substitute SPA-400 panel mount intercom for SPO-42 portable intercom.
Combo #3A w/S-58 Headsets .....P/N 11-00039..... $712.85

SIGTRONICS SPO-22N PORTABLE INTERCOM COMBO - Combo #4 includes 2 S-20 headsets, SPO-22N Battery powered portable intercom and headset intercom bag .....P/N 11-04655..... $387.50
Combo #4A includes 2 S-58 Headsets, SPO-22N Battery powered intercom, and headset/intercom bag. .....P/N 11-04656..... $515.00

SIGTRONICS SPORT 200 PANEL MOUNT INTERCOM COMBOS
Combo #5 includes 2 S-20 Headsets, Sport 200 Panel Mount Intercoms and Headset/Intercom bag.....P/N 11-04653..... $329.00
Combo #5A includes 2 S-58 Headsets, Sport 200 Panel Mount Intercom, and headset /intercom bag .....P/N 11-04654..... $525.00

CALL FOR SPECIAL PRICES!

AV

DAVID CLARK HEADSETS

DAVID CLARK H10-13.4 HEADSET

Provides David Clark quality without the hot spots, clamping, or weight discomfort. Features a certified noise reduction rating of 23 dB and weighs only 13.4 oz. Drastically reduced headband force, new soft airflow pillow headpad, flo-fit gel ear seals, M-7A noise cancelling electret mic, and low profile volume controls with detect settings. 5 yr warranty.

P/N H10-13.4 ..... $320.85
P/N H10-13.4S (stereo) $325.50
P/N H10-13H (Helicopter, 5ft. coiled cord)..... $338.52

DAVID CLARK H10-13Y YOUTH HEADSET

Same features as the popular H10-13.4 Headset and has been especially designed to comfortably fit a child. Extremely lightweight and has a new headband assembly which allows you to adjust the headset to your child's head for a perfect fit every time. The new Super Soft Foam-filled Headpad and Flo-Fit Gel Ear Seals, also add to the headset's long-term wearing comfort. When your child grows, a conversion kit is available, to convert your H10-13Y to a David Clark Model H10-13.4

P/N H10-13Y..... $320.85
Conversion kit.....P/N 11-11950..... $29.75

DAVID CLARK H20-10 HEADSET

H20-10 headset features the Custom Comfort System which is a whole new concept in headset in comfort. Includes a headband suspension assembly that can be adjusted to a perfect comfort level, a pillow soft "floating" headpad for maximum cushioning with no hot spots, and a larger contoured Flo-Fit gel ear seals which mold softly to your head. P/N H20-10 ..... $344.10
P/N H20-16 (for helicopters)..... $357.12

DAVID CLARK DC PRO-X HEADSET

Superior technology. Super comfort. Superior performance. All in a sleek, new, supra-aural design. The new DC PRO-X from David Clark Company offers best-in-class Hybrid electronic noise cancellation and Bluetooth® wireless technology. Digital Signal Processing (DSP) provides high fidelity audio for superior communications and music listening. Dual voice coil ear phone drivers ensure fail-safe operation. And push, leatherette ear seals and head pad to cradle you in comfort. All supported by a rugged, yet feather-light magnesium alloy suspension.

PRO (Passive) ..... P/N 11-11599 ..... $347.00
PRO-X (Active) ..... P/N 11-11603 ..... $637.00
PRO XP Panel Mount..... P/N 11-12538 ..... $697.00
PRO A Passive Airbus ..... P/N 11-12539 ..... $352.00
PRO XA BNC Airbis..... P/N 11-12530 ..... $299.00

DAVID CLARK H10-56HXL HELICOPTER HEADSETS

New Comfort gel, undercut ear seals. Battery Power Module - One 9 volt battery for up to 25 hours of operation. Pilot Selectable Automatic-Shut Off Feature. Five foot (extended) coil cord terminating with a 10 pin quick release connector. Coiled cord assembly connects Battery Power Module to panel intercom/radio. Same headset can be used with optional panel mount. (H10-56HXP) Dual volume controls let you adjust the level for each ear. Exclusive, patented flex/wire boom for easy, precise microphone placement. Super soft foam filled pillow headpad. NRR - 27 dB passive noise reduction rating plus 17 dB to 22 dB when ENC is turned on. Weight (without cord assembly): 22 oz.

Description	Part No.	Price
MODEL H10-56HXL	11-03828	$773.76
MODEL H10-56HXP	11-03829	$737.49
MODEL H10-56 - Hinged wire boom with the M-101 amplified Dynamic microphone. Conforms to MIL-M-27291A. Coil Cord (5' extended) with U-174/U Plug. FAA TSO Approved C57 Cat. B and C58a. Exceeds RTCA/DO-214 Standards. Weight (without cord assembly): 20 oz.	11-03827	$350.61

DAVID CLARK H10-76 LOW IMPEDANCE HEADSET

Undercut Comfort-Gel Ear Seal for Improved Comfort. Low Impedance Most popular noise attenuating headset ever produced for use with military radios. Standard headset of the U.S. Air Force, NATO and most airborne command centers. AWAC's, under command of NATO and the United States, use the H10-76 both in the cockpit and the communication operations. Headset of choice of M.A.T.S. pilots. Also used in ground support operations. Coiled cord terminates into a U-174/U plug. P/N 11-02226 ..... $290.16

DAVID CLARK H10-13X ANR HEADSETS

The H10-13X aviation headset has the most advanced Electronic Noise Canceling (ENC) technology assuring an amazingly quiet flight. Available in the most popular and comfortable headset style. H10-13X Features: Quiet Performance —You'll hear and feel the difference immediately. When ENC is turned ON, noise cancellation actually improves by an additional 12-17 dB. That's better total protection than any other headset available today. 5 year warranty.

Outstanding Comfort - Lightweight at just 17oz. w/advanced comfort features. Super soft gel ear seals with new exclusive Velvet Fleece surface, combined with reduced headband pressure and a soft foam-filled pillow headpad create a comfort level never before experienced.

Superior Communication Intelligibility - The ENC system and the exclusive M-7A noise cancellation electret mic provide unsurpassed performance and clear, crisp transmission and reception. Stereo compatible for use with stereo intercom and cabin entertainment systems.

Model	Description	Part No.	Price
H10-13X	Fixed wing headset (ENC) with straight, 5ft. cord to Battery Power Module to straight 5ft. cord with A/C Panel-Intercom Plugs (hardwired)	11-03819	$664.95
H10-13XL	Fixed wing Headset (ENC) with straight, 5ft. cord, Snap Lock-Quick Release Connector/ Battery Power Module with mating Headset and Cord Assy Connectors/Coil Cord Assembly with mating battery connector and Panel-Intercom Plugs	11-03820	$755.16
H10-13XP	Fixed wing Headset (ENC) with straight, 5ft. cord, Snap lock-Quick Release Connector and Panel Mount Module with mating Headset Connector, on/off Toggle Switch	11-03821	$719.82
H10-13HXL	Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector/Battery Power Module with mating Headset and Cord Assy Connectors/ Coil Cord Assembly with mating battery connector and Panel-Intercom Plug	11-03817	$767.25
H10-13HXP	Helicopter Headset (ENC) with coiled, 5ft. (extended) cord, Snap Lock-Quick Release Connector and Panel Mount Module with mating Headset Connector, on/off Toggle Switch.	11-03818	$725.40

DAVID CLARK XL XP TO BOSE PANEL ADAPTER

Allows David Clark ENC headsets (XL or XP models) to be used, battery free, in an aircraft using a six connector female socket (Bose Panel socket).

P/N 11-08811 ..... $151.90

AV

DAVID CLARK HEADSETS

DAVID CLARK HEADSET H10-66LX & H10-76XL

Pilots have trusted the green domes of David Clark Company headsets for over 25 years. Their high-performance products are now equipped with several new features to enhance pilot comfort: super-soft, double-foam headpads, comfort-gel, 'undercut' ear seals, and a smaller, lighter battery pack with auto shutoff for ENC models. Find out for yourself why quality conscious pilots will accept nothing less than the #1 Headset in Aviation.

Description	Part No.	Price
H10-66XL DUAL IMPEDANCE ENC HEADSET Designed for use with both high and low impedance systems. Select switch on dome matches headset to system impedance. Ideal for fleet operations. Certified Noise Reduction Rating (NRR): 27: dB. Built in ENC technology and enhanced comfort features.	11-05427	$840.72
H10-76XL PORTABLE LOW IMPEDANCE ENC HEADSET Feature ENC technology and designed for use with low impedance systems. Coil cord with single plug connects the battery-powered module to aircraft radio or intercom. Additional 17-22 dB noise attenuation with ENC activated.	11-05428	$815.61
H10-76XP PANEL-MOUNT LOW IMPEDANCE ENC HEADSET Same as H10-76XL but with permanent panel-mount module for utilizing the aircraft's power source.	11-05429	$773.76

H10-20 HEADSET

8 new headset design advances make the David Clark H10-20 a must see. The completely flexible boom assembly can be adjusted for perfect microphone placement. The M7A microphone is the most advance noise-cancelling amplified electret mike available. Features a redesigned air-flow headband with liquid-filled ear seals for optimum comfort. Comes with volume control and a 5yr warranty. Made in the U.S.

Straight Cord ..... P/N H10-20 ..... $316.20
Coiled Cord ..... P/N H10-21 ..... $344.10
Helicopter ..... P/N H10-26 ..... $332.94

DAVID CLARK H10-30 HEADSET

This dual headset, used by the Air Force, features foam filled ear cushions with an M-1/DC amplified dynamic noise cancelling mike. With 6 feet straight cord, PJ-055B headphone plug and PJ-068 mike. plug. P/N H10-30 ..... $365.98

DAVID CLARK H10-36 HEADSET

The H10-36 headset features the M-1/DC dynamic mic and coil cord which extends to 5 ft., with U-174/U plug for helicopter installations.

P/N H10-36 ..... $283.65

DAVID CLARK H10-60 HEADSET

Features unique foam/air-flow headpad, low-pressure headband, Flo Fit Gel ear seals, and dual volume controls. Also features the M-7A advanced noise cancelling amplified electret mic. Customize your H10-60 with 3-position headset pressure adjustment, boom guide lock, headband size adjustment, and cord selection.

P/N H10-60 ..... $366.42

DAVID CLARK H10-66 HEADSET

A unique dual impedance headset for use in civilian and military style aircraft. The Model H10-66 features include new comfort gel, undercut ear seals, hinged wire boom with the M-101 amplified Dynamic microphone, and a Noise Reduction Rating (NRR) of 27 dB. P/N H10-66 ..... $398.97

DAVID CLARK H10-76 HEADSET

Undercut Comfort-Gel Ear Seal for Improved Comfort. Low Impedance. Most popular noise attenuating headset ever produced for use with military radios. Standard headset of the U.S. Air Force, NATO and most airborne command centers.Coiled cord terminates into a U-174/U plug. P/N 11-02226 ..... $290.16

DAVID CLARK H10-00 "LISTEN ONLY" HEADPHONE

David Clark comfort fit. For use w/handheld mic. With 18" coil cord which extends to 6 ft, & PJ-055B plug.

P/N H10-00 ..... $217.62

DAVID CLARK 6AA BATTERY PACK

Accepts 6 AA batteries. The protective cover keeps battery terminals from accidental contact with conducting surfaces while stored. Having a Spare Battery Cartridge, loaded and ready, will minimize time without electronic noise cancellation when batteries drain. P/N 11-02019 ..... $15.50

9V BATTERY PACK FOR ENR HEADSETS

This new XL-9V 9V battery pack is easier to operate, wear and store. It is 50% smaller and 50% lighter than previous battery packs. It runs off a single 9V alkaline battery to provide power to the headset ENC system. The XL-9V features an Auto Shut Off function to save the battery if the power switch is left on when the headset is not in use. P/N 11-01783 ..... $97.75

DAVID CLARK UNDERCUT COMFORT-GEL EAR SEALS

Ear Seals have redesigned to be softer, more supple and form fitting, with a unique "undercut" shape that provides more room for your ears. This exclusive design makes for a larger, yet lighter ear seal. This new ear seal is now standard on the entire line of DC aviation headsets. New Ear Seal Features: • 26% lighter • 60% more surface area in contact with your head provides greater comfort by dissipation of necessary headband pressure • 30% more interior volume creates more room for your ear P/N 11-01782 ..... $22.95

DAVID CLARK GROUND SUPPORT HEADSETS

Ground Support Headsets are designed to facilitate communication when background noise or distance makes it extremely difficult to communicate. During ground-support operations, communication is critical to ensure the safety of everyone in the vicinity as well as the protection of the aircraft from accidental damage.

MODEL H7010 - Noise Attenuating Headset * M-101 Noise-Cancelling Microphone * 30-inch straight cord with U174/U plug * Noise-shielded microphone (muff) with On/Off switch * Soft headpad and ear seals guarantee exceptional comfort * Snap-fastened nylon straps secure microphone muff to mouth * Corrosion-resistant, chrome plated headpad/stirrup assembly * Extremely durable and reliable * NRR 26dB

P/N 11-07116 ..... $269.95

MODEL H-133C/AIC - Noise Attenuating Headset * M-101/AIC Noise-Cancelling Microphone * 30-inch straight cord with U93A/U plug * Noise-shielded microphone (muff) * Soft headpad and ear seals guarantee exceptional comfort * Snap-fastened nylon straps secure microphone muff to mouth * Corrosion-resistant, chrome plated headpad/stirrup assembly * Heavy duty and extremely reliable * For noise levels to 140dB

P/N 11-07117 ..... $289.95

DAVID CLARK SERIES K HELMET

Series K Helmet provides the ability to convert all David Clark Over-The-Head style (Except H20-10 & H10-80) headsets into a Helmet/ Headset assembly. The Kit and a David Clark headset gives both impact and hearing protection in addition to clear, normal conversation in high noise environments. The Series K Helmet Kit consists of a helmet shell with nape pad and a helmet liner. Lightweight, the combined weight of the Helmet/Headset assembly is 42 oz.

Helmet Kit ..... P/N K10 ..... $349.00

DAVID CLARK HEADSET BAG

This ballistic Nylon Carry Bag is black on black, with the DC logo subtly embroidered in the lower right corner. This bag has been carefully chosen for its simplicity, quality and workmanship and is a fitting complement to any David Clark Headset. P/N 11-00642 ..... $19.50

AV

SENNHEISER HEADSETS

SENNHEISER S1 DIGITAL HEADSET

Sennheiser S1 Digital – The Quiet Revolution.
The Sennheiser S1 Digital aviation headset is designed to give you maximum control over noise levels in the cockpit, so you can focus on the joy of flying. At the push of a button, the S1's exclusive NoiseGard™/digital technology accurately analyzes the cockpit's noise levels to achieve superior noise cancellation during all phases of flight-from take-off to landing.
Smart adapt digital ANR customizes and optimizes noise reduction to your aircraft / your fit
Headband tension adjustment so you can choose how tight / loose you want it
Treble boost for customized audio clarity
Ear pad comfort zones reduce the squeeze on your glasses
Bluetooth connectivity for both music and cell phone
Optimized audio filters optimize clarity for communications and music

S1 Digital ..... P/N 11-09919 ..... $995.00
Headset P-XLR-3 Adaptor ..... P/N 11-10052 ..... $64.95
Headset P-CIG Adaptor ..... P/N 11-10053 ..... $74.95
S1 GA Headset Lemo Panel Mount Adaptor
P/N 11-10039 ..... $99.95

SENNHEISER S1 PASSIVE HEADSET

Highest performance, outstanding wearing comfort, feature packed, and state-of-the-art design – the new Sennheiser S1 Passive is the ultimate passive aviation headset.
Highest security is ensured by Sennheiser's renowned sound quality, ActiveGardTM and passive noise attenuation for clear communications. The auto mute function automatically switches off your music or cell phone calls during ATC communication.
Adjustable contact pressure and a special sunglass zone provide the perfect balance between comfortable fit and optimum passive noise attenuation.
The state-of-the-art design, powered by BMW Group DesignworksUSA, makes the S1 Passive as good looking as it is comfortable - even on the longest flights. ..... P/N 11-10744 ..... $369.00

SENNHEISER S1 NOISEGARD HEADSETS

Designed for use in single-engine and twin-engine propeller aircraft as well as helicopters. The combination of passive attenuation and the NoiseGard™ technology ensures a significant reduction in noise experienced by the pilot. MP3 players, mobile phones, and computers can be connected easily.

S-1 ..... P/N 11-11867 ..... $795.00
S-1R ..... P/N 11-11868 ..... $795.00

SENNHEISER HME 110 HEADSET

The HME 110 features outstanding comfort and performance with excellent passive attenuation. JTSO/TSO approval
- 10 year warranty
- lightweight 12.4oz
- Superior audio quality
- Microphone can be worn on either Left or right side.
- Up to 40 dB of passive noise attenuation.
- Stereo/mono switch.
- Highest wearing comfort

HME 110 ..... P/N 11-03589 ..... $299.00
Gel Ear Seals ..... P/N 11-01333 ..... $39.85

SENNHEISER HMEC 250 HEADSET

The HMEC 250 offers a unique foldable, Lightweight design. Best for those quieter cockpits. 3 year warranty.
- HMEC 250 is Talk-Through equipped
- ANR powered by 2 AAA batteries
- Highest wearing comfort
- Peak-Level-Protection
- Audio input for Cell/MP3
- Weight 10 oz

HMEC 250 ..... P/N 11-07030 ..... $499.00
Conformal Ear Seals ..... P/N 11-07032 ..... $25.00

SENNHEISER HMEC / HME 26 SERIES HEADSETS

The HMEC 26 is the premium headset for commercial and business aviation. It is lightweight, comfortable, and offers the best combination of ANR and passive performance for jet aircraft. The HMEC26-T is Talk-Through equipped for direct cockpt communication
- Up to 16dB ANR, and 11dB passive attenuation.
- Flip-away headphone allows single-sided listening.
- Operating time with 2 AA batteries approx. 60 hours (auto shut-off)
- Superior audio quality / modular cable concept
- BV-K model has Cell/MP3 input and volume controls
- Peak-Level-Protection eliminates volume peaks
- ETSO C57a & 58a and TSO C-139 approval / 5 year warranty

HMEC 26-B-K ..... P/N 11-07944 ..... $729.95
BV-K Cable for HMEC 26-T ..... P/N 11-08056 ..... $284.00
B-K Cable for HMEC 26-T ..... P/N 11-08054 ..... $208.00
HME 26-K passive model ..... P/N 11-07950 ..... $424.00

SENNHEISER HMEC/ HME 46-1 SERIES HEADSETS

The HMEC 46-1 is a very lightweight, on the ear design; ideal for commercial and business jets.
- Up to 16 dB ANR
- Flip-away headphone for single-sided listening.
- Operating time with 2 AA batteries approx. 100 hours (auto shut-off)
- Superior audio quality / modular cable concept.
- Peak-Level-Protection eliminates volume peaks
- BV-K model has Cell/MP3 input and volume controls
- ETSO C57a & 58a and TSO C-139 approval, 5 year warranty

HMEC 46-1-BV-K with L/R volume control ..... P/N 11-05274 ..... $696.00
HMEC 46-1-B-K ..... P/N 11-05272 ..... $521.00
HME 46-K passive model ..... P/N 11-05247 ..... $399.95
HME46 Headset Only ..... P/N 11-10466 ..... $274.00
V-K Cable Only ..... P/N 11-10467 ..... $219.00
HME46 Series Ear Cushions ..... P/N 11-10772 ..... $3.65

SENNHEISER HMEC26-2 HEADSETS

This aviation headset is lightweight closed and supra-aural with Active Noise Reduction NoiseGard™ professional. It is designed for use in commercial jets. Extremely comfortable to wear, even for extended listening, due to the two-piece automatic headband and soft ear pads. Active Noise Reduction NoiseGard™. Peak Level-Protection - safeguards you from volume peaks above 110 dB. "Flip-away" headphone allows single-sided listening. Flexible microphone boom, can be worn on either left of right-hand side. Noise-compensating condenser microphone ensures excellent speech intelligibility. Single-sided cable routing. Volume control for each channel. ETSO-approval C139. Made in Germany. 5 year warranty.

HMEC 26-2 without cable, mic sensitivity 80mV/Pa
P/N 11-11852 ..... $560.00
HMEC 26-2-1 without cable, mic sensitivity 60mV/Pa
P/N 11-11853 ..... $560.00
HMEC 26-2-T With Talk-Through-Function, without cable, mic sensitivity 60mV/Pa ..... P/N 11-11849 ..... $602.00

AV

SENNHEISER - THE PILOT STARTER KIT

The package is anchored by the Sennheiser HME 110 – an excellent passive attenuating pilot's headset with a 10 year warranty, Sennheiser quality sound, and lightweight comfort. The HME 110 weighs only 12.4 oz and provides 24dB (NRR) of passive attenuation. An integrated volume control gives the student pilot complete control of his / her hearing preferences. Also included in this package is a premium subscription (XX months) to iFlightPlanner.com's unique combination of webbased and App compatible flight planning software. Another element for the benefit of the flight student's training is the 6 month membership to AvWx Workshops. Pilotworkshops provides short, highly focused workshops specifically designed with the busy pilot in mind. Included in this package is Pilotworkshop's Airmanship course.

P/N 11-11389 ..... $431.00

SENNHEISER ACCESSORIES

Description	Part No.	Price
Donut Style Leatherette Cushions for HME/HMEC 25	11-09110	$18.00
Soft Foam Ear Pads for HME/HMEC 45	11-09109	$26.00
HME 100 Ear Pads	11-09111	$53.99
HMEC 350 Ear Pads	11-09112	$44.80
Premium Comfort Headband for HME100/350/450	11-09108	$48.75
Chin Strap for HME100/350/450	11-09113	$54.00
Boom Set Cable Holder Clip	11-09106	$16.00
Windscreen for Aviation Boom Sets	11-09104	$15.50

SENNHEISER CABLES

Description	Part No.	Price
Sennheiser Headset Cable BV-K-2	11-11856	$282.00
Sennheiser Headset Cable B-K-2	11-11857	$216.00
Sennheiser Headset Cable CP-2	11-11858	$204.00
Sennheiser Headset Cable RP-2	11-11859	$204.00
Sennheiser Headset Cable KP-2	11-11861	$204.00
Sennheiser Headset Cable V-KX-2	11-11862	$316.00
Sennheiser Headset Cable B-CP-2	11-11863	$267.00

ARCUS ANR 7 NIMBO PNR HEADSETS

Full Android/iPhone/iPad/iPod/MP3 speaker & mic integration via 3.5mm connection. (N/A for Military). Hi-Fi Ported True Stereo Speakers. Stereo / Mono switching. Dynamic Clamping for complete comfort. Weighs 14oz. Ultra Sharp Electret Noise Canceling Microphones. Advanced Inline Volume Controls with Smart Comm / Aux Control. Large Soft Head Pad. Twin Layer True Gel Ear Seals. Passive Noise Reduction: (NRR) 24dB (The most controversial number in all headsets...) Active Noise Reduction: +16dB-19dB @100Hz (Low end "droning" sounds is what ANR is for). Pilot Direct Internal Noise Cancelling System. Embedded in the ANR technology is an Enhanced Voice Intelligibility (EVI) circuit. Three-Year Unlimited Warranty. Made in USA. Meets or exceeds all CE and FCC standards.

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE LIST OF HEADSETS, PART NUMBERS, AND PRICES.

EQ-LINK WIRELESS HEADSET SYSTEM

The EQ-Link Headset offers wireless freedom in the aviation cockpit. The EQ-Link module plugs into standard general aviation inputs on the aircraft's audio panel and provides a 2.4 GHz frequency hopping link (not Bluetooth®) to the EQ-1 ANR Headset. Now you can enjoy all of the features of a premium ANR headset with none of the wires! Plug and Play operation. No installation required. The EQ-Link Headset plugs into your aircraft's audio panel just like any other conventional wired headset and can be used in combination with other brand of wired headset being used in the aircraft's intercom system. Comes supplied with EQ-1 Headset, EQ-Link wireless module, USB wall charger (with international charging adapters), USB charging cables for EQ-1 Headset and EQ-Link module.

System with Dual GA Plugs ..... P/N 11-11335 ..... $989.00
System with Helicopter Plugs ..... P/N 11-11377 ..... $989.00
Replacement Headset ..... P/N 11-11336 ..... $750.00

EQ REVERSE LINK SYSTEM

The EQ-Reverse/Link system represents a breakthrough in wireless headset communications. Now any aviation headset can have the same wireless freedom as our popular EQ-Link single headset system. The EQ-Reverse/Link system is comprised of the EQ-Link and EQ-Reverse/Link modules. Any standard aviation headset can be plugged into the Reverse/Link while the EQ-Link is plugged in to the aircraft's intercom system. A wireless link is provided by EQ-1's tried and true 2.4 Ghz, TDMA protocol, (not Bluetooth) R.F. link to provide crystal clear and interference free communications up to 30 feet away from the audio panel. ..... P/N 11-12106 ..... $919.00

EQ LINK 4 PLACE MULTI HEADSET SYSTEM

The EQ-Link module plugs into standard general aviation inputs on the aircraft's audio panel and provides a 2.4 GHz frequency hopping link (not Bluetooth®) to the EQ-1 ANR Headset. Now you can enjoy all of the features of a premium ANR headset with none of the wires! Plug and Play operation. No installation required. The EQ-Link Headset plugs into your aircraft's audio panel just like any other conventional wired headset and can be used in combination with other brand of wired headset being used in the aircraft's intercom system. Comes supplied with EQ-1 Headset, EQ-Link wireless module, USB wall charger (with international charging adapters), USB charging cables for EQ-1 Headset and EQ-Link module.

P/N 11-12107 ..... $3,239.00

EQ-1 BLUETOOTH MOBILE PHONE ADAPTER FOR EQLINK HEADSET

The EQ-1 Mobile phone adapters will allow EQ-Link users to answer and send mobile phone call directly from their EQ-1 Wireless Headset.

P/N 11-12031 ..... $217.00

AVCOMM HEADSETS

A new, intercom-powered hands-free LED flashlight that's built into the headset microphone. Never require batteries. Provides power to the LED's without a battery pack! Has a backup power system that provides 30 minutes of power in case of power failure. Integrated version powered by the aircraft intercom system (No battery pack required)

AVCOMM AC-747FL HEADSET - Comes with GA and Helicopter cords Key Features: Ships Power FLITELite - no battery pack or wires required! Exclusive PNR technology and "plug and fly" design. Full flex boom Ultra-lite micro samarium cobalt speakers. Each ear cup features an independent volume control. M-60 microphone with active filtering chip Deluxe Comfort Package included Full five-year factory warranty Converts easily by plugging in either the general aviation straight cord or the helicopter coil cord (both included with the headset). FACTORY INSTALLED • Stainless steel headband with easy thumbnut adjustment • Deluxe comfort headpad • Acoustic foam earseals ALSO INCLUDED • 100% cotton ear covers • Acoustic mic muff..... PN 11-05606 ..... $299.95

AVCOMM AC-900 FL HEADSET - Exclusive patented PNR™ (passive noise reduction) technology. Key Features: Patented PNR™ audio technology and full spectrum stereo response Ultra-lite Neodymium speakers M65 microphone with "active filtering" chip. Full flex boom Built-in push-to-talk. Mono-stereo switch built into the cord Each ear cup features an independent volume control Deluxe gel ear seals Full five-year warranty. Gold plated mic and headphone plugs

AC-900 Standard..... PN 11-02263 ..... $260.73
AC-900 with Bluetooth..... P/N 11-10870 ..... $368.98

AVCOMM AC-200 PNR™ HEADSET - Simple and affordable PNR™ performance. Incredible voice clarity. Ultra-lite micro samarium cobalt speakers. Acoustic foam ear seals and acoustic mic muff. M-60 microphone with active filtering chip. Lighter weight; weighs only 13.4 oz. Full five-year factory warranty.

AC-200 PNR™ Standard ..... P/N 11-02259 ..... $125.46
AC-200 PNR™ with Bluetooth ..... P/N 11-10869 ..... $279.95

AV

HEADSETS INC. HEADSETS

HEADSETS INC.-1001 PNR HEADSET

• 24dB NRR hearing protection • Noise-canceling electret mic • Rugged Mil-Spec cabling • Dual volume control • New Full flex boom • Wide comfort foam ear seals • Cotton cloth ear covers • Available in black or white. • Weight 14.5 oz. • 3 year factory warranty The Headsets Inc.-1001H is available with Foam Ear Seals, Gel Ear Seals, or in a Bundle. Bundle includes: Gel Ear Seals, Soft Top Headband, and Cloth Ear Covers.

Headsets Inc.-1001B Black PNR Headset.....P/N 11-06494.....$117.75
Headsets Inc.-1001BG Black PNR Headset with Gel Seals
P/N 11-09564.....$119.00
Headsets Inc.-1001B PLUS Black PNR Headset Bundle
P/N 11-10408.....$145.00
Headsets Inc.-1001W White PNR Headset.....P/N 11-09497.....$117.75
Headsets Inc.-1001WG White PNR Headset with Gel Seals
P/N 11-09565.....$119.75
Headsets Inc.-1001W PLUS White PNR Headset Bundle
P/N 11-10410.....$145.00
Headsets Inc.-1001TG Tan PNR Headset.....P/N 11-10086.....$115.00
Headsets Inc.-1001T PLUS Tan OND Headset with Bundle
P/N 11-10409.....$145.00
Headsets Inc.-1001H Black Heli. Headset.....P/N 11-08228.....$129.00
Headsets Inc.-1001HG Black Heli. Headset with Gel Seals
P/N 11-09622.....$137.95
Headsets Inc.-1001BH PLUS Black Heli. Headset with Bundle
P/N 11-10411.....$149.00
Headsets Inc.-1001WH White Heli. Headset.....P/N 11-08223.....$140.99
Headsets Inc.-1001WHG White Heli. Headset with Gel Ear Seals
P/N 11-09620.....$116.95

HEADSETS INC.-4001 STEREO PNR HEADSET

• 24dB NRR hearing protection • Noise-canceling electret mic • Rugged Mil-Spec cabling • Dual volume control stereo • Pillow top head pad • New Full flex boom design • Gel ear seals • Cotton cloth ear covers • Wind block mic muff • Weight: 15 oz. • 3 year warranty Headsets Inc.-4001 the affordable aviation industry leader.

Headsets Inc. 4001PNR Headset Black.....P/N 11-08093.....$167.95
Headsets Inc. 4001 PNR Headset White.....P/N 11-09566.....$167.80

HEADSETS INC.-6001 ANR HEADSET

• Powerful ANR performance • Noise-canceling electret mic • Rugged Mil-Spec cabling, chrome plated plugs • Dual volume control stereo • Pillow top head pad • New Full flex boom design • Gel ear seals • Wind block mic muff • Auto shut-off battery pack • Auxiliary power input jack • 20-hour battery life • Weight: 16.5 oz. • 3 year warranty • D3P01 Personal Headset Bag.

Headsets Inc. 6001B ANR Headset Black.....P/N 11-08094.....$379.00
Headsets Inc. 6001T ANR Headset Tan.....P/N 11-10074.....$399.00

ANR KIT FOR SHALLOW CUP HEADSETS

All the components needed for David Clark 13 series headsets and others that have shallow depth ear cups. MX modules (reduced height for shallow cups) containing Audio Speaker, ANR speaker, Sensing microphone and control board. Assembly parts containing wire, solder, tie wraps, shrink tubing and Aramid pads. Pink foam strips for Passive noise attenuation. Power cable 72" long to connect battery box to ANR system. Crossover cable to replace existing cable on headset. Standard Battery box to power ANR system. Uses (1) 9 volt transistor battery.
P/N 11-12165.....$159.00

ANR KIT M-003-A FOR STANDARD HELMET

All the components needed to install ANR into your flight helmet. Standard modules containing Audio Speaker, ANR speaker, sensing microphone and control board. Assembly parts containing wire, solder, tie wraps, shrink tubing and Aramid pads. Gray foam strips for passive noise attenuation. Power cable 72" long. Helmet Gel ear seals. Crossover cable to replace existing cable on headset. Standard Battery box to power ANR system. Uses (1) 9 volt transistor battery. P/N 11-12166.....$186.75

HEADSETS INC. ACCESSORIES

GEL SEALS - Add all-day comfort with a pair of Deluxe silicone gel ear seals with the industry's first double bump design to keep the gel in place. Other gel seals tend to squash out over time. Deluxe gel seal will block out noise for increased noise reduction. Fits Headsets Inc. and other top brand general aviation headsets.....P/N 11-06496.....$20.75

PILLOW TOP HEADPAD - Enjoy your flight with Pillow Top headpad. 100% sheepskin eliminates the pressure on the top of the head. Made to fit all general aviation, over-the-head headsets with 5/8" headbands.....P/N 11-06495.....$25.80

HEADPAD FOR 6001 HEADSET - Extra padded head pad for the Headsets Inc.-6001 headset
P/N 11-09580.....$17.75

FOAM EAR SEALS - Fits Headsets Inc. and other top brand general aviation headsets.....P/N 11-07366.....$12.50

CLOTH EAR COVERS - Great for comfort and hygiene! The cool cotton comfort improves the tactile quality of any ear seal. Easy to install, absorbs perspiration, and completely washable. These covers fit all general aviation headsets.
P/N 11-07367.....$4.95

MIC MUFF - This mic muff attaches easily, includes the o-ring retainer, improves transmission while eliminating wind noise, and protects the mic from moisture and dust. It is completely washable and fits all general aviation headset microphones.
Mic Muff.....P/N 11-06497.....$3.55
Mic Muff Large.....P/N 11-08230.....$3.75

GENERAL AVIATION TO HELICOPTER ADAPTER - General Aviation to Helicopter Adapter converts general aviation application to helicopter.....P/N 11-09583.....$53.75

ELECTRET MICROPHONE FOR HEADSETS INC. 1000/4000/6000, D502- BNC clear hear electret microphone.
P/N 11-06501.....$24.85

AUTO SHUT-OFF BATTERY BOX FOR HEADSETS INC. 6000 ,D700 - Will extend the battery life by automatically turning off after 4 minutes of inactivity. The flashing LED acts as a reminder.
P/N 11-07179.....$19.75

POWER SUPPLY FOR PANEL MOUNT HEADSETS INC. 6000, D800 - For 12V or 24V aircraft. You can save on batteries by powering the ANR system from aircraft power. Has 2 voltage regulators, a DC-DC converter for isolation, and an in-line 1/4 amp fuse. Specify 12 or 24 volt aircraft when ordering.....P/N 11-07180.....$45.50

VOLUME KNOB - This Volume Knob is used on all models of Headsets Inc. headsets. P/N 11-09587.....$1.50

HEADSET THUMBSCREW - This black threaded thumbscrew allows adjustment of the headband on all model Headsets Inc. headsets. P/N 11-09588.....$4.50

HEADSETS INC.-1000/6000 CLAMP JOINT BRACKET - The clamp joint bracket mounts under the headset thumbscrew and holds the crossover cable in place when adjusting the headband. P/N 11-09589.....$0.50

HEADSETS INC.-1000/6000 STIRRUP CLAMP - The Stirrup Clamp is adjoined to the stirrup and holds the crossover cable in place along the stirrup on each side of the headset.
P/N 11-09590.....$0.50

DUFFEL STYLE FLIGHT BAG D3002- Six compartments, dual zippered flap on the center compartment with a Velcro ® strip. On each end has a zippered pocket, and two smaller acces compartments
P/N 11-07373.....$33.85

PERSONAL HEADSET BAG, D3P01 -
P/N 11-07784.....$17.95

AV

FLIGHTCOM HEADSETS

FLIGHTCOM CLASSIC ANR HEADSET

Flightcom's Classic ANR Headset is built with comfort features not found in similar headsets. With overstuffed Confor® foam ear seals and larger than normal headband, the classic aviation style provides extended comfort and performance. Comfort: Classic ANR's Confor® Foam ear seals, and a wide polar fleece headpad ensure comfort. Innovation: A volume control on each dome allows for independent adjustment. Noise reduction: We keep it quiet with our advanced hearing protection technology. Confor® Foam ear seals effectively block out sound. Noise reduction rating is enhanced by 14 to 18 dB at certain key low frequencies. Comes with a durable nylon carry case

• Precision flex boom with noise canceling electret microphone • 9-volt battery • Chrome headband with a washable polar-fleece headpad • Stereo/mono switch ensures audio compatibility • Mic muff and carrying case included • In-line, "drop-and-go" • Provides an additional 14-18dB noise attenuation at key low frequencies • Weight: 17.9 oz. • Dual-volume controls allow for independent volume adjustment in each ear dome • 3-year warranty ..... P/N 11-01326 ..... $329.00

FLIGHTCOM DENALI D30SP

At 11 ounces, this fixed-wing headset is the lightest model available. Denali's ComLeather™ ear seals help abate noise and offer a comfortable fit. The sleek ear domes stay securely in place, reducing side force. Passive 21dB NRR rating. P/N 11-10820 ..... $268.00

FLIGHTCOM DENALI D30MPH

At 11 ounces, this helicoptor-compatible headset is the lightest model available. Denali's ComLeather™ ear seals help abate noise and offer a comfortable fit. The sleek ear domes stay securely in place, reducing side force. Passive 21dB NRR rating.

P/N 11-10819 ..... $308.00

FLIGHTCOM 5DX CLASSIC

This headset provides supreme comfort and fit through its washable polar fleece headpad, silicone gel ear seals and cloth ear seal covers. Features include noise cancelling electret microphone, precision flex boom, dual volume controls, stereo/ mono switch, 22dB noise reduction rating and all top quality components. Wt 17.9oz. 3-yr factory warranty P/N 11-08760 ..... $159.00

FLIGHTCOM 4DLX CLASSIC

This headset combines the proven performance and affordability of the popular 4DX Classic headset with the comfort of the "air pillow" headpad. Features of the 4DLX Classic include combined foam and liquid ear seals, precision flex boom, noise cancelling electret microphone, stereo/mono switch, cloth ear seal covers, mic cover and 3-yr factory warranty. 24dB noise reduction rating Wt 16.8oz P/N 11-17115 ..... $119.00

FLIGHTCOM E-13 PASSIVE MILITARY HEADSET

For rugged cockpit environments. Standard comfort features include protein leather covered dual density foam ear seals and washable polar fleece headpad • In-line quick disconnect jack on the mic boom for chemical defense suit and boom replacement • Dome-mounted volume control • DO-160D tested ? environmental and explosive proof • Passive noise attenuation 21dB NRR. Two-year warranty.

P/N 11-10395 ..... $266.95

FLIGHTCOM DENALI D50ANR HEADSET

At less than 14oz, this headset is the lightest ANR model available. Denali's ComLeather™ ear seals help abate noise and offer a comfortable fit. The sleek ear domes stay securely in place, reducing side force. This ANR model also has SPS – a digital power management circuit. The SPS conserves battery life by shutting off the ANR circuit when not in use. Full passive performance is maintained when the ANR circuit is off. ANR model achieves additional 18-20dB at certain key low frequencies. P/N 11-10818 ..... $399.00

FLIGHTCOM DENALI D90ANR HEADSET

At less than 14oz, this headset is the lightest ANR model available. Denali's ComLeather™ ear seals help abate noise and offer a comfortable fit. Includes dual inputs that support cell phone and Aux connections for communication and entertainment. Automatic muting ensures that all incoming transmissions are instantly heard. Uses two always available AA-size batteries for up to 50 hours of continuous ANR use. Also has SPS – a digital power management circuit. The SPS conserves battery life by shutting off the ANR circuit when not in use. Full passive performance is maintained when the ANR circuit is off. ANR model achieves additional 18-20dB at certain key low frequencies. P/N 11-10817 ..... $538.00

FLIGHTCOM 4DX CLASSIC

The 4DX Classic is an entry-level headset with classic Flightcom ruggedness. With an easy-to-position wire articulated boom and a ventilated foam rubber headpad and combined liquid and foam ear seals, the 4DX Classic is comfortable and affordable. Noise canceling electret microphone • Single-volume control • Stereo/ mono switchable • NRR 24dB • Weighs 16.9 ounces • Mic muff and cloth ear seal covers included • Three-year warranty

P/N 11-17110 ..... $99.00

FLIGHTCOM E-13 ANR MILITARY HEADSET

Newly designed battery box includes SAT/cellphone support, auxiliary input and improved battery monitoring. Active Noise Reduction (ANR) provides an additional 14-18dB noise attenuation. ANR is powered by two "AA" batteries providing up to 50 hours average operation. Approved for use on USAF KC-135, C-5 and C-130 (all types except "J"). USMC approved. Includes carrying case. Two-year warranty P/N 11-10396 ..... $729.95

ACCESSORIES

AV

P/N 11-07371

P/N 11-08765

P/N 11-08317

HEADSET BAG - Padded nylon headset bag with 2 chart-size mesh pocket ..... P/N 11-07371 ..... $18.95
COMFORT SEALS ..... P/N 11-17130 ..... $38.75
GEL-FLO SEALS ..... P/N 11-17135 ..... $48.50
LEATHER EAR SEALS - 103-0019-10 Protein Leather Ear Seals. Fits all Denali headsets. ..... P/N 11-05947 ..... $46.50
CLOTH EAR SEAL COVERS - Fits dome style headsets 4DX, 4LX, 4DLX, & 5DX. ..... P/N 11-08467 ..... $15.65
POLAR FLEECE HEADPAD - Fits 4DX, 4DLX, 5DX & Classic ANR. Velcro closure. ..... P/N 11-08313 ..... $25.75
DENALI HYGIENE KIT - Ear seals, headpad and mic muffs. ..... P/N 11-04855 ..... $65.80
5DX HYGIENE KIT - 2 gel ear seal, 2 cloth ear seal covers, 3 mic muffs and 3 securing o-rings ..... P/N 11-08592 ..... $27.80
A9 MIC - Eliminates distortion and background noise, provides enhanced voice clarity. ..... P/N 11-08765 ..... $51.75
LARGE MIC MUFF ..... P/N 11-17649 ..... $12.50
SMALL MIC MUFF - With o-ring (3 pk). For use on F20 ..... P/N 11-08591 ..... $11.50
POLAR FLEECE HEADPAD - Fits 4DX, 4DLX, 5DX & Classic ANR. Velcro closure. ..... P/N 11-08313 ..... $25.75
FLIGHTCOM COPILOT TRANSMIT CABLE - Requires separate PTT. (Not compatible with iNova.) ..... P/N 11-08309 ..... $11.75
FLIGHTCOM CIG LIGHTER ADAPTER - Adapter to power intercom from aircraft power ..... P/N 11-08310 ..... $12.60
PTT SWITCH GOLD - Push-to-talk switch with durable gold contacts ..... P/N 11-08311 ..... $37.55
FC-06 MIC Y ADAPTER - Allows pilot and copilot to share a single Mic jack. Req. separate PTT for each position. P/N 11-08314 ..... $18.50
COMFORT PAD- For 4DX, 4DXL, & 5DX ..... P/N 11-08851 ..... 2.95
FLIGHTCOM CAP - Black with White logo lettering ..... P/N 11-08825 ..... $14.00
4 PLACE JACK PACK - Switchcraft mic and stereo headphone jacks & hardware to install up to four positions. ..... P/N 11-08315 ..... $78.85
FLIGHTCOM FC-07 GA TO HELICOPTER ADAPTER - Dual plug to single plug adapter ..... P/N 11-08316 ..... $78.95
OPEN COCKPIT MIC MUFF - High density muff installs over existing muff on Classic headsets to block wind noise. ..... P/N 11-08317 ..... $16.70

FLIGHTCOM COMBO PACKAGES

These combination packages offer extra savings as well as a pre-packaged set which includes two headsets, an intercom and a push to talk switch.

Ask for quote on any unlisted headset/intercom combo.

Combo#	Description (Combo includes:)	Part No.	Price
1A	2 Flightcom 4DX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch	11-08705	$291.95
1B	2 Flightcom 4DX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch	11-08706	$331.95
3A	2 Flightcom 4DLX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch	11-08707	$321.95
3B	2 Flightcom 4DLX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch	11-08708	$360.95
3C	2 Flightcom 5DX hdsts, (1) IISX 2 pl. intercom & (1) P-T-T switch	11-08717	$398.95
3D	2 Flightcom 5DX hdsts, (1) IISX 4 pl. intercom & (1) P-T-T switch	11-08718	$437.95

TELEX HEADSETS

TELEX ASCEND ANR DELUXE HEADSET

Ascend is ideal for commercial pilots with diverse needs and discerning standards. A simple procedure allows you to change the connector, remove the boom, or add a battery. Ascend's advanced noise reduction system specifically targets common cockpit noises, such as wind noise and avionics cooling fans. Improves upon the Active Noise Reduction in the popular ANR 500 & 850 models and the passive noise reduction of the Airman 850. ANR power can be delivered without batteries through the mic plug, or with the convenient rechargeable battery module. Rechargeable long-lasting battery

Ascend with PJ Connectors ..... P/N 11-08535 ..... $575.00
Ascend with XLR (Airbus type) Connectors ..... P/N 11-08574 ..... $595.00

Accessories

Ascend Carrying Case ..... P/N 11-08564 ..... $27.50
Ascend Temple Pad PAD ..... P/N 11-08565 ..... $10.90
Ascend Filler Module ..... P/N 11-08566 ..... $18.50
Ascend Audio Input Cable ..... P/N 11-08567 ..... $52.99
Ascend International Power Adapter ..... P/N 11-08568 ..... $24.75
Ascend N. America Battery Charger ..... P/N 11-08569 ..... $75.85
Ascend Battery ..... P/N 11-08570 ..... $55.75
Ascend Headband Pad ..... P/N 11-08571 ..... $14.50
Ascend Mic. Windscreen ..... P/N 11-08572 ..... $8.85
Ascend Ear Cushion (pair) ..... P/N 11-08573 ..... $34.50

TELEX ECHELON 20 AVIATION HEADSET

Designed for students, new pilots, and value-conscious experienced fliers. Offers comfort, excellent hearing protection and value. Provides an impressive 20+ dB of passive noise protection and a top-quality noise canceling electret microphone. A low-profile headband for even weight distribution plus patented ComfortCam™ technology, a three-click tension adjustment system for a custom fit. Special earpieces with foam ear-seals pivot two ways to conform to any wearer while detent sliders adjust the headband.

P/N 11-04564 ..... $189.00

TELEX ECHELON 25XT HEADSET

Includes Telex's innovative cell phone/MP3 adapter that allows you to attach both your cell phone and MP3 player at the same time. Features a plush, thick foam headband pad and newly designed, more comfortable ear cushions. Individual volume controls for each ear cup and a stereo/mono select switch. Impact-Resistant Headband Design. Flight Bag. Weight: 13.6 oz/386 grams P/N 11-04563 ..... $329.00

TELEX STRATUS 30XT

Allows you to power the headset from the aircraft panel, standard alkaline batteries, or rechargeable batteries. A built-in battery recharger that recharges when plugged into a wall socket, the aircraft's panel power or even your car's 12-volt power outlet. Ensures more than 50 hours of battery life. Telex's patented ComfortCam™ to eliminate clamping. A unique headband construction that distributes weight evenly for a perfect fit, plus thick foam headband pad. Telex's innovative cell phone/MP3 adapter which allows you to attach both your cell phone and MP3 player at the same time. Flight Bag. Weight: 14.2 oz/403 grams. Runs on 2 AA batteries

30XT headset ..... P/N 11-04561 ..... $575.00
AC/DC 30XT Adapter ..... P/N 11-04576 ..... $22.50

STRATUS™ 50-DIGITAL ANR HEADSET

Cuts noise 3 ways by providing 24dB passive attenuation for high frequency noise outside the ANR range, 15dB of analog ANR for noise reduction below 1000 Hz, and up to 50dB of digital tonal noise reduction. DSP (Digit Signal Processing) allows the Stratus to predict recurring cabin noise and fine tune the Active Noise Reduction for the ultimate in hearing protection. Patented Comfort Cam™ tension adjustment allows for a custom fit, as do the heat sensitive slow recovery foam ear cushions, which conform to the user's head during wear. Extra thick cushions and pad reduce headband tension and provide a luxurious feel. Overmolded rubber earcups, volume control knobs and comfort cams offer ease of handling, and add to the comfort package. Features • Capable of battery or panel power Stereo/mono switch • Auto shut-off feature saves battery • Dual volume controls • Reversible mic for pilot/copilot operation • 18 oz. • Collapses for ease of portability. • Incl. Deluxe carrying case

P/N 11-04560 ..... $675.00

TELEX STRATUS 30

Combines superior ANR protection, a noise-canceling electret microphone, and fully adjustable boom. Include Telex's patented ComfortCam™ technology that allows you to quickly and easily control the tension of the ear cups. Low profile headband. Utilizes impact-resistant headband design with stainless steel reinforced stress points. Cell Phone/Audio Adapter. Advanced Microphone Technology. Boom Microphone. Flight Bag. Weight: 14.2 oz/403 grams. Runs on 2 AA batteries. P/N 11-04562 ..... $482.00

TELEX AIR 3100 HEADSET

The new Telex AIR 3100 is a medium weight headset (15 oz) which is extremely comfortable because of a unique headband knuckle design that distributes ear cushion pressure evenly over the entire ear circumference with no pressure point. Earcup tension is adjustable for preferred balance between noise reduction and comfort. The electret mic is mounted on a fully adjustable and hinged boom. The AIR 3100 replaces the D950 and E951 Telex headsets, and is collapsible for compact storage.

P/N 11-09440 ..... $281.95

TELEX PRO III 5X5 HEADSET

This headset from Telex features a single side soft ear tip receiver with superior noise cancelling amplifier. The electret microphone is fully adjustable for use on the right or left side. Order push-to-talk switch for aircraft not so equipped.

P/N 11-09600 ..... $259.00

TELEX AIRMAN 750 HEADSET

A featherweight headset which is the lightest in the industry (2.5 oz.). Features a miniature noise-cancelling electret microphone that provides superior 400 Hz hum rejection. Microphone pivot arm pivots 310° for use on left or right side. The optional Telex PT-300 push-to-talk switch is recommended for use with the Airman 750. P/N 11-09500 ..... $245.00
Airman 750 Airbus plug P/N 11-09302 ..... $255.00
Foam Ear Cushions for 750/760 ..... $5.99

TELEX AIRMAN 750 SINGLE-SIDED HEADSET

The Airman® 750SS is 25% lighter than the Airman® 750. Its effective weight (without the cord) is only 2.4 oz. Many pilots prefer the ergonomics of a single sided headset. It eliminates the need to pull off one of the earphones when listening to cockpit conversations.

P/N 11-01123 ..... $225.00

TELEX AIRMAN ANR 850

Uses Active Noise Reduction technology to provide up to 12dB of noise attenuation ensuring the clearest in-flight communication. Weighs less than 4 oz. Combines "set and forget" volume control with never worrying about a battery pack. Power to the ANR is provided by mic bias (active intercom) eliminating the need for battery packs or panel power. By drastically reducing wind noise in jet cockpits, the Airman ANR 850 helps to reduce fatigue. The Telex Airman ANR 850 is unsurpassed in clarity, comfort and convenience. ..... P/N 11-01880 ..... $450.00
Telex Airman ANR 850 (Airbus Application) ..... P/N 11-05464 ..... $445.00
Telex 850 Leather Ear Seals ..... P/N 11-04332 ..... $27.95

TELEX HEADPHONES

TELEX AIRMAN 760 HEADPHONE - A featherweight headphone unit designed for use with hand-held microphones. For long term comfort, an adjustable clothing clip removes the cord weight from the head of the user.

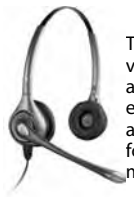
P/N 11-09300 ..... $93.75

TELEX ACCESSORIES

Windscreen (750,Pro III,ANR500) ..... P/N 11-01112 ..... $8.50
Cushions (750, 760) ..... P/N 11-01113 ..... $5.99
Gel cushion-Full cushion headsets ..... P/N 11-01114 ..... $39.95
Windscreen-Full cushion headsets ..... P/N 11-01115 ..... $8.85
Foam Cushion - Full cushion headset ..... P/N 11-01117 ..... $23.50
Mic Muff for Dynamic mic ..... P/N HS036.1 ..... $3.95
Air 3000/ ANR 4000/ Echelon 150 ..... P/N 11-09445 ..... $40.00
ANR 500 Foam Ear Seals ..... P/N 11-04565 ..... $29.50
ANR 3500 Gel Ear Seals ..... P/N 11-12529 ..... $38.95
Air 3000/3100/3500 Foam Ear Cushions ..... P/N 11-12528 ..... $21.95

AV

HEADSETS – SPORT-LINK HEADSETS/HELMETS



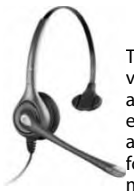
PLANTRONICS MS260 HEADSET

The Plantronics MS260 commercial aviation headset leverages a proven design to set new standards in comfort and reliability for pilots. The noise-canceling microphones enable clear, uninterrupted communications between air and ground. The over-the-head design offers a stable fit for extended wear, and is available in single or twin ear models. ..... P/N 11-08904 ..... $208.95

MS200 PLANTRONICS HEADSET

Combines a unique lightweight design and advanced technology to deliver the ultimate in comfort and reliability. The noise-canceling microphone enables clear, uninterrupted communications between air and ground. Its compact under-the-ear design ensures a secure, comfortable fit for extended wear, yet is convenient to carry and stow. Features: * Hear every word through superior audio quality * 5-foot cord with one each PJ055 and PJ068 plug. * FAA approved

M200 Headset Dual Plugs ..... P/N 11-07311 ..... $145.95
MS200 For Airbus ..... P/N 11-08905 ..... $189.95



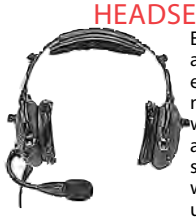
PLANTRONICS MS250 SINGLE SIDE HEADSET DUAL GA PLUGS

The Plantronics MS250 commercial aviation headset leverages a proven design to set new standards in comfort and reliability for pilots. The noise-canceling microphones enable clear, uninterrupted communications between air and ground. The over-the-head design offers a stable fit for extended wear, and is available in single or twin ear models. ..... P/N 11-08903 ..... $169.00

NAV-DATA DELUXE HEADSET

The Nav-Data Technologies deluxe headset has one of the best passive noise reduction ratings of any headset available at any cost. There are many reasons to own the Nav-Data Headset :

* Switch selectable stereo or mono operation * Dual volume controls * Gel earseals for extra comfort and noise attenuation * Super padded head band for comfort during long flights * Full flexible mic boom - stays where you put it! * Noise canceling electret mic * Weighs only 14.3 ounces P/N 13-06087 ..... $96.75



HEADSETS, INC. EM-1 ANR HEADSET

EM-1 features conservative dark green ear cups, an Oregon Aero SoftTop padded headband, gel ear seals, and place-it-anywhere mic boom which makes it ergonomically friendly. Stereo capable with individual volume controls for each ear and a switch on the cord for mono or stereo audio. A separate battery box is used and shares a cord with the mic/phone jacks, eliminating the need to unite 2 separate cords. Cords separate at the end so you can find a convenient place to stow the battery box in the cockpit. Optional power sources allow to be powered by the aircraft's electrical system, a cigarette lighter, or rechargeable battery. Comes with a 3-yr warranty, headset bag, the Oregon Aero SoftTop, & gel ear seals.

P/N 11-00512 ..... $359.00

SUPER SOFT TOP FOR HEADSETS

The Super Soft Top headset is the ultimate in comfort. Put this headset on and feel the difference! It contains two layers of foam and one layer of polyester wool that is covered with a 90% cotton fabric for maximum humidity absorption. Easy to install, it fits the following headsets: • All David Clark models, (except DC20-10 series) • All Pilot Avionics models, (except PA-1776, PA-1779,Premier,Concord HNE,& Commander series) • All Marv Golden MG's * All Sigtronics • All ASA's * All Softcom's • All Flightcom models (except F-20 & Eclipse) P/N 13-00358 ..... $15.99

HEADSET COMFORTOP

Replaces the original head pad with a sheepskin pad providing optimum comfort.

P/N 11-03014 ..... $28.75

PILOT'S HEADSET CUSHION

Constructed of plush 3/4" thick sheepskin & genuine leather. Does your headset feel uncomfortable and create a sore spot on the top of your head after wearing it for just a short time? If so, you need our plush, super soft sheepskin and leather headset cushion! The soft sheepskin rests on your head instead of the uncomfortable headset pad. Designed to fit all headsets with it's adjustable velcro closure. Extra velcro across top also holds your flashlight for nighttime flying. Relieves all contact and pressure on the top of your head for even the longest trips. P/N 13-40730 ..... $15.90

SPORT-LINK THUNDER HEADSET

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1303-2 LSA - Comm/Stereo/Dynamic
P/N 11-07908 ..... $257.55
1303-3 LSA - Comm only / Electret
P/N 11-07909 ..... $239.15
1303-4 LSA - Comm only / Dynamic
P/N 11-07911 ..... $239.15
1303-10 GA-Comm/Stereo/Electret ..... P/N 11-07913 ..... $257.55
1303-11 GA-Comm/Stereo/Dynamic ..... P/N 11-07914 ..... $257.55
1303-12 GA-Comm Only/Electret ..... P/N 11-07915 ..... $239.15

SPORT-LINK HEADSETS

Single Headset, Electret ..... P/N 11-05330 ..... $217.07
Single Headset, Dynamic ..... P/N 11-05329 ..... $192.23
Headset, General Aviation ..... P/N 11-05337 ..... $244.64
Dual Headset System, Electret ..... P/N 11-05338 ..... $616.35

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Dual Helmet System, Electret ..... P/N 11-05496 ..... $947.55
Dual Helmet System, Dynamic ..... P/N 11-05497 ..... $708.35
Single Helmet System, Electret ..... P/N 11-05498 ..... $340.35
Single Helmet System, Dynamic ..... P/N 11-05499 ..... $289.75

SPORT-LINK DETACH HELMET SYSTEM

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GA Detach Helmet - Lynx ..... P/N 11-09183 ..... $256.68
GA Detach Helmet - Rad ..... P/N 11-09184 ..... $256.68
GA Detach Helmet - Pilot USA ..... P/N 11-09185 ..... $256.68
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C1 Single Helmet only, Electret
P/N 11-05409 ..... $394.68
C1 Single Helmet only, Dynamic
P/N 11-05410 ..... $344.95
C2 Single Helmet only, Electret
P/N 11-05411 ..... $395.55
C2 Single Helmet only, Dynamic ..... P/N 11-05412 ..... $386.35
Single Face Shield (C1) ..... P/N 11-05413 ..... $27.55

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Description	Part No.	Price
Icom A4, A3, A22, A24, A6 PTT	11-05331	$86.43
Icom A5, A23 PTT	11-05332	$86.43
JRC/Icom A20, A21 PTT	11-05333	$75.39
FRS / GMRS PTT (dual plug version)	11-05334	$75.39
General Aviation PTT - shielded	11-05335	$33.07
General Aviation PTT - unshielded	11-05336	$25.71
Cell Phone Cord	11-05415	$31.23
Music Cord	11-05417	$16.51
Power Cord	11-05414	$10.07

SPORT-LINK ACCESSORIES

Description	Part No.	Price
Intercom - Pac	11-05419	$30.31
Speaker, Extended range	11-05420	$27.55
Mic. Boom	11-05421	$16.51
Dynamic Mic.	11-05422	$45.95
Electret Mic.	11-05423	$68.50
Electret Noise Cancelling Mic.LB1	11-09624	$56.85
Electret Noise Cancelling Mic.LB2	11-09625	$56.85
Heavy Duty Wind Screen	11-05424	$9.15
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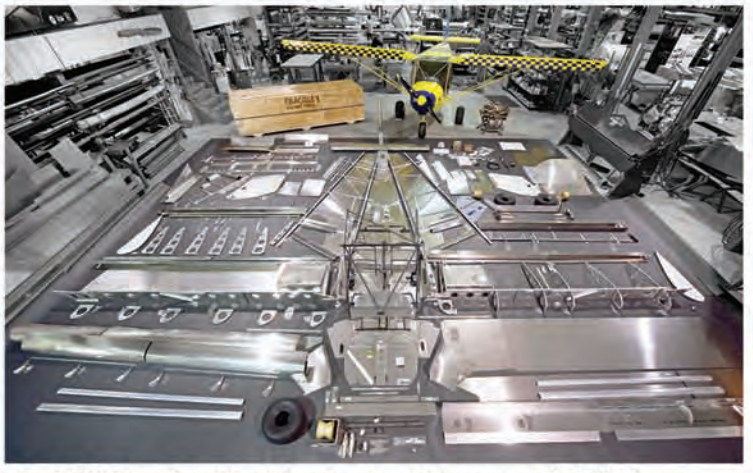

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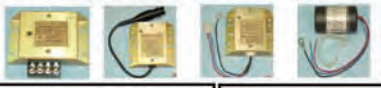

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28V Alternator Controller

For Cessna.

Voltage Regulator, Low-OV Sensor/Indication, Field-to-Ground Short Protection, OV Protection & Trouble-Shooting Light (TSL)

FAA-PMA **R15V0L**
14V Alternator Controller

For Piper, Bellanca, Maule, Beech, Commander, & Grumman Aircraft

Voltage Regulator, OV Relay, GFP, & Trouble-Shooting Light

Additional features on other FAA-PMA, Experimental & UAV Alternator Controllers: Alternator Out Sensing, Battery Off-Line Failure Regulation, Lightweight Design, Auto-Paralleling/Load Sharing, Alternator Disable & Reset, Line Contactor Control, Light Control and more…

We Accept VISA MasterCard DISCOVER AMERICAN EXPRESS

3M™ PELTOR HEADSETS – PILOT USA

3M™ PELTOR™ DIGITAL WORKTUNES

Worktunes is a self-contained AM/FM noise attenuating headset (NRR 26db) which provides hearing protection combined with an AM/FM radio to provide. Features include: • Easy finger tip controls • 5 preset stations • Volume limited to a safe 82 dB level • Gel/Foam cushions • MP3 cord included • Peltor™ stainless steel spring arm headband provides even pressure all day. • Wide, soft padded headband, flexible antenna. • Quick and easy tuning and volume adjustments P/N 11-01589 ..... $85.75

3M™ PELTOR™ EARMUFFS

The only muff that lets workers listen safely without removing their muffs. When workers lift their muffs, they lower their protection. Now Peltor™ puts safe listening at their fingertips. Just push the button on the PTL muff and speech & sounds "outside" the muff cup can be heard "inside"--clearly and safely. After 30 seconds, the muff automatically returns to its full protection with an NRR of up to 26 dB. Listen again? Just push again. It's that simple. P/N 11-04310 ..... $27.50

3M™ PELTOR™ AVIATION HEADSET ACCESSORIES

Deluxe Carrying Bag ..... P/N 11-01586 ..... $34.75

3m Peltor Foam Liquid Seal Ring Replacement - sold as a pair
P/N 11-01587 ..... $18.50

Gel sealing cushions - sold as a pair ..... P/N 11-01588 ..... $50.50

Mic Muff for MT22/MT24 ..... P/N 11-18535 ..... $11.85

Peltor™ Microphone Windscreen ..... P/N 11-04558 ..... $9.25

Peltor™ Clothing Clip ..... P/N 11-04559 ..... $6.00

MT70 Metal Mic Boom - 220 ohm dynamic noise cancelling microphone, military standard. 2-pin nexus plug. Used on all MT series headsets
P/N 11-08062 ..... $89.50

3M™ PELTOR™ HUMMINGBIRD HELICOPTER HEADSET

This new headset, designed for low impedance helicopter intercom systems, leads the 3M ™ Peltor™ line, with advanced comfort and performance features • Twin Cup/Double Shell ear cup design provides high attenuation • NRR 30 dB • Top exit cables allow for easy connection to overhead intercoms • Coiled cables extend for console mounted intercoms. P/N 11-08712 ..... $329.50

3M™ PELTOR ™ 8103 HELICOPTER HEADSET

The Aviation 8103 helicopter headset has an ambient-noise compensated dynamic differential microphone, specially designed for aviation intercom systems. The microphone amplifier is designed for intercom systems with 5 Ohm impedance. The frequency range is adjusted for good speech recognition. The earphones have a limited frequency range, to give the best possible speech recognition in the ambient noise of a helicopter. Peltor's two-point suspension of the shells on a broad headband ensures total comfort and consistent noise attenuation. The spiral polyurethane cable has a moulded NATO-standard connector equivalent to the Nexus TP-120. P/N 11-08704 ..... $66.75

PILOT USA PA-1140HNE GROUND CREW HEADSET

Great fit for aviation ground crew, passive noise attenuating headset preferred by ground crews around the world. This behind-the-head style allows headset to be worn under a hard hat while maintaining a secure fit and clear communications. Headset comes normally with an electret noise canceling microphone. This style of headset can also be fitted with various 2-way radio plugs and can be worn under a hard hat where hand held radios are in use. NRR 27 Three Year Warranty. ..... P/N 11-06511 ..... $130.00

PILOT USA PA-1100 LISTEN ONLY HEADSET

Keep your passengers informed and protect their hearing with our lightweight listen-only headset. Audio input jack allows user to listen to their favorite IPOD®, MP3®, cd player or monitor a radio. Your passengers will thank you for making their flight more enjoyable. NRR 24.

PA-1100 ..... P/N 11-06516 ..... $75.00
PA-1100S Stereo ..... P/N 11-06515 ..... $80.00

PILOT USA PA-1110 SINGLE SIDE HEADSET

This single sided ear cup headset is perfect for monitoring a radio and keeping one ear free to listen to crew members or monitor a 2nd radio source. One stirrup and ear cup have been replaced with an adjustable 2 cushion Air-Foam temple pad. Headset is fitted with a half flex/half metal mic boom with a noise canceling PA-7 electret microphone. Ear seals are liquid and foam for comfort and excellent noise cancellation. Weight 9.6 ounces. Three Year Warranty.

PA-1110 ..... P/N 11-06513 ..... $110.00
PA-1110H Helicopter ... P/N 11-06514 ..... $135.00

PA-1779M MILITARY HEADSET

- Passive Noise Reduction (NRR): 25dB
- Active Noise Reduction: Additional 20-22dB
- Genuine Sheepskin Headpad
- Gel Ear Seals
- M-87/AIC Dynamic Microphone
- Custom Padded Protective Case
- Rechargeable NIMH battery
- Usage Time: 30-40 hrs
- Coiled Cord with U-174/U Plug
- Weight: 16.9 ounces (479 grams)
- Five Year Warranty
- Made in U.S.A

Model	Part No.	Price
PA-1779M87	11-06539	$575.00
PA-1779M101	11-06538	$550.00

PA-1176M MILITARY HEADSET

- Passive Noise Reduction (NRR): 24dB
- Dual Volume Controls
- Pillow-Top Headpad
- Gel Ear Seals
- M-87/AIC Dynamic Microphone
- Metal Hinged Microphone boom
- Cloth Ear Seal Covers
- Soft Padded Headset Case
- Coiled Cord with U-174/U Plug
- Weight: 16.9 ounces (479 grams)
- Three Year Warranty

Model	Part No.	Price
PA-1176M101	11-06542	$195.00
PA-1176M87	11-06543	$235.95

PA-1166M MILITARY HEADSET

- Passive Noise Reduction (NRR): 25dB
- Dual Volume Controls
- Pillow-Top Headpad
- Gel Ear Seals
- M-101/AIC Dynamic Microphone
- Metal Hinged Microphone boom
- Cloth Ear Seal Covers
- Soft Padded Headset Case
- Coiled Cord with U-174/U Plug
- Weight: 16.9 ounces (479 grams)
- Three Year Warranty

Model	Part No.	Price
PA-1166M101	11-06544	$275.00
PA-1166M87	11-06545	$290.00

FLIGHT LITE GEN II DUAL SENSOR PILOT LIGHT

FLITELite GEN II Dual Sensor Pilot Light. The New GEN II is 30% smaller, and more efficient than GEN One. The new version was developed to meet MIL-STD-3009, for Night Vision Imaging Systems (NVIS) aircrew auxiliary and utility lighting. This light is also perfect for the General Aviation Cockpit. FLITELite comes complete with: * GEN II FLITELite unit, computer controlled, dual sensor pilot light * Headset or Helmet Adapter (new adapters are free) * AAA Battery Pack * Optional Coin Cell Pack * Attachment accessories * AAA Batteries * Warranty

Headset	White	Red	Blue	Green	Price lights	Night Vision	Price Night Vision
Bose	11-07034	11-08002	11-08003	11-08004	$44.95	11-07038	$54.95
Lightspeed	11-07035	11-08006	11-08007	11-08008		11-07039	
David Clark	11-07036	11-08010	---	11-08013		11-07040	
Sennheiser	11-07037	11-08014	11-08015	11-08016		11-07041	
Optional Coin Cell Battery Pack				11-07872		$3.85	

AV

PILOT USA HEADSETS

PA-1779T ANR HEADSET

- Passive Noise Reduction (NRR): 25dB
- Active Noise Reduction: Additional 20-22dB
- Auto Shutoff System
- Cell/Satellite Phone Interface
- Auxiliary Audio Interface for Music or Audible Checklist/Warnings
- Mono/Stereo Capability
- Dual Volume Controls
- Genuine Sheepskin Headpad
- Gel Ear Seals
- Noise Cancelling Electret Microphone
- Custom Padded Protective Case
- Rechargeable NIMH battery
- Usage Time: 30-40 hrs
- Weight: 16.9 ounces (479 grams)
- Five Year Warranty
- Made in U.S.A

PA-1779T ..... P/N 11-11515 ..... $465.00
PA-1779TH (Helicopter) ..... P/N 11-03538 ..... $490.00
PA-1779TP (Panel Mount) ..... P/N 11-00440 ..... $500.00
PA-1779TB (Bose Connect) ..... P/N 11-03539 ..... $530.00

PA-1771T ANR HEADSET

- Passive Noise Reduction (NRR): 25dB
- Active Noise Reduction : Additional 20-22dB
- Auto Shutoff System
- Cell/Satellite Phone Interface
- Auxiliary Audio Interface for Music or Audible Checklist/Warnings
- Mono/Stereo Capability
- Dual Volume Controls
- Genuine Sheepskin Headpad
- Gel Ear Seals
- Noise Cancelling Electret Microphone
- Custom Padded Protective Case
- Powered by 9V Battery
- Battery Life: 25-30 hrs
- Weight: 13.4 ounces (380 grams)
- Five Year Warranty
- Made in U.S.A

PA-1771T ..... P/N 11-02110 ..... $375.00
PA-1771TH (Helicopter) ..... P/N 11-03537 ..... $400.00

PA 1761T ANR HEADSET

- Passive Noise Reduction (NRR): 24dB
- Active Noise Reduction: 16-19dB
- Auto Shutoff System
- Cell/Satellite Phone Interface
- Auxiliary Audio Interface for Music or Audible Checklist/Warnings
- Mono/Stereo Capability
- Dual Volume Controls
- Pillow-Top Headpad
- Gel Ear Seals
- Noise Cancelling Electret Microphone
- All Flexible Microphone Boom
- Cloth Ear Seal Covers
- Soft Padded Headset Case
- Powered by 9V Battery
- Battery Life: 25-35 hours
- Weight: 16.9 ounces (479 grams)
- Three Year Warranty

PA-1761T ..... P/N 11-03550 ..... $295.00
PA-1761TH (Helicopter) ..... P/N 11-06505 ..... $320.00

PA-2170T PASSIVE HEADSET

- Passive Noise Reduction (NRR): 26dB
- Cell/Satellite Phone Interface
- Auxiliary Audio Interface for Music or Audible Checklist/Warnings
- Mono/Stereo Capability
- Dual Volume Controls
- Genuine Sheepskin Headpad
- Gel Ear Seals
- Noise Cancelling Electret Microphone
- Soft Padded Headset Case
- Weight: 12.4 ounces (352 grams)
- Five Year Warranty
- Made in U.S.A.

PA-2170T ..... P/N 11-04940 ..... $185.00
PA-2170TH (Helicopter) ..... P/N 11-03553 ..... $210.00

PA-1181T PASSIVE HEADSET

- Passive Noise Reduction (NRR): 24dB
- Cell/Satellite Phone Interface
- Auxiliary Audio Interface for Music or Audible Checklist/Warnings
- Mono/Stereo Capability
- Dual Volume Controls
- Push-to-Talk Switch (PTT) on Ear Cup
- Pillow-Top Headpad
- Gel Ear Seals
- Noise Cancelling Electret Microphone
- All Flexible Microphone Boom
- Cloth Ear Seal Covers
- Soft Padded Headset Case
- Weight: 15.9 ounces (389 grams)
- Three Year Warranty
- Also Available in PINK!

PA-1181T ..... P/N 11-03554 ..... $185.00
PA-1181T-P (Pink) ..... P/N 11-07326 ..... $185.00
PA-1181TH (Helicopter) ..... P/N 11-03555 ..... $210.00

PA-1171T PASSIVE HEADSET

- Passive Noise Reduction (NRR): 24dB
- Cell/Satellite Phone Interface
- Auxiliary Audio Interface for Music or Audible Checklists/Warnings
- Mono/Stereo Capability
- Dual Volume Controls
- Super Cushion Headpad
- Confor® Foam Leatherette Ear Seals
- Noise Cancelling Electret Microphone
- Half Metal / Half Flex Microphone boom
- Soft Padded Headset Case
- Weight: 14.9 ounces (422 grams)
- Three Year Warranty

PA-1171T ..... P/N 11-03556 ..... $145.00
PA-1171TH (Helicopter) ..... P/N 11-03557 ..... $170.00

PA-1161 PASSIVE HEADSET

- Passive Noise Reduction: (NRR) 24dB
- Half Metal/Half Flex "Memory" Microphone Boom
- Noise Canceling Electret Microphone
- Foam Head Pad
- Mono/Stereo Capability
- Foam Ear Seals
- Individual Volume Controls
- Warranty: Three Year Warranty.

PA-1161 ..... P/N 11-11560 ..... $120.00

P-1151ACB/ACG CHILD PASSIVE HEADSET

- Passive Noise Reduction (NRR): 24dB
- Auxiliary Audio Interface for Music
- Mono/Stereo Capability
- Dual Volume Controls
- Mini Super Cushion Headpad
- Foam Ear Seals
- Noise Cancelling Electret Microphone
- Mini Full Flex Microphone Boom
- Small Headband for Perfect Fit
- Weight: 11.9oz (337 grams)
- Three Year Warranty
- ACB has 1 RED and 1 BLUE ear cup. ACG has PINK ear cups.

PA-1151ACB (Boys) ..... P/N 11-09660 ..... $120.00
PA-1151ACG (Girls) ..... P/N 11-03540 ..... $120.00

PILOT USA BLUETOOTH CELLPHONE / MUSIC ADAPTER

BluLink enables you to use your Bluetooth cell phone and any music source wirelessly in the cockpit. You can use your existing general aviation, helicopter, Bose style panel mount, or military aviation headset with BluLink. No more tucking your cell phone under your headset or adapters with various additional cords and adapters. The BluLink will work with any cell phone with Bluetooth version 2.0 or lower. Great for filing a flight plan, checking weather, calling for fuel, getting a clearance at an uncontrolled field, calling a taxi, voiding a flight plan, closing a VFR flight plan, calling for a taxi. Can be use as primary communications for experimental and ultralight pilots.

Fpr GA Headsets: Works for general aviation headsets equipped with standard dual plugs ..... P/N 11-06553 ..... $249.00
For Helicopter Headsets: Works for helicopter headsets equipped with the U-174 single plug ..... P/N 11-06613 ..... $274.00
For Lemo Headsets: Works for panel powered headsets equipped with the Bose style single plug ..... P/N 11-06614 ..... $299.00
For Military Headsets: Works for dynamic, Low Impedance headsets equipped with a U-174 plug. Standard in military operations.
P/N 11-09226 ..... $349.99

AV

SOFTCOMM HEADSETS

SOFTCOMM C-10 CHANCELLOR HEADSET

• 24 db passive NRR • Mono/Stereo switchable • Built-in PTT switch • Black gel and foam earseals included • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 15.1oz. head weight • 5 year warranty

P/N 11-03756 ..... $164.00

SOFTCOMM C-20 PHOENIX HEADSET

• 23 db passive NRR • 5 year warranty
• Mono/Stereo switchable
• Extra large thick soft ear seals
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Weight: 13.9 oz. head weight

P/N 11-04761 ..... $152.95

SOFTCOMM C-35 WHITE KNIGHT HEADSET

• 22 db passive NRR • 3 year warranty • Mono / Stereo switchable • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy duty cables • Wt: 11.9 oz. head weight

P/N 11-03759 ..... $164.00

SOFTCOMM C-40 PRO-AM HEADSET

• 23 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 12.3 oz. head weight • 3 year warranty.

P/N 11-03761 ..... $106.95
Stereo ..... P/N 11-03762 ..... $118.95
Helicopter ..... P/N 11-04131 ..... $185.95

SOFTCOMM C-45 PRINCE HEADSET

• 22 db passive NRR • Mono only • Lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Du ty Cables • Wt: 11.4 oz. head weight • Folds into Ball • 3 year warranty.

P/N 11-03763 ..... $99.00
C-45-10A Black With Audio
P/N 11-06368 ..... $99.50

SOFTCOMM C-80 BNE HEADSET

• 24db passive NRR • Mono/Stereo switchable • M-57 electret mic • Fully flexible mic boom • 66" Flexible Heavy Duty Cables • Wt:14 oz. C-80 head weight • Wt: 15.6 oz. • 3 conductor cell phone compatible • 3 yr warranty

P/N 11-00211 ..... $171.95

C45-10 CHILD PRINCE HEADSET

• 22 db passive NRR • Mono only • Smaller lightweight foam ear seals • M-56 electret mic • 66" Flexible Heavy Duty Cables • Wt: 11.0 oz. head weight • Folds into Ball • 3 year warranty •
Red ..... P/N 11-03764 ..... $88.75
Purple ..... P/N 11-07123 ..... $88.75
C-45-10A - Red with audio plug for CD, DVD, MP3 players or handhelds video games.

P/N 11-05946 ..... $99.00

SOFTCOMM HEADSET ACCESSORIES

Black Gel Ear Seals ..... P/N 11-11834 ..... $21.50 Pr.
Cloth Comfort Covers ..... P/N 11-11810 ..... $6.95 Pr.
Foam Mike Muff ..... P/N 11-11820 ..... $5.95 Ea.

C-200 CENTURION

The C-200 headset features a contoured head pad for a soft, comfortable fit, a flex boom articulating fulcrum with adjustable mic boom and mic muff, and a small power pack with low battery LED indicator. The C-200 is cell phone ready and is complete with interface jack, interconnect cable and hands free adaptor. Other features include silver black dones with silver letting, gel and foam filled ear seals; stereo/mono switch and dual volume controls, noise canceling electret mic and RF immune M-56 amplifier, -24 db passive and -19 ANR, and push-to-talk switch on ear dome. Wt: 14 oz. Power: 9V battery. 3 year warranty. Made in the USA. Specifications: • Head Weight: 14.2 oz. • Total weight: 18.5 oz. • NR Rating: -24 db Passive, -19 db active Warranty: 3yr Unconditional. P/N 11-03019..... $337.95

SOFTCOMM C-300 CENTURION

The C-300 headset features a fail safe power feature which automatically converts to a full performance -24 dB passive headset should ANR circuit fail. The C-300 is cell telephone ready with amplified volume, detachable cable supplied for ground phone use in noisy environments. Supports Cell Phones equipped with a 2.5mm 3 conductor hands free jack. Listen to both Cell-phone and ATC at same time. The C-300 has noise attenuation of -19db active ANR and -24 db passive, a unique noise absorbing material, positive set flex boom, soft foam ear seals, cloth covers and mic muff. Made in the USA. Specifications: •Weight: 16.2 oz •Total Weight: 21.7 oz •NR Rating: -24 db Passive, -17 db active • Warranty: 3yr Unconditional..... P/N 11-03020 ..... $414.00

SOFTCOMM C-40-10 RED BARON

• 23 db passive NRR • Mono only
• Lightweight foam ear seals
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Wt: 12.5 oz. head weight
• 3 year warranty

P/N 12-01087 ..... $109.85

SOFTCOMM C-50 BLACK KNIGHT

• 22 db passive NRR
• Lightweight foam ear seals
• M-56 electret mic
• 66" Flex HD Cables
• Wt: 11.4oz. head weight
• Folds into Ball
• Mono only
• 3 year warranty

P/N 11-02654..... $96.75

SOFTCOMM C-60 SILVER EDITION

• 24 db passive NRR • PTT in Dome
• Mono/Stereo switchable
• Lightweight foam ear seals
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Wt: 14.9 oz. headweight
• 5 year warranty

P/N 11-03766 ..... $152.95

SOFTCOMM C-40-20 HEADSET SILVER FOX

• Non-Reflective Black Metal Frame with Fixed Metal Stirrups.
• Gun Metal Grey Domes with Silver Lettering.
• A Black Two-Piece, 4-way Adjustable wire Mic boom.
• Extra-Soft, Foam Ear Seals.
• STEREO/MONO Switch with Dual Volume Controls.
• Mic Muff and Cloth Ear Covers ** Included **
• A ribbed Foam Head Pad and Black Adjustable Metal Head Band.
• RF immune M-56 Amplifier and Noise Canceling ELECTRET microphone.
• Gold Plated Communication cable Plugs for noise-free audio.

P/N 11-05728 ..... $122.95

SOFTCOMM C-45-20 YOUTH / PASSENGER ANR

• 22 db passive NRR • 17 db active NRR
• Mono/Stereo switchable
• M-56 electret mic
• 66" Flexible Heavy Duty Cables
• Wt: 14.5 oz. head weight
• Incl. child & adult lightweight foam ear seals
• Folds into Ball • 3 yr warranty

Purple ..... P/N 11-01283 ..... $246.95
Black ..... P/N 11-09529 ..... $243.95
Grey ..... P/N 11-09530 ..... $246.95

AV

C-20 BLACK HEADSET

Features for this headset include an extra thick ventilated cushion headpad and ear seals for maximum comfort, earphones wired in parallel for safety and reliability, adjustable boom microphone that can be placed on left or right side of mouth, and high performance noise cancelling microphones. Additional Features: Corrosion proof chrome plated steel in accordance with demanding government specifications • PU cord up to 5 feet long, shielded cable for near perfect E.M.I/R.F.I. protection • PU cord and plug configurations for specific aircraft • Lock nut construction for customized fit. Set it once it fits you right every time • Earphones (300 ohms ea.) wired in parallel for safety and reliability. Earphones compatible with 150-1000 ohm systems. • Listen Volume Control allows you to adjust to a comfortable level • Flexible tension boom assembly for more comfortable and precise microphone placement • Microphone Windscreen • Noise Reduction/Sensitivity: 21dB • PU cord and plug dual plug configurations for specific aircraft

P/N 17-00238 ..... $131.95

C-20 COBRA HEADSET

Features for this headset include an extra thick ventilated cushion headpad and ear seals for maximum comfort, earphones wired in parallel for safety and reliability, adjustable boom microphone that can be placed on left or right side of mouth, and high performance noise cancelling microphones. Additional Features: • Corrosion proof chrome plated steel in accordance with demanding government specifications • PU cord up to 5 feet long, shielded cable for near perfect E.M.I/R.F.I. protection • PU cord and plug configurations for specific aircraft • Lock nut construction for customized fit. Set it once it fits you right every time • Earphones (300 ohms ea.) wired in parallel for safety and reliability. Earphones compatible with 150-1000 ohm systems. • Listen Volume Control allows you to adjust to a comfortable level • Flexible tension boom assembly for more comfortable and precise microphone placement • Microphone Windscreen • Noise Reduction/Sensitivity: 21dB • PU cord and plug dual plug configurations for specific aircraft.

P/N 17-00237 ..... $135.75

AX-20 HEADSET

This headset helps to ensure four important goals of today's airline communications: • safety • reliability • health protection • convenience.

The hands of the pilot are completely free from any communication chores, thus ensuring full prompt response to all flight events. Thus, the headset contributes to flight safety. By being tightly, yet comfortably, positioned on the pilots head, above the ear, the headset allows to separate all important communications from cockpit noise, thus contributing to flight reliability. Noisy cockpits produce fatigue and stress on pilots. The headset nearly eliminates this problem, thus contributing to the pilots health protection. Comfort and conveniene are evident by a simple look at the headset. AX20 — straight cord up to 5 feet long . Stirrup pivot assembly, such that cups can provide universal fit; Comfortable, extra tick, headpad cushioning; — cushioned ear seals for the best possible noise attenuation and comfort; Shielded cable for near perfect E.M.I./R.F.I. protection; Corrosion-proof chrome plated steel; — parallel earphone wiring;— adjustable volume control; 150 to 10,000 ohms compatibility; Universal mike boom assembly for precise placement of microphone; High performance, noise cancelling microphone. P/N 17-00235 ..... $119.95

AX-40 HEADSET

This headset helps to ensure four important goals of today's airline communications: •safety • reliability • health protection • convenience.

The hands of the pilot are completely free from any communication chores, thus ensuring full prompt response to all flight events. Thus, the headset contributes to flight safety. By being tightly, yet comfortably, positioned on the pilots head, above the ear, the headset allows to separate all important communications from cockpit noise, thus contributing to flight reliability. Noisy cockpits produce fatigue and stress on pilots. The headset nearly eliminates this problem, thus contributing to the pilots health protection. Comfort and conveniene are evident by a simple look at the headset. AX40 — straight cord up to 5 feet long. Stirrup pivot assembly, such that cups can provide universal fit; Comfortable, extra tick, headpad cushioning; — cushioned ear seals for the best possible noise attenuation and comfort; Shielded cable for near perfect E.M.I./R.F.I. protection; Corrosion-proof chrome plated steel; — parallel earphone wiring;— adjustable volume control; 150 to 10,000 ohms compatibility; Universal mike boom assembly for precise placement of microphone; High performance, noise cancelling microphone. P/N 17-00236 ..... $124.95

FLIGHTCOM VENTURE 30 PASSIVE FIXED WING HEADSET

The Venture 30 Passive stereo headset combines affordable quality, durability, and features for new pilots and passengers young and old. The 17 ounce weight, open-cell foam PVC ear seals, ventilated foam-rubber head pad, and shallow speaker design deliver adaptable fit. The 24dB passive NRR enables clear communication. A stereo/mono switch and single volume control optimize hearing. The powder-coated black headband matches natural black ear domes. P/N 11-10585 ..... $109.00

FLIGHTCOM VENTURE 50 PASSIVE HEADSET

The 17 ounce weight, open-cell foam PVC ear seals, wide and comfortable air-pillow head pad, and shallow speaker design make a very comfortable headset. With 24dB passive NRR, everyone will enjoy clear communication. A stereo/mono switch and dual volume controls optimize hearing. A powder-coated black headband complements the fresh look of onyx black ear domes. A lightweight carrying bag is included.

Fixed Wing ..... P/N 11-10584 ..... $129.00
Helicopter ..... P/N 11-10583 ..... $169.00

FLIGHTCOM VENTURE 70 PASSIVE FIXED WING HEADSET

This headset weighs a mere 17 ounces and comes with supple ComLeather ear seals and washable polar-fleece head pad for long-wearing comfort. Like other Flightcom™ Venture series headsets, the Venture 70 provides a 24dB NRR barrier against cockpit noise. Dual volume controls with stereo/mono switch optimize hearing. The powder-coated black headband and carbon fiber print ear domes look professional in any cockpit. A lightweight carrying case is included.

P/N 11-10581 ..... $169.00

FLIGHTCOM VENTURE 90 DUAL INPUT ANR HEADSET

Weighing in at 17 ounces with super-thick ComLeather ear seals and washable thick polar-fleece head pad, this headset is designed to maintain the comfort demanded by experienced pilots spending long hours in the left seat. With 24dB passive NRR and an additional 14-18dB ANR, noise won't prevent you from hearing radio traffic or using your MP3 and your Sat/Cell phone through the dual-input battery box. Auxiliary inputs are muted when communications are received. The Sure Power system shuts off ANR to preserve battery life when no audio is present longer than 15 minutes. A stereo/mono switch and dual volume controls optimize hearing. The chrome headband with carbon fiber print ear domes put this into a class of its own with the latest in style complemented with outstanding features and reliability. Includes a heavy-duty padded carrying case.

Fixed Wing ..... P/N 11-10580 ..... $219.00
Helicopter ..... P/N 11-10579 ..... $249.00

FLIGHTCOM VENTURE 50 DUAL INPUT ANR HEADSET

The 17 ounce weight, open-cell foam PVC ear seals, wide and comfortable air-pillow head pad, and shallow speaker design make a very comfortable headset. With 24dB passive NRR and an additional 14-18dB ANR, noise fatigue and clear communication shouldn't be an issue. A stereo/mono switch and dual volume controls optimize hearing. A powder-coated black headband complements the fresh look of onyx black ear domes. A lightweight carrying bag is included. P/N 11-10582 ..... $279.00

FLIGHTCOM VENTURE 90 DUAL INPUT ANR HEADSET

Weighing in at 17 ounces with super-thick ComLeather ear seals and washable thick polar-fleece head pad, this headset is designed to maintain the comfort demanded by experienced pilots spending long hours in the left seat. With 24dB passive NRR and an additional 14-18dB ANR, noise won't prevent you from hearing radio traffic or using your MP3 and your Sat/Cell phone through the dual-input battery box. Auxiliary inputs are muted when communications are received. The Sure Power system shuts off ANR to preserve battery life when no audio is present longer than 15 minutes. A stereo/mono switch and dual volume controls optimize hearing. The chrome headband with carbon fiber print ear domes put this into a class of its own with the latest in style complemented with outstanding features and reliability. Includes a heavy-duty padded carrying case. P/N 11-10578 ..... $399.00

COMTRONICS HEADSETS & HELMETS

COMTRONICS HEADSETS

MODEL-3100 HEADSET - Comtronics Model-3100 Headset has a 34 dB noise attenuation rating making it one of the quietest passive headsets on the market today. The electret noise-canceling Microphone has state-of-the-art voice quality and is compatible with all current Comtronics intercoms and radio interface cables. Headset cables can be terminated with a single plug or configured with two plugs for general aviation use. Earmuffs can be adjusted up or down. All Comtronics helmets and headsets are designed for high noise environments and open cockpit flying including ultralights, powered parachutes, auto-gyros and all sport planes. Weight: 1 lb. (Black) P/N 11-07425 ..... $227.95

MODEL-3000 HEADSET - • The Model-3000 Headset offers 30 dB noise attenuation. • They are light-weight and have dark green muffs. • Ear seals are fluid foam-filled cushions and very comfortable. • Can be fitted with our PRO-COM Helmet. • Gel/Foam Ear Seals are optionally available. • This headset can also be used for high noise environments • Weight: 1 lb.(Dark Green)
P/N 11-09942 ..... $191.95

PRO-LITE SUPERIOR STEREO HEADSET - This headset uses either ultralight or general aviation audio and has a second pair of speakers for High Fidelity Stereo Music. Outstanding audio! • Music Speakers Frequency Response: 15 - 25000 Hz • 3.5 mm Stereo Music Jack on Ear Cup • Comes with Music Cord • Comfortable • Gel/Foam Ear Seals can be added for extra comfort and noise attenuation • NRR 33 - 45 dB • Can also be used with our PRO-COM Helmet • Weight: 1 lb.
w/ Electret Mic (Blue) ..... P/N 11-09943 ..... $265.00
Listening Only (Blue) ..... P/N 11-07429 ..... $165.00

COM-AIR MODEL-5000 GENERAL AVIATION HEADSET - • Similar to Model-3100 Headset • General Aviation Plugs and Audio • Can also be fitted with our PRO-COM Helmet • Also available is a General Aviation - to - Ultralight Adapter • Gel/Foam Ear Seals can be added • Weight: 1 lb. (Black) P/N 11-09944 ..... $265.00

COMTRONICS AERO-COM SYSTEMS

Each includes: Two headsets and the Intercom specified.

System	Headset	Intercom	Part #	Price
Aer-Com	Model 3100	Ultra-Com II	11-07414	$590.00
Aer-Com	Model 3100	Dual-Com II	11-07415	$641.00
Aer-Com	Model 3000	Ultra-Com II	11-07411	$550.00
Aer-Com	Model 3000	Dual-Com II	11-07412	$590.00

COMTRONICS HELMETS

Helmet Size Selection Chart	
Helmet Size	Head Size
XX-Large	7-5/8" & up
X-Large	7-3/8" to 7-5/8"
Large	7-1/8" to 7-3/8"
Medium	6-7/8" to 7-1/8"
Small	6-5/8" to 6-7/8"

COMTRONICS PRO-COM FLIGHT HELMET - The Comtronics PRO-COM Helmet without headset. This helmet is unique because it offers a detachable design allowing removal of headset from helmet. Can be used with Comtronics Model-3100 Headset, Model-3000 Headset, PRO-LITE SUPERIOR STEREO Headset and COM-AIR Model-5000 General Aviation Headset. Fits all general aviation headsets. Chin strap has the new built-in ultra-soft chin pad design as well. Each helmet comes with a black peak visor. Color choices: Metallic White, Metallic Silver, Metallic Red, Metallic Wine, Gloss Red, and Gloss Black. Sizes available: Small, Medium, Large, X-Large, and XX-Large $210.95

COMTRONICS ULTRA-PRO 2000 - Earmuffs are attached to a spring steel wire frame which is secured to the inside surface of shell. This arrangement provides a more positive seal for noise reduction caused by the engine, propeller and wind. The Ultra-Pro 2000 Flight Helmet is available in Metallic White, Metallic Silver, Metallic Red, Metallic Wine, Gloss Red, and Gloss Black. Sizes include Small, Medium, Large, X-Large, and XX-Large $344.95

COMTRONICS ULTRA-PRO STANDARD - The ULTRA-PRO Standard Helmet also has a plush fully upholstered liner and beaded foam inner shell with the new ultra-soft chin pad design. A feature unique to the Comtronics ULTRA-PRO Standard Helmet, the flip-out ear muffs allow easy entry and ability to converse with a student or passenger while making pre-flight inspections. The Ultra-Pro 2000 Flight Helmet is available in Blue, Metallic White, Metallic Silver, Metallic Red, Metallic Wine, Gloss Red, and Gloss Black. Sizes include Small, Medium, Large, X-Large, and XX-Large
.$344.95

COMTROINCS ULTRA-PRO HF HELMET - The ULTRA-PRO HF Helmet has a built in communication system using an electret microphone, built-in ear cups, quick release fase shield with either a single plug for ultralight audio or two plugs for genera aviation audio. This helmet has an ultra-plush interior and check pads are added to prevent air and noise from entering the helmet. Adjustable top vent and rear exhaust diffuser keep the helmet at a comfortable temperature. Color choices: Metallic White, Metallic Silver, Metallic Wine, Glossy Black, and Flat Black. Sizes available: Small, Medium, Large, X-Large, and XX-Largelease specify color & Size. $402.95

COMTRONICS ULTRA-PRO FULL FACE - Comtronics Full-Face fiberglass helmets are complimented by an Air Channel technology vent system, quick release shield system, padded chin bar, adjustable chin and top vents, rear exhaust vents, breath spoiler, padded D-ring retention system, UV clear protects paint and graphics, and DOT approved. The helmet interior has a comfortable liner, fitted ear cups with a pair of 2-inch speakers to enhance audio reception and built-in electret microphone. Color choices: Metallic White, Metallic Silver, Gloss Black, Flat Black, Graphic Red (pictured), Graphic Blue (pictured), and Graphite Metallic. Sizes available: Small, Medium, Large, X-Large, and XX-Large.See sizing chart above. $479.95

COMTRONICS AERO-PRO SYSTEMS

Each includes: Two helmets and the intercom specified.

System	Headset	Intercom	Part #	Price
Aero-Pro	Ultra-Pro 2000	Ultra-Com II	11-07404	$739.95
Aero-Pro	Ultra-Pro 2000	Dual-Com II	11-07405	$780.00
Aero-Pro	Ultra-Pro Standard	Ultra-Com II	11-07401	$739.95
Aero-Pro	Ultra-Pro Standard	Dual-Com II	11-07402	$789.00

Each includes: Two helmets, two headsets and the intercom specified.

System	Headset	Intercom	Part #	Price
Aero-Pro	Pro-Com	Ultra-Com II	11-07417	$780.00
Aero-Pro	Pro-Com	Dual-Com II	11-07418	$830.00

COMTRONICS ACCESSORIES

Description	Part No.	Price
Helmet Bag - Fleece Lined	11-07437	$44.95
Coiled Cord - Helmet/Headset Option	11-07438	$45.00
Gel/Foam Ear Seal Cushions	11-07439	$39.95
Face Shield - Clear	11-07440	$29.85
Face Shield - Smoke	11-07441	$29.85
Ulta Paq II - Heavy duty pack for the Ultra-Com II intercom	11-07442	$34.95
Dual Paq II - Heavy duty pack for the Dual-Com II intercom	11-07443	$39.95
Peak Visor	11-07444	$8.60
Windscreen - Foam / Dynamic	11-07445	$9.95
Windscreen - Leather / Dynamic	11-07446	$9.95
Windscreen - Foam / Electret	11-07447	$9.95
Windscreen - Leather / Electret	11-07448	$9.95
Ultra to GA adapter / Dynamic	11-12537	$129.95
Ultra to GA adapter / Electret	11-08645	$88.50
Ultra to Heli Adapter	11-09957	$57.95
GA Dual Plug	11-09805	$57.95
Remote Antenna with BNC and 2 foot Whip	11-07436	$74.95

COMTRONICS INTERFACE CABLE

Interface cables are designed to connect our helmets or intercoms to your transceiver. Different interface and custom cables available.

Cable For:	Part No.	Price
Icom A6/A24/A14	11-07450	$129.95
Vertex VXA 220/300	11-07451	$110.95
Ultralight to Dual GA Headset Adapter Electret	11-08645	$88.50
Ultralight to Dual GA Headset Adapter Dynamic	11-12537	$129.95

PLEASE SEE AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF MODELS AND PART NUMBERS.

AV

RUGGED AIR HEADSETS

RUGGED AIR RA200 HEADSET

Headset with 24 db NRR, Clear Hear performance audio speakers, volume control and 3.5mm music input jack for Ipods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals student pilots and flight instructors will enjoy the all day comfort of the RA200. Superior Clear Hear 50mm audio performance speakers. EM56 noise reflective cup microphone and wind block foam mic muff. 7 year factory warranty

Rugged Air is bringing new audio technology with the same proven reliable cup and headband design. Finish it off with gold plated plugs, tough molded Y block, music input port, Total Shield cabling, and EM56 noise reflective microphone the RA200 is the perfect choice for all of your aviation adventures. P/N 13-09291..... $89.95

RUGGED AIR STEREO AVIATION HEADSET RA454

Rugged Air brings new stereo audio performance with the same proven reliable cup and headband design. With Clear Hear stereo speakers and a 24 dB noise reduction rating ATC will come through loud and clear. Always be heard with the all new designed EM56 noise reflective cup microphone with wind blocking foam mic muff.

Other features include volume control, 3.5mm music input port for Ipods and MP3, Foam Fit ear seals, and adjustable stainless steel headband. Finish it off with a backup ATC push to talk, gold plated plugs, tough molded Y-Block, and Total Shield cabling. The Rugged Air RA454 headset is the perfect choice for all of your flying adventures. Full Factory 7 Year Warranty. P/N 13-09911.....$131.75

RUGGED AIR RA900 FLEX HEADSET

The Rugged Air aviation headset with 24 db NRR, Clear Hear performance audio speakers, dual volume control stereo weather proof push to talk on the dome and 3.5mm music input jack for Ipods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals student pilots and flight instructors will enjoy the all day comfort of the RA900. Never miss an instruction with the superior Clear Hear 50mm audio performance speakers. Always be heard with the all new designed EM56 noise reflective cup microphone and wind block foam mic muff. 7 year factory warranty

Rugged Air is bringing new audio technology with the same proven reliable cup and headband design. Finish it off with gold plated plugs, tough molded Y block, music input port, Total Shield cabling, and EM56 noise reflective microphone the RA900 is the perfect choice for all of your aviation adventures. P/N 13-09293.....$199.00

RUGGED AIR RW-RA900 WIRELESS HEADSET

Connect your Bluetooth cell phone for the ultimate wireless connection to stream music, answer phone calls, and enjoy it all without cables. Professional features offer both comfort and clear audio performance for clear communciations with ATC and passengers. Now with Rugged Wireless technology, enjoy your music without cables and clutter.

24dB NRR, Clear Hear 50mm performance audio speakers, weather proof push to talk (PTT) on the dome and 3.5mm music input jack for iPods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals, student pilots and flight instructors will enjoy the all day comfort of the RA900.

Always be heard with the all new designed EM56 noise reflective cup microphone and wind block foam mic muff. Performance features include Total Shield cabling, gold plated plug and tough molded Y-block.

Wireless Features: • Pair your Bluetooth cell phone • Answer calls with one-button press • Hang up with one-button press.

P/N 13-14959.....$389.95

RUGGED AIR RA950 ANR STEREO AVIATION HEADSET

The Rugged Air RA950-ANR aviation headset with Active Noise Reduction, Clear Hear performance audio speakers, dual volume control stereo, and easy access 9v battery pack with mono/stereo switch. With urethane Gel ear seals, fully adjustable spring steel headband and Deep Pocket ear canals, pilots and flight instructors will enjoy the all day comfort of the RA950-ANR. Never miss ATC with the superior Clear Hear ANR audio technology blocking out the background noise. Always be heard with the all new designed EM58 noise cancelling microphone and wind block foam mic muff. 2 year factory warranty

Rugged Air is bringing new ANR audio technology with the same proven reliable cup and headband design. Finish it off with gel ear seals, comfort top head pad, quick change 9v battery compartment, Total Shield cabling, and EM58 noise reflective microphone the RA950-ANR is the perfect choice for all of your aviation adventures.

P/N 13-09294.....$293.95

RUGGED AIR RA250 CHILD HEADSET

Headset with 24 db NRR, Clear Hear performance audio speakers, volume control and 3.5mm music input jack for Ipods and MP3. With Foam Fit ear seals, stainless steel headband and Deep Pocket ear canals student pilots and flight instructors will enjoy the all day comfort of the RA250. Never miss an instruction with the superior Clear Hear 50mm audio performance speakers. Always be heard with the all new designed EM56 noise reflective cup microphone and wind block foam mic muff. 7 year factory warranty

Rugged Air is bringing new audio technology with the same proven reliable cup and headband design. Finish it off with gold plated plugs, tough molded Y block, music input port, Total Shield cabling, and EM56 noise reflective microphone the RA200 is the perfect choice for all of your aviation adventures. P/N 13-09292..... $79.75

RUGGED AIR RA620 HELICOPTER HEADSET WITH DUAL VOLUME CONTROL

Rugged Air brings new audio technology with the same proven reliable cup and headband design. With Stay Put full flex boom, Clear Hear performance speakers and a 24 dB noise reduction rating ATC will come through loud and clear. Always be heard with the all new designed EM56 noise reflective cup microphone with wind blocking foam mic muff. Other features include volume control, 3.5mm music input port for Ipods and MP3, Foam Fit ear seals, and an adjustable stainless steel headband.

Finish it off with Military grade U174 plug, tough durable coil cord, and Total Shield cabling. The Rugged Air RA620 headset is the perfect choice for all of your flying adventures. Full Factory 7 Year Warranty.

P/N 13-10016.....$148.50

RUGGED AIR HEADSET ACCESSORIES

Description	Part No.	Price
Straight cord for music (IPod or MP#)	13-09295	$5.55
Cloth Ear Covers	13-09298	$7.90
Small Foam Ear Seals	13-09299	$10.00
Large Foam Ear Seals	13-09300	$11.65
Gel Ear Seals	13-09301	$21.70
Wind Blocking Foam Mic Muff	13-09302	$4.95
Deluxe Foam Headpad	13-10017	$15.00
Pillow top Headpad	13-09303	$38.75
Push-to-talk	13-09304	$33.75
GA to Helicopter Adapter	13-09305	$33.50
Helicopter to GA Adapter	13-09307	$33.50
RA200 Main Cable	13-09311	$39.95
RA900 Main Cable	13-09312	$46.50
RA950 Main Cable	13-09313	$61.85
Large Headband	13-10018	$14.95
Small Headband	13-10019	$14.75
Mic: EM56 Amplified Electret Aviation Impedance	13-10021	$14.95
Electret Mic for flex boom non amplified	13-10022	$15.00

AV

POWDER PUFF HEADSETS – HELMET LINERS

DRE-8001 HEADSET WITH LYNX BLUE-TOOTH CONTROLLER

The Lynx provides a Bluetooth capable interface to allow the use of cell phones as well as audio units for the user without interfering with the normal aircraft communications. Features Bluetooth connectivity for up to 8 different devices and also provides cell phone and music jack inputs. The Bluetooth system can be upgraded so that it is never obsolete. If you do not have a Bluetooth advice, you can still enjoy the phone or music device you have through the 1/8" inputs provided. An E6B computer is incorporated as well as numerous stopwatch functions, fuel and approach timers. ANR power for your headset can be provided from the Lynx as well.

GA Plug ..... P/N 11-10719 ..... $589.00
Helicopter Plug ..... P/N 11-10720 ..... $589.00

POWDER PUFF PINK HEADSETS

Pink Powder Puff Pilot headsets, available in PNR and ANR models, are built by a leading avionics manufacturer that specializes in FAA-qualified aviation headsets. Each Powder Puff Pilot headset is hand-made by skilled engineers, and built with an electret microphone and advanced special noise attenuation technology to provide a comfortable audio environment. Both models feature a flexible boom assembly that allows you to adjust the mic to a position that's just right for you. Powder Puff Pilot is so confident of the quality of our headsets, we offer a 3-year warranty on all headset parts and service. Another guarantee: the distinctive Powder Puff Pilot logo in pink on pink on the non-mic earcup is certain to keep flyboys' hands off your headset!

Operating Instructions: ANR, PNR. Specifications and Noise Attenuation Data: ANR, PNR . Warranty. Active Noise Reduction (ANR) or Passive Noise Reduction (PNR)? The ANR headset can isolate, offset, and cancel environmental noise. Compared with conventional (PNR) headsets, the ANR model reduces background noise to provide a quieter, more comfortable flight. Its noise-canceling circuitry increases comfort and decreases pilot fatigue, improving communication and safety. This ANR model accommodates both stereo and mono intercom systems.

The PNR model offers a more affordable option—especially suitable for student pilots and passengers—delivering a perfect combination of noise reduction, clear sound, and comfortable fit. PNR headsets obstruct annoying noise and amplify communication signals for crystal clear voice transmission.

Description	Part No.	Price
Powder Puff ANR Headset	11-08095	$302.00
Powder Puff PNR Headset	11-08096	$179.95

MGL AVIONICS MGL-880 HEADSET

High class anthracite look, metal frame - hand adjustable, no tools required. Very comfortable headband resulting in no pressure points due to light overall weight Operates as mono or stereo headset with volume and balance controls and very good audio quality. Super soft gel ear seals with soft material allows for a good acoustic seal even if you are wearing glasses. Very high passive noise suppression figures over the full audio band. Filtered, noise canceling microphone. Gold plated connectors and high quality, long life cable. Reversible microphone boom. The headset features two volume control knobs - one on each earcup. Specifications: Stereo and mono operation, Soft silicone gel filled earcups, Gold plated Headphone and Microphone plugs, Metal swivel gooseneck and metal microphone boom, Extremely light and strong at only 20.5oz / 580g, Excellent passive noise reduction rating of 27dB, Clear frequency response from 20-17,000Hz, distortion free through entire range, Adjustable open foam cushioned headband, Quick response noise canceling filter amplified electret microphone with wind muff, Conforms to FAA TSO C57a and TSO C58a

P/N 11-09437 ..... $127.75

HEADSET BUYBACK PROGRAM

Aircraft Spruce accepts the return of most models of headsets for credit-towards the purchase of certain high end ANR headsets. Please call or email our sales team for pricing and availability on trading in your headset at 877-477-7823 or info@aircraftspruce.com.

Used headset credit will be applied to your Aircraft Spruce account which can then be used towards the purchase of a new headset over $750 value (only one used headset will be accepted towards the purchase of one of these new headsets). Used headset must be complete, having all accessories, and the unit must be in good cosmetic and working condition. Any unit not meeting this requirement may receive a lesser credit value or have the unit returned.

AIRCRAFT SPRUCE HEADSET TRADE-IN PROGRAM

We are glad to offer you the opportunity to trade-in your old headset and upgrade to a new top-of-the-line headset. There is a chart below which contains the trade-in values for you current headset as well as the headsets that are eligible for our trade-in program. All headsets must be in working condition with all original accessories included. Full credit will be given if your headset meets our criteria. All trade-in headsets are subject to inspection. Some headsets due to their age do not have any resale value and will not be returned to the customer. One headset per trade-in. Only applies to the purchase of: • Lightspeed Zulu • Bose A20 • David Clark X-11 • Beyerdynamic HS600 • Sennheiser HMEC 460 • Telex Stratus 50 Digital

Trade-up Model Headset	Trade Credit Amount
Bose X	$350
David Clark X11	$325
Telex Stratus 50	$325
Sennheiser HMEC 400 Series	$300
Any David Clark*	$150
Any other manufacturer headset	$50

*Will accept the following headsets (H10-13.4, H10-20, H10-30, H10-56, and H10-60)

** All Headsets must be equipped with current style plugs**

SEE AIRCRAFTSPRUCE.COM FOR COMPLETE DETAILS

ZETA™ / ZETA II™ HELMET LINERS

Visco-elastic foam sewn into cool, washable wear-resistant fabric. Eliminates top-of-head hot spots. Self-wicking fabric controls heat buildup by evaporative cooling of perspiration. Eliminates "bob and roll" when mounting external equipment. Lighter weight than other liners. Fitting only takes a few minutes. Testing shows these helmet liners reduce skin temperature 1.5°F compared to existing liner systems.

Both liners come in four thicknesses: 1/4", 3/8", 1/2" and 5/8". The most commonly used thickness is 3/8".

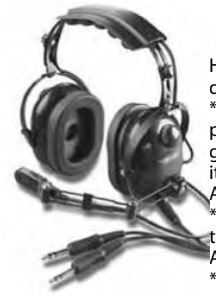
Visit our website for the Application, Installation, Cleaning Instructions, and Sizing Chart in pdf format.

Zeta™ Helmet Liners							
Size	Thickness	Part No.	Price	Size	Thickness	Part No.	Price
12"	1/4"	11-09857	$89.95	15"	1/4"	11-09872	$89.95
12"	3/8"	11-09858	$89.95	15"	3/8"	11-09873	$89.95
12"	1/2"	11-09859	$89.95	15"	1/2"	11-09874	$89.95
12"	5/8"	11-09861	$89.95	15"	5/8"	11-09875	$89.95
13"	1/4"	11-09862	$89.95	16"	1/4"	11-09876	$89.95
13"	3/8"	11-09863	$89.95	16"	3/8"	11-09877	$89.95
13"	1/2"	11-09864	$89.95	16"	1/2"	11-09878	$89.95
13"	5/8"	11-09866	$89.95	16"	5/8"	11-09879	$89.95
14"	1/4"	11-09867	$89.95	17"	1/4"	11-09881	$89.95
14"	3/8"	11-09868	$89.95	17"	3/8"	11-09882	$89.95
14"	1/2"	11-09869	$89.95	17"	1/2"	11-09883	$89.95
14"	5/8"	11-09871	$89.95	17"	5/8"	11-09884	$89.95

Zeta II™ Helmet Liners							
Size	Thickness	Part No.	Price	Size	Thickness	Part No.	Price
15"	1/4"	11-07970	$89.95	17"	1/4"	11-07978	$89.95
15"	3/8"	11-07971	$89.95	17"	3/8"	11-07979	$89.95
15"	1/2"	11-07972	$89.95	17"	1/2"	11-07980	$89.95
15"	5/8"	11-07973	$89.95	17"	5/8"	11-07981	$89.95
16"	1/4"	11-07974	$89.95	18"	1/4"	11-07982	$89.95
16"	3/8"	11-07975	$0.00	18"	3/8"	11-07983	$89.95
16"	1/2"	11-07976	$89.95	18"	1/2"	11-07984	$89.95
16"	5/8"	11-07977	$89.95	18"	5/8"	11-07985	$89.95

AV

ASA AIRCLASSICS HEADSET WITH FLEX BOOM



HS-1A Headset features: * Earcups of high-density acoustic foam * High fidelity speakers * Electret, noise-canceling microphone * Gold-plated microphone and headphone plugs *High-grade, multi-strand wire * Stereo/mono capability * Large, dual controls * Microphone muff * Adjustable headband with easy thumb screws * Quality foam ear seals and light weight add to overall comfort * Sleek, all-Black design with ASA silver wings silk-screened on each earcup * Sturdy and reliable - yet reasonably priced for maximum value * Lifetime warranty.

HS-1 Headset features: * Lifetime warranty * Stereo / mono capability * Earcups of high-density acoustic foam * High fidelity speakers for clear, natural sound * Electret, noise-canceling microphone reduces background noise and allows clearest voice transmission * Gold-plated mic & headphone plugs ensure best connection & resist corrosion * High-grade, multi-strand wire improves cable life * Large, dual controls for quick, easy volume adjustment of each ear * Microphone muff * Adjustable headband with easy thumb screws eliminates "hot spots" and accommodates eyeglasses and any head size * Quality foam ear seals and light weight add to overall comfort * Sleek, all-Black design with ASA silver wings tastefully silk-screened on each earcup * Sturdy and reliable - yet reasonably priced for maximum value.

ASA Airclassics Headset HS-1A.....P/N 11-07809.....$114.95

SAFETYCELL HEADSET/ CELL PHONE ADAPTER

The Standard SafetyCell (pictured)utilizes sophisticated solid state circuitry to mix your cell phone and radio signals together and bring them into your headset where you can hear them clearly. It is small enough to fit in the corner of your flight bag and only weighs 6 oz. It does not require any batteries. It is compatible with any cellular telephone that accepts a hands free system (i.e. has a 2.5mm jack on the phone). Some phones do require an adapter to work properly. This unit works without batteries so you must have a VOX style intercom for it to work properly.

NOTE: This will only work in an extremely quiet environment; the Standard SafetyCell is not amplified.

The Amplified SafetyCell is similar to the Standard SafetyCell but power packed with features. It is our most popular model. The amplified SafetyCell filters your radio and cell phone signals, cleans them up and then amplifies your cell phone volume by as much as 600%, depending on your phone/headset combination. This is the unit you will want if your plane is on the noisy side or if you have "mature" ears. Must be plugged into your VOX mic jack to work properly. It can also be used with the optional battery pack for "out of the plane" use.

The Bose 6 Pin SafetyCell model is for those that have a built in Bose headset and do not use the Bose battery pack. This model is an amplified SafetyCell that is especially altered for the Bose headset circuitry. No batteries are required. The Bose 6 pin model fits between your headset and the panel to give you seamless intergration of your cell phone and radios. The standard Bose locking connectors are supplied.

The Helicopter SafetyCell amplifies the cell phone by an incredible 12db and uses the standard military (NATO Style) single plug interface. This is the loudest SafetyCell we make!

Safety Cell Standard.....P/N 11-03003.....$99.00
Safety Cell (Amplified).....P/N 11-01350.....$156.95
Safety Cell Bose 6 pin.....P/N 11-03009.....$269.00

AKG AV100 ANR HEADSET WITH BLUETOOTH

The AV100 features class leading hybrid active cancelling to cut out cockpit noise on every flight. It comes with full Bluetooth® connectivity that enables phone calls as well as listening to music. The additional AUX Input expands the connectivity options to Non-Bluetooth devices. The selectable audio priority enables the pilot to set his communication options as desired. The integrated map light LEDs are positioned at the end of the ear cups. The AV100 comes with a 6-pin (LEMO) plug and an adapter cable to dual (GA) plugs. A premium carrying case, batteries and a spare microphone windscreen are included in the package. P/N 11-12862 ..... $1,099.00

AVCOMM AC-260 PNR™ HEADSET

Features: • AVCOMM's exclusive P/NR™ audio technology • Perfect for kids or those who need a smaller headset • Simple & affordable desigN • Larger volume control knob — easy for a child to use • Ultra-lite Neodymium speakers • Lighter weight for added comfort • Higher noise attenuation • Acoustic mic muff included • Full 5 yr factory warranty. P/N 11-02260 .....$143.17

AVCOMM AC454 P/NR STEREO HEADSET

Features: • AvComm's exclusive P/NR™ audio technology • Full spectrum stereo response •Each ear cup features an independent volume control • Ultra-lite Neodymium speakers • Built in Push-to-Talk • M-65 mic w/active filtering chip • 4-way adjustable wire boom • Deluxe Comfort package incl. • Full 5yr factory warranty P/N 11-02261 .....$197.16

AVCOMM AC747 P/NR CONVERTIBLE HEADSET

Features: • Exclusive P/NR™ technology and "plug and fly" design • Converts from general aviation to helicopter use (both cables included) • Full flex boom • Ultra-lite Neodymium speakers • Each ear cup features an independent volume control • M-65 microphone with active filtering chip • Deluxe Comfort Package incl. • 5yr factory warranty

P/N 11-02262.....$292.53

AC900 P/NR CONVERTIBLE HEADSET

Features: Color: Green • P/NR™ audio technology and full spectrum stereo response • Ultra-lite Neodymium speakers • M-65 microphone with "active filtering" chip • Full flex boom • Built-in push-to-talk • Mono-stereo switch built into the cord • Each ear cup features an independent volume control • Deluxe comfort package with deluxe gel ear seals • Full 5yr warranty.

P/N 11-02263 ..... $260.73

AVCOMM AC200 P/NR HEADSET

Features: • Simple & affordable P/NR™ performance • Incredible voice clarity • Higher noise attenuation • Ultra-lite Neodymium speakers • Volume control and easy to adjust stainless steel headband • Acoustic foam ear seals and acoustic mic muff • M-65 microphone with active filtering chip • Lightweight; 13.4 oz. • 5yr. factory warranty. P/N 11-02259 .....$125.46

AVCOMM ACCESSORIES

FLIGHT BAGS		Part No.	Price
P3-A01	Personal headset bag	11-02275	$18.55
P3-002	Duffle style flight bag	11-02276	$32.50
P3-A02	Deluxe duffle style flight bag	11-02277	$55.75
COMFORT ACCESSORIES			
P1-006	Foam ear seals - pair/small	11-02280	$10.50
P1-007	Foam ear seals - pair/large	11-02281	$11.21
P1-009	Deluxe gel ear seals - pair	11-02282	$24.04
P1-004	Deluxe cloth ear covers-black	11-02283	$5.27
P1-022	Acoustic mic muff	11-02284	$4.70
P1-024	Acoustic mic muff	11-02285	$4.70
P1-041	AvComm deluxe head pad	11-02286	$15.20
PARTS & ADAPTERS			
P2-001V2	Deluxe PTT switch	11-02287	$36.27
P2-004	Adapter - GA to helicopter	11-02288	$41.39
P2-005	Adapter - helicopter to GA	11-02289	$42.45
P2-009	Headset extension cord - 5ft.	11-02290	$48.89
AC-I0410	Solderless Radio Adapter	11-02269	$60.36
P2-010	Headset splitter	11-02291	$63.28
P2-121	Gen. aviation straight cord	11-02293	$47.22
AC-I0421	Headset Jack Kit (12ft)	11-02273	$69.75
MICROPHONES			
AC-454	Replacement Mic for AC-454 Headset	11-08807	$57.39
AC-747	Replacement Mic for AC-900, AC-910, AC-920 Headsets	11-08808	$57.39

LYNX MICRO SYSTEM

The Micro System is a unique self contained intercom system which is plug and play compatible with any radio. This equipment is extremely popular for use is open cockpit aircraft and is the market leader for use in ultralight, powered parachutes, etc.

MICROSYSTEM COMPONENTS

Part No.	System Equipment	Description	Price
11-05346	Micro System Headset	Self contained intercom headset.white*	$554.00
11-05350	Micro System Helmet	EU certified protective helmet. S	$299.00
11-05351	Micro System Helmet	EU certified protective helmet. M	$299.00
11-05352	Micro System Helmet	EU certified protective helmet. L	$299.00
11-05353	Micro System Helmet	EU certified protective helmet. XL	$299.95
11-05354	Helmet Visor Standard	Attaches to the helmet with screw fixings.	$88.00
11-09310	High Visibility Visor	For use with Lynx helmets large	$89.95
11-11196	High Visibility Visor	For use with Lynx helmets standard	$383.00
11-05364	Leather Helmet	Soft leather helmet for headset large	$383.00
11-05347	Headset Coup. Adap.	Connects two headsets together.	$49.50
11-05348	Headset Switch Adap.	Switch-on a single headset.	$26.50
11-05349	Dual Charger	Wall charger headsets.	$128.75
11-05356	Visor Extension	Wind deflector chin guard for visor.	$50.50
11-05357	Helmet Bag	Cloth bag for a helmet and visor.	$15.95
11-05358	Headset Bag	Cloth bag to protect a headset.	$14.00
11-05359	Headset Exten. Lead	Used to extend the headset leads.	$110.00
11-05360	Panel Exten. Lead	Extension lead with panel socket.	$145.75
11-05361	Headset Panel Adap.	Converts lead socket into panel.	$104.75
11-05362	Headset Lead Splitter	Used to connect several headsets together.	$195.75
11-05363	Headset Lead Comb.	Connects several interface units together.	$195.00
11-05365	Helmet Goggles	For use with either type of helmet.	$136.75
11-05366	Double Helmet Bag	Large bag for complete systems.	$179.00
11-07092	Radio Splitter + Coiled Radio Lead	Connects in-line with a headset and provides connections for an additional device.	$519.00
11-07093	Coiled Radio Leads	Connecting different radios to portable interface equipment.	$44.50
11-07094	Straight Radio Leads	Connecting different radios to portable interface equipment.	$42.00
11-07095	Car Charger	Charges two headsets at the same time.	$119.75
11-07096	Audio Output Lead	Connecting professional recording equipment to the Micro System	$36.50

*See Website for other colors

HELMET SIZES:

To obtain the correct size of helmet, use a tape measure to measure the circumference of your head just above the ears.

Small: 55-57cm (22")
Medium: 57-59cm (23")
Large: 59-61cm (23.5")
Extra Large: 61-63cm. (24.5")

LYNX G3 PNR MICRO SYSTEM HEADSET

The G3 headset is the latest Passive Noise Attenuation (PNR) version of the Micro System headset. A fifty percent increase in available headset volume and immunity to aircraft transponder and mobile telephone interference. Digital power management which protects the battery. A switch is also provided on the headset to disable the battery if the headset is only used with a Powered Radio Interface and the battery function is not required.

Description	Part No.	Price
Lynx G3 Pnr Micro System Single Headset Package	11-12178	$718.00
Lynx G3 Pnr Micro System Add On Headset Package	11-12179	$609.00
Lynx G3 Pnr Micro System Dual Headset Package	11-12180	$1,310.00
Lynx G3 Pnr Micro System Single Headset Helmet Package	11-12181	$1,099.00
Lynx G3 Pnr Micro System Add On Headset Helmet Package	11-12182	$1,000.00
Lynx G3 Pnr Micro System Dual Headset Helmet Package	11-12183	$2,094.00

LYNX G4 ANR MICRO SYSTEM HEADSET

The G4 headset is the latest digital Active Noise Reduction (ANR) version of the Micro System headset which also includes a digital Voice Controlled Microphone (VCM). Monitors the level of background noise inside the ear-cups and generate an equal volume of anti-noise. The ANR function can be switched on or off. Contains an intercom circuit and a rechargeable battery located in the headband. Connecting two or more headsets together forms an intercom providing communication for a minimum of fifty hours.

Description	Part No.	Price
Lynx G4 Anr Micro System Single Headset Package	11-12184	$1,060.00
Lynx G4 Anr Micro System Add On Headset Package	11-12185	$957.00
Lynx G4 Anr Dual Headset Package	11-12186	$2,017.00
Lynx G4 Anr Micro System Single Headset Helmet Package	11-12187	$1,453.00
Lynx G4 Anr Micro System Add On Headset Helmet Package	11-12188	$1,353.00
Lynx G4 Anr Micro System Dual Headset Helmet Package	11-12189	$2,810.00
Lynx G4 Anr Micro System White Headset	11-12190	$895.95

LYNX POWERED RADIO INTERFACE AND RADIO POWER LEAD

The Powered Radio Interface provides the facility to connect a radio transceiver and a mobile telephone, music player, or recording equipment to two Micro System headsets. Can be used with either panel mount radios or portable radios.

P/N 11-12526 .....$769.95

MICROSYSTEM ACCESSORIES

Part No.	Radio Equipment	Description	Price
11-05368	Twin Jack Adapter	Converts the headset to twin jack plugs.	$198.75
11-05369	Audio Adapter	Connects a Walkman or mobile telephone.	$415.00
11-05370	Radio Adapter *	Connects one headset to a radio.	$493.00
11-05371	Radio Interface unit *	Connects one or two headsets to a radio.	$517.00
11-05378	Radio/Power Interface unit *	Powers two headsets and a radio. For Type B connections only and these radios: ICOM A3, A22, A6, A24 and ICA5, A23 with the CT-44 adapter. Vertex Standard VXA-100, 120, 150, 200, 210 with the CT-44 adapter. All other radios will require special order.	$478.00
11-05372	Velcro Mount PTT Switch	Velcro fixing PTT Switch.	$85.75
11-05373	Screw Mount PTT Switch	Screw fixing PTT Switch.	$60.75
11-05374	PTT Extension Lead	Two Metre extension lead for PTT Switch.	$73.75
11-05375	PTT Connector and Lead	Special PTT connector with two metre lead.	$33.00
11-05376	Audio Input/Output Lead	Connects a Walkman to an Audio Adapter or Power Interface.	$43.00
11-05377	Mobile Telephone Lead *	Connects a mobile telephone to an Audio Adapter.	$54.50
11-05379	Power Supply Lead	Connects aircraft battery to Power Interface.	$54.50
11-05380	Power Supply Filter	Used to filter aircraft power supply.	$135.75
11-05381	Large Power Filter	Used with very noisy power supply.	$65.75
11-05382	Radio Power Filter	Used to prevent feed-back with Icom A2/A20 Radios.	$105.00
11-05383	Radio Power Adapter 11V13	Used to connect Icom A6/A24 radios to a Power Interface.	$133.75
11-05384	VHF Antenna -Short Flexible	Antenna for use with airband radios.	$111.75
11-05385	VHF Antenna -1/4 Wave Whip	Antenna for use with airband radios.	$113.75
11-05386	Antenna Extension Lead	Five metre extension for antenna.	$52.75
11-05387	Adapter LA-25	Used to connect Cobra FRS and GMRS radios.	$86.00
11-05388	Adapter LA-30	Used to connect Yaesu VXA 100 radios.	$86.00
11-05389	Adapter LA-44	Used to connect Yaesu VXA 100/120/150/200/210/220 radios.	$86.00
11-05390	Adapter CT-44	Used to connect Icom A5/A6/A23/A24 radios.	$46.50
11-05391	Adapter CT-91	Used to connect Vertex Stadard radios.	$46.50
11-05392	Adapter CT-96	Used to connect Yaesu VXA 300/700 radios.	$46.50
11-05393	Power Lead Adapters	Used to connect various radios to a Power Interface.	$51.00

*Please specify the make and model that will be used with this product.

LYNX PILOT SYSTEM

The Pilot System is a range of headsets and helmets for use in light aircraft and helicopters. The main advantage of these products are that they provide an integrated headset and helmet system for use in aircraft which have standard twin jack intercom equipment already installed. Headset Colors: Black, White, Grey, Red, Pink, Blue, Yellow or Green

Part No.	System Equipment	Description	Price
11-05394	Pilot System Headset + Lead	Standard general aviation headset.	$510.00
11-05395	Twin Jack Headset Lead	Interchangeable lead for Pilot headset.	$98.00
11-05396	US NATO Headset Lead	Interchangeable lead for Pilot headset.	$104.00
11-05397	UK NATO (Euro) Headset Lead	Interchangeable lead for Pilot headset.	$85.00

NOTE: Pilot System uses the same helmet, helmet visor, visor extension, leather helmet, helmet goggles, helmet bag, headset bag, and double helmet bag as the Micro System. Order part numbers as shown for Micro System Components.

LYNX RELAI SYSTEM

The relai System is a range of headsets and helmets for direct connection to hand-portable radios. This equipment also provides the facility to use a helmet with the headset and is used mainly by pilots of single seat aircraft, Paramotor pilots and airport ground crew. Headset Colors: Black, White, Grey, Red, Pink, Blue, Yellow or Green *Please specify the make and model of radio that will be used with the Relai System Headset.

Part No.	Description	Price
11-05398	Relai System Headset + Radio Module.	$491.00
11-05400	Lynx Avionics Relai System headsets to be used with the following radios: Alinco, Cobra, Delcom, Icom A2/A20/ A21,JRC,Maxon,Motorola,Radio Shack, Yaesu FT-23R,YAESU 2000	$17.00
11-05401	Lynx Avionics Relai System headsets to be used with the following radios: ICOM A3/A4/A6/A22/A24 ICOM A5/A23	$46.00
11-05402	Allows Lynx Avionics Relai System headsets to be used with the following radios:ICOM A3/A4/A6/A22/A24/ ICOM A5/A23	$17.00

NOTE: Relai System uses the same helmet, helmet visor, visor extension, leather helmet, helmet goggles, helmet bag, headset bag, and double helmet bag as the Micro System. Order part numbers as shown for Micro System Components.

LYNX ACCESSORIES

Part No.	Spare Parts	Description	Price
11-05403	Ear Seals Type 1 Foam (Two)	For use with all Lynx headsets	$22.00
11-05404	Ear Seals Type 2 Gel (Two)	For use with all Lynx headsets	$44.65
11-05405	Microphone Wind Shield Large (37mm Ø)	Used in an open cockpit. For use with all Lynx headsets.	$10.75
11-05406	Microphone Wind Shield – Small (25mm Ø)	Used in an enclosed cockpit. For use with all Lynx headsets.	$10.00

PUSH-TO-TALK - LEATHER HELMETS

PUSH-TO-TALK SWITCHES

TELEX PT-300 PUSH-TO-TALK SWITCH - Attaches to any control wheel. Simple installation, no tools required. Simply wrap hook and pile strap around control wheel. Provides instant communications when used with any headset or Telex flexible boom mike. With 6 ft. coiled cord, jack and plug. P/N PT-300 ..... $73.75

ECONOMY PUSH-TO-TALK SWITCH - Similar to PT-300, this top quality switch is offered at considerable savings. Features gold contacts for durability. Fully guaranteed.
P/N 11-12100 ..... $12.95

DAVID CLARK C10-15 PORTABLE PUSH-TO-TALK SWITCH - Compatible with all general aviation headsets, recommended for use with David Clark. Dual plunger switch assures positive contact. High quality features are incorporated in every aspect of this switch.
P/N C10-15 ..... $67.75

PTT-400 PORTABLE PUSH-TO-TALK SWITCH - Designed so that the pilot may push downward to invoke the radio transmit function, instead of the traditional "sideways activation" of typical strap-on PTTs. Secures to the top of the vertical handle of the contol yoke with provided velcro tape. Housed at the top of a thin, 1/2" dia. cylindrical enclosure, the soft-touch red push button is rated for 50,000 failure-free operations. 5ft. coiled cable terminates with standard plug & jack. Fast and easy plug-in installation, in virtually any aircaft. P/N 11-02072 ..... $45.50

SIGTRONICS PUSH-TO-TALK SWITCH - This versatile yoke mounted switch features a sealed aluminum alloy case and mounts in a .380" diameter hole. Button is red thermoplastic.
P/N 11-02926 ..... $23.50

NAV-DATA PUSH-TO-TALK SWITCH - Finally, an affordable Push-to-talk switch. Heavy duty construction. With dual internal contacts. Also equiped with a strap to attach to any yoke control.
P/N 13-06089 ..... $24.95

MICROPHONES

TELEX 66T TRANSISTORIZED MICROPHONE - Dynamic, noise-cancelling, hand-held mic. Built-in amplifier is adjustable for full transmitter output. Meets specifications for aircraft and mobile applications. Impedance 50-600Ω. Wt: 9oz. Complete with 5 ft. coiled cord and hanger bracket. Also available with right-angle plug - specify model 66TRA.
P/N 66T $149.75
Right angle plug ..... P/N 66TRA $137.99

TELEX 100TRA DYNAMIC MICROPHONE - Dynamic, noise-cancelling, amplified, handheld mike. Push-to-talk switch is in front. Handsome beige and black with walnut grain trim. Impedance 50-600Ω. Wt. 9 oz. Includes 5ft. coiled cord with right-angle plug and hanger bracket.
P/N 100TRA $134.75

TELEX 38T ELECTRET MICROPHONE - A state-of-the-art high quality noise cancelling microphone designed as a direct replacement for the RS-38 series microphones. Hanger bracket not included. P/N 38T $143.50

TELEX 500T ELECTRET MICROPHONE - Amplified hand-held electret mike features outstanding noise cancellation. Impedance 50-600 Ω (ohms). Weight: 6.5oz. Complete with 5ft. coiled cord, plug and hanger bracket.
P/N 500T $169.95

DAVIDCLARKM-I/DCAMPLIFIEDDYNAMICHEADSET MIC - The M-1/DC Amplified Dynamic headset microphone is a noise canceling type designed to operate in place of carbon and amplified dynamic microphones.
P/N 11-09230 ..... $71.75

DAVIDCLARKM-1AAMPLIFIEDDYNAMICHEADSET MIC - The M-1Amplified Dynamic headset microphone is a noise canceling type designed to operate in place of carbon and amplified dynamic mics.
P/N 11-09225 ..... $67.85

HEADSET MICROPHONE A1060 BLACK - Proper shielding improves noise immunity in aircraft with heated windshields, power inverters, and other sources of electrical noise. Fits all C40 Model Headsets (David Clark, Softcomm, Telex, etc.)
A1060 fits all C40 Models ..... P/N 11-04838 ..... $28.75
Microphone windscreen covers all headsets ..... P/N 11-04840 ..... $1.85

CALL FOR SPECIAL PRICES!

LEATHER FLYING HELMETS

MODEL 711
GOATSKIN HELMET FOR DAVID CLARK HEADSETS

Black (Small)	P/N 11-10505-S	$76.25
Black (Medium)	P/N 11-10505-M	$76.50
Black (Large)	P/N 11-10505-L	$76.50
Black (X-Large)	P/N 11-10505-1	$76.75
Brown (Small)	P/N 11-10510-S	$76.75
Brown (Medium)	P/N 11-10510-M	$76.75
Brown (Large)	P/N 11-10510-L	$76.50
Brown (X-Large)	P/N 11-10510-1	$76.50

MODEL 711K
COTTON CANVAS HELMET FOR DAVID CLARK HEADSETS
Brown with Leather Ear Cut-Outs

Small	P/N 11-10525-S	$61.75
Medium	P/N 11-10525-M	$61.85
Large	P/N 11-10525-L	$61.50

MODEL 711L
FLEECE LINED GOATSKIN HELMET FOR DAVID CLARK HEADSETS

Black (Small)	P/N 11-10515-S	$75.85
Black (Medium)	P/N 11-10515-M	$79.75
Black (Large)	P/N 11-10515-L	$79.85
Black (X-Large)	P/N 11-10515-1	$104.75
Brown (Small)	P/N 11-10520-S	$75.85
Brown (Medium)	P/N 11-10520-M	$79.75
Brown (Large)	P/N 11-10520-L	$79.75
Brown (X-Large)	P/N 11-10520-1	$79.85

MODEL 711M
MESH FOR DAVID CLARK

Small	P/N 11-10555-S	$65.75
Medium	P/N 11-10555-M	$65.75
Large	P/N 11-10555-L	$65.75
X-Large	P/N 11-10555-XL	$64.75

MODEL 712
TRADITIONAL GOATSKIN FLYING HELMET

Black (Small)	P/N 11-10530-S	$57.65
Black (Medium)	P/N 11-10530-M	$57.65
Black (Large)	P/N 11-10530-L	$57.65
Black (X-Large)	P/N 11-10530-1	$57.65
Brown (Small)	P/N 11-10535-S	$57.65
Brown (Medium)	P/N 11-10535-M	$58.25
Brown (Large)	P/N 11-10535-L	$58.50
Brown (X-Large)	P/N 11-10535-1	$58.75

MODEL 712C
TRADITIONAL COTTON CANVAS FLYING HELMET

Small	P/N 11-10550-S	$49.50
Medium	P/N 11-10550-M	$49.95
Large	P/N 11-10550-L	$49.50
X-Large	P/N 11-10550-1	$49.95

MODEL 712L

Black (Small)	P/N 11-10540-S	$59.50
Black (Medium)	P/N 11-10540-M	$59.50
Black (Large)	P/N 11-10540-L	$59.50
Black (X-Large)	P/N 11-10540-1	$59.50
Brown (Small)	P/N 11-10545-S	$59.50
Brown (Medium)	P/N 11-10545-M	$59.50
Brown (Large)	P/N 11-10545-L	$61.25
Brown (X-Large)	P/N 11-10545-1	$58.50

Note: Specify size by completing part no. with -S, -M, -L, or -1 for XL.
Small (19"-20") Med.(21"-22") Large(23"-24") XL(25"-26")

MIC/BOOM KITS FOR AVIATION HELMETS

Now available for aviation helmets the David Clark patented combination flex/wire boom allow for easy, perfect microphone positioning. Each kit is complete with attachment assembly, microphone & cover, and boom with 16" cord for installation.

M-7A mic and flex/boom ass'y Kit for Aviation helmets (High impedance / Civilian radio systems. Model 40688G-24
P/N 11-00866 ..... $105.95

M-87/A1C mic & flex/boom ass'y. Kit for Aviation helmets (Low impedance/military radio systems. Model 40688G-23
P/N 11-00867 ..... $84.95

AV

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Prices Subject to Change Without Notice

DAVID CLARK HEADSET ACCESSORIES

Description	Part No.	Price
Comfort covers – David Clark Style (sold as a pair)	11-04793	$7.95
Mic Muff -Protects mic on all David Clark and standard size headset mics. This is not a foam muff.	11-04788	$4.35
Mic Protector M77	11-09262	$3.65
Gel Earseals - Provide optimum comfort and fit all David Clark Headsets.	11-04820	$21.85
David Clark H10 Comfort Gel Undercut Ear Seals	11-01782	$22.95
Foam-Filled Ear Cushions - Soft and durable covers with an all polyurethane core. Fits all David Clark headsets.	11-04787	$8.50
Foam Headband - A light, foam filled headband which snaps on all David Clark Headsets for great comfort.	11-04791	$31.60
H20-10 Gel Ear Seals	11-01828	$51.75
Headset Bag- Nylon Carry bag, Black on Black.	11-00642	$19.50
DC M-4 Mic Muff	11-04819	$3.45
Electret Microphone -Matches David Clark M-4 or equivalent.	11-05896	$45.75
DC Mic Muff - Fits standard electret mic. Foam mic muff w/O-ring.	11-09201	$3.35
Pro X Ear Seals	11-12457	$24.95
Pro X Mic Protector	11-12458	$7.50
Mic Muff M-7 - Designed to operate in place of carbon and amplified dynamic microphones. It will not operate in circuits that do not supply a DC bias voltage.	11-08282	$45.60
Low-Hi Impedance Adapter	11-08283	$159.95
Stop Gap - These eyeglass adapters place a soft coupler between the side of the head and the ear seal to prevent any noise leak and assure a comfortable fit.	11-04785	$4.85
X11 Headpad	11-09264	$24.85
X11 Microphone	11-09263	$78.75
40998G-05 ADAPTER CORD - Designed for wiring into existing avionics built-in intercoms, radios, etc.	11-05542	$68.75
40998G-02 ADAPTER CORD - Optional adapter cord with standard aviation plugs allowing use of the X11P when flying in other than primary aircraft.	11-05547	$110.95
40998G-03 ADAPTER CORD - Optional adapter cord allowing use of the X11P in aircraft already equipped with David Clark ENC "XP" Series panel mount module.	11-05548	$89.95

STRAIGHT CORD (5 FT) WITH PJ-068 & PJ-055 40133G-04 - Increases the versatility of the H10-60 headset. Plugs into the dome connector.
P/N 11-05948 ..... $78.95

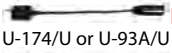
COIL CORD (5 FOOT) WITH PJ-068 & PJ-055 PLUGS 40133G-05 - Increases the versatility of the H10-60 headset. Plugs into the dome connector. P/N 11-05949 ..... $106.95

COIL CORD (5 FOOT) WITH U-174/U PLUG 40133G-06 - Increases the versatility of the H10-60 headset. Plugs into the dome connector. P/N 11-05950 ..... $78.75

PLUG ADAPTER 18253G-01 - Converts PJ-068 & PJ-055 to U-75/U P/N 11-05952 ..... $79.75

PLUG ADAPTER 18253G-02 - 18253G-02 - Converts U-75/U to M642/5-1 (PJ068) and M642/4-1 (PJ055)
P/N 11-05953 ..... $79.75

PLUG ADAPTER 18253G-03 - Converts U-75/U to U-174/U P/N 11-05954 ..... $79.75



PLUG ADAPTER 18253G-04 18253G-04 - Converts U-174/U or U-93A/U to U-75/U P/N 11-05955 ..... $79.75

PLUG ADAPTER 18253G-05 - Converts U-174/U or U-93A/U to M642/5-1 (PJ068) and M642/4 (PJ055). Also converts the Helicopter Single Plug to a Dual Plug configuration for Fixed Wing flying. General Aviation applications only.
P/N 11-05956 ..... $83.95

PLUG ADAPTER 18253G-06 - Converts PJ-068 & PJ-055 to U-174/U. Also converts the Fixed Wing Dual Plug configuration to a Single Plug for Helicopter flying. General Aviation Applications only. P/N 11-05957 ..... $83.75

DAVID CLARK HEADSET ACCESSORIES CONT.

PLUG ADAPTER 18253G-17 - Converts NATO to PJ-068 & PJ-055 P/N 11-05958 ..... $82.75

PLUG ADAPTER 18253G-16 - Converts PJ-068 & PJ-055 to NATO P/N 11-05959 ..... $79.95

PLUG ADAPTER 18253G-18 - Converts U-174/U to NATO P/N 11-05960 ..... $79.75

PLUG ADAPTER 18253G-19 - Converts NATO to U-174/U P/N 11-05961 ..... $79.75

PILOT BLUETOOTH IPOD & IPHONE DONGLE

Use with an iPod or iPhone to stream music to up 2 different BlueLink Adapter at the same time. Features: Bluetooth 2.1 + EDR, compatible with Bluetooth receivers, Made-for-ipod and works-with-iPhone Bluetooth Transmitter, Multi-stream stereo music streaming capability, Tiny size, smaller than other Bluetooth Transmitters for iPods, iPhones, Bluetooth 2.1 + EDR, compatible with Bluetooth receivers .....P/N 11-09254 ..... $59.95

AVCOMM CELL PHONE ADAPTER

Connect your headset to your cell phone using Avcomm's cell phone adaptor. Allows you to have conversations on your cell phone through your headset. Gold plated plug for improved conductivity. For GA dual headsets.
P/N 11-09340 ..... $95.14

LYNX BLUETOOTH ADAPTOR

This bluetooth adaptor allows wireless telephone connections to Lynx equipment. It can be used with an audio adaptor or any interface from the latest range of portable radio equipment. All handsfree functions can be controlled from the adaptor. When used with radio equipment, it supports the radio priority audio mute function and any bluetooth audio is automatically reduced in volume during radio reception. In addition, to further simplify use in an aircraft, the adaptor will automatically answer telephone calls after three rings.

Features:

- Rechargeable (USB), providing a minimum of eight hours talk time and three hundred hours standby time from each charge
- Plug-in connection lead
- Built-in belt clip, may be mounted for convenience using velcro.

P/N 11-09457 ..... $107.85

LYNX BLUETOOTH AUDIO ADAPTER

The Bluetooth Audio Adapter allows wireless connections to a Lynx Micro System headset and can also be used with two separate audio or telephone leads. The adapter is powered from the headset. or from a Radio/Power Interface, and does not require charging. Once paired with a telephone, all of the main handsfree functions can be controlled from the adapter, including: voice dialling. call transfer. call reject and last number redial.The adapter can also be used with audio players to make a wireless music connection. The adapter can be used with Lynx Audio Input/Output Leads, Audio Output Leads or Mobile Telephone Leads. The leads may be used in any combination. When used with the appropriate lead, the adapter allows the connection of mobile telephones, music players and sound and video recording equipment. For connection to recording devices. the adapter provides output at 'Microphone Level' (with Audio input/Output Lead) or 'Line Level' (with Audio Output Lead). The adapter is particularly useful for adding audio devices to an existing system or to increase the number of audio connections in general. The adapter is backwards compatible with all Lynx Micro System products. P/N 11-10446 ..... $526.00

HEADSET ADAPTERS

PILOT USA SMARTPHONE DIGITAL AUDIO ADAPTER

Turn your Smartphone or Tablet (iPhone, iPad, Android, Windows Phone, etc.) into a Cockpit Voice Recorder! You'll be able to record audio through your aviation headset. Your Smartphone will be able to record all transmissions through the Intercom systems including in-cabin and ATC transmissions. Great for CFI's and Students to review radio communication skills after the flight!

P/N 11-10531 ..... $49.95

ANR HEADSET RETROFIT KIT

The ANR Adapter is a product that will transform a current aviation headset into a high-tech active noise reduction unit. The ANR Adapter comes as a kit and includes a pair of inserts that fit more than 20 different headset models. Installation requires fitting the inserts, drilling a small hole in one earcup for the power receptacle, and soldering the original cable leads to the kit replacement parts. (uses two 9-volt batteries). IMPORTANT: It is mandatory that you use "silicone gel" type earseals. The original earseals (dry or liquid filled) are not as airtight as gel seals, and in addition do not dampen sound and vibration as effectively. The result is that the ANR units will greatly underperform (20-50%) and will be more likely to malfunction.

David Clark type ..... P/N 11-11955 ..... $159.00
Peltor ..... P/N 11-11956 ..... $179.00

AMP CABLE (AUDIO+MIC+POWER)

A standard ANR upgrade kit comes with a 6' long addon power cable which tie-wraps to your original audio cable, and it requires that you drill a 1/4" hole in the left earcup (next to where the main cable enters the cup). The AMP cable replaces your original cable and has the DC power wires, audio wires and mic wires all in 1 cable. The result is more esthetically pleasing and no additional hole is required in the left earcup.

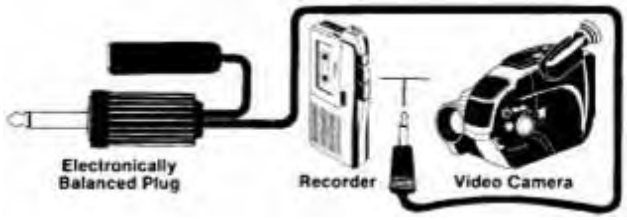
P/N 11-03012 ..... $32.60

LYNX AVIONICS HEADSET CONVERTERS

- Connects twin jack headset or helmet
- Works with speakers from 8 to 600 Ohms
- Accepts dynamic, electret or carbon microphones
- ANR power to microphone jack tip
- Headset volume control
- Maintains selective PTT operation and muting
- Water resistant bayonet locking connector
- Supplied with fixing kit

Lynx Twin Jack Headset Converter ..... P/N 11-09306 ..... $241.00
Lynx Single Jack Headset Converter ..... P/N 11-09307 ..... $239.95
Lynx US NATO Jack Headset Converter ..... P/N 11-09308 ..... $239.95
Lynx UK NATO Jack Headset Converter ..... P/N 11-09309 ..... $239.95

PATCHCORD COCKPIT VOICE RECORDER



PatchCord has electronic circuitry specifically designed to enable direct hook-up between a 600Ω headphone jack and the mic jack of tape recorders and / or most video cameras. The PatchCord has been designed to enable you to record on any tape recorder or video camera, both sides of all your radio communications and all mic equipped persons in the aircraft when used with intercom. If not equipped with intercom, PatchCord enables you to record both sides of all your radio communications if aircraft radio has sidetone. The most advantageous way to use PatchCord is with the intercom and voice actuated tape recorder. Student Pilots: • Great learning aid • Playback of previously recorded tape enables students to review the entire flight lesson, whether it be ATC clearances or flight instruction • Great study aid for the FAA written test • Save recorded tapes of flight lessons as a momento of your student pilot experiences. Other Pilots: • Assists in studying for additional FAA ratings • Back up your memory and your notations by recording your IFR clearances • Record in-flight ATIS and weather reports, enabling you to play back and review in detail that part of briefing you need to know • Use tapes to improve your radio proficiency • Have your own tapes if you have a problem with ATC. P/N 13-01456 ..... $47.50

THE MUSE PERSONAL MUSIC DEVICE

PS Engineering, Inc's The Muse®, as simple and low cost way of interfacing your favorite entertainment device into your aviation headset. The Muse® is a miniature Personal Music Device (PMD) that allows connection of an entertainment source directly to your headset without complicated wiring or permanent installation--no rocket science here. About the size of a 9-Volt battery, The Muse® mates with stereo or mono headsets and has no effect on radio transmissions or intercom functions.

P/N 11-09045 ..... $349.95

IPOD / MP3 MUSIC ADAPTER

This adapter works with your existing intercom by pumping your music into any available mic jack, allowing it to be distributed through the intercom to everyone wearing a headset. Plug one end into the aircraft's mic jack and the other into your media player's headphone jack. * Compatible with ipod, iphone, mp3, CD, laptops, and most other portable media players * Music in your headset without costly upgrades * Listen to music through the aircraft's speaker during pre-flight * Plugs into standard mic jack * Just Plug and Play! No more wearing uncomfortable in-ear headphones under your aviation headset. No need for an expensive new intercom or new headset. This will work in any intercom system with an available mic jack. Maintain the comfort and quiet of your current headset; just add your favorite music! Also works great in many airliners. P/N 11-07541 ..... $19.95

PILOT 24V TO 12V CONVERTER / STEP DOWN TRANSFORMER

24v to 12v Converter / Step-down Transformer. The perfect low-cost 24v to 12v transformer for your 24 volt system aircraft. Run ANY device up to 5 AMPS total current draw. Use this in your experimental to drive a 12V cigarette lighter,12v iPad, etc. Fits in the palm of your hand - it only weights 2 oz.! Rated at 60 Watts, this converter is EASY to wire - Just provide 24volts positive to the RED line, Ground both black wires, and 12 Volts will flow OUT of the YELLOW wire. Simple as that! The least expensive 24v converter on the market! P/N 11-12192 ..... $17.95

SHEEPSKIN HEADSET PAD

Universal Sheepskin Pad for Headsets

P/N 13-12358 ..... $19.95

HEADSET CUSHION

For headsets with single 5/8" wide headband springs (Aviall, David Clark, etc.) and Telex ProAir 2000E and ANR-type headsets. Eliminates top-of-the-head pressure.

P/N 11-02858 ..... $13.50

MICROPHONE WINDSCREENS

PA-10M - Flightcom: 4DX, 5DX. Skycom H-40A, h-80A. Sigtronics: S-68, S-20. Peltor LE Sport, 7004, 7104. Telex: Stratus, Airman 750, ANR 150. David Clark: H 10-40, H-10-80, 10-20, 10-21, 10-26, 10-6-, 13.4.Pilot Hdsts: P-51, 11-40, all anrs. PN 11-05808 ..... $1.95

M-87 - Any headsets using M-87 Microphones (usually the mics in helmets such as Gentex or Gallet)

PN 11-05810 ..... $1.20

PILOT HEADSET EAR COVERS

Prevent that sweaty-sticky feeling! Great for the soft comfortable fit you want! They are perfect for loaner headsets - just wash em anytime! They fit David Clark and many other similarly sized headset shells. Packaged in pairs. Made of soft comfortable knit fabric in Black to suit any headset color. P/N 11-12191 ..... $5.95

HEADSET UPGRADE KITS

For considerably less than the cost of a new headset, you can upgrade the headset you already own to improve comfort and performance. You'll experience improved intelligibility and transmission clarity, and you'll enjoy pain-free, cool, dry ears. Comes with: A-SoftTop® Headset Cushion, B- SoftSeal® Ear Cushions, C- SoftSkin® Ear Seal Covers, D- HushKit® Passive Ear Cup Noise Attenuation Kit, & E- MicMuff® Microphone Cover.

David Clark Upgrade Kit ..... P/N 11-07808 ..... $129.00
Bose® Headset Upgrade Kit ..... P/N 11-06309 ..... $92.50

AV

HEADSET ACCESSORIES

HEADSET & HELMET ACCESSORIES BY OREGON AERO

Individual Oregon Aero® Upgrade components are available for the Headset & Helmet models listed.

OREGON AERO® SOFTTOP® HEADSET CUSHIONS

- Eliminates top-of-head pressure. 100% plush sheepskin wool. Keeps head cool or warm. Moisture-proof, self-wicking action. Flexible leather backing. Customized mount of either rubber extrusion or nylon with hook/loop wrap.

10006 SoftTop® Headset Cushion for David Clark and David Clark Clones ..... P/N 11-10905 ..... $29.95
10006D SoftTop® Headset Cushion with D ring for David Clark and David Clark Clones ..... P/N 11-10906 ..... $30.85
10020 SoftTop® Headset Cushion for Bose® Aviation Headset X™* and Bose® A20™ ..... P/N 11-08679 ..... $29.95
10016 SoftTop® Headset Cushion for FlightCom Denali, LightSpeed QFR, Sennheiser 100/300, Telex Air 3000,3100,3500,4000,4100,4105,A NR 150, Echelon 100/150, ANR1-D,MRB-600 ..... P/N 11-10915 ..... $29.95
10017 SoftTop® Headset Cushion for Peltor 7000 series
P/N 11-10903 ..... $31.00
10004SoftTop® Headset Cushion for Telex Airman 750
P/N 11-10902 ..... $11.50

OREGON AERO® SOFTSEAL® EAR CUSHIONS -

Conform to your head. 200-300% more volume for total comfort. Smooth, soft, washable synthetic leather cover over temperature and pressure sensitive visco-elastic foam core. Great with eyewear or earrings. Eliminate ear pressure. Attach with flange, adhesive ring or snap-on mount, depending on headset type.

20005 SoftSeal® Ear Cushions (1 1/8") for David Clark and David Clark Clones ..... P/N 11-10917 ..... $49.95
20034 SoftSeal® Ear Cushions for ANR David Clark and David Clark Clones other than X11 ..... P/N 11-10920 ..... $49.95
20007 SoftSeal® Ear Cushions for Bose® Aviation Headset X™* and Bose® A20™ ..... P/N 11-08680 ..... $49.95
20020 SoftSeal® Ear Cushions for Peltor 7000 Series, LYNX, and Sennheiser HMEC 200/222 Headsets ..... P/N 11-10921 ..... $56.75
20002 SoftSeal® Ear Cushions (¾") for SPH-4B®*, SPH-5®*
P/N 11-10928 ..... $49.95
20050 SoftSeal® Ear Cushions (¾") For Plastic Ear Cups In SPH-4®* and HGU (Sonex) Helmets ..... P/N 11-08681 ..... $49.95

OREGON AERO® SOFTSKIN® EAR SEAL COVERS -

Keep your ears even drier and cooler and add to product life by slipping SoftSkin® Ear Seal Covers over SoftSeal® Ear Cushions. Self-wicking reduces perspiration buildup. Especially helpful in hot, humid climates. They fit loose, not tight like a drum (this is important because tight cloth covers produce pressure on the ear, causing pain).

29118 SoftSkin® Ear Seal Covers (1 1/8") for David Clark and David Clark Clones P/N 11-10930 ..... $10.95
29034 SoftSkin® Ear Seal Covers for 3/4" SoftSeal® Ear Cushions
P/N 11-10929 ..... $10.95

OREGON AERO® HUSHKIT® PASSIVE EAR CUP NOISE ATTENUATION KIT -

Testing shows the HushKit® Passive Ear Cup Noise Attenuation Kit performs better than ANR headsets in the 700-7000Hz mid-range where hearing loss Dramatically improves noise attenuation and intelligibility.

92005 HushKit® Passive Ear Cup Noise Attenuation Kit for David Clark and David Clark Clones P/N 11-10934 ..... $29.95
92056 HushKit® Passive Ear Cup Noise Attenuation Kit for HGU-56 Helmets P/N 11-06312 ..... $29.95
92050 HushKit® Passive Ear Cup Noise Attenuation Kit for SPH-4®, SPH-4B® , SPH-5® or HGU (Sonex) helmets. P/N 11-06311 ..... $29.95

OREGON AERO® SOFTSEAL/HUSHKIT® COMBO -

An ear seal and insulation kit in one — one giant shock absorber. Replaces triangular leather earpad or upgrades plastic Ear Cup. Eliminates pain.

28734 SoftSeal/HushKit® Combo for Telex 750 and 850 (¾" thick)
P/N 11-10918 ..... $56.75
28034 SoftSeal/HushKit® Combo for HGU Civilian Helmets (¾" thick)
P/N 11-08682 ..... $79.95
28118 SoftSeal/HushKit® Combo for HGU Civilian Helmets (1 1/8" thick) P/N 11-08684 ..... $79.95

HEADSET MICMUFF™ MICROPHONE COVERS

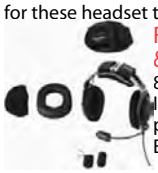
Eliminates cockpit noise from radios and intercom. Greatly improves intelligibility. MicMuff™ functions as an acoustic baffle and must be used on all headsets installed in the communications system. Adaptable to all mics, electret or dynamic. Doesn't blow away.

Amplified Dynamic MicMuff Mic Cover ..... P/N 11-10937 ..... $13.95
Electret MicMuff Mic Cover ..... P/N 11-10938 ..... $13.95
Military Dynamic (M-87) MicMuff Mic Cover ..... P/N 11-10939 ..... $13.95

EVERY HEADSET MICROPHONE USED IN AN INTERCOM SYSTEM MUST HAVE THE MICMUFF INSTALLED IN ORDER FOR THE MICMUFF TO BE EFFECTIVE! THE ONLY EXCEPTION IS PUSH-TO-TALK INTERCOM SYSTEMS.

OREGON AERO® COMPLETE HEADSET UPGRADE KITS

The Worlds Greatest Headset Is the One You Already Own!®
With an Oregon Aero Upgrade!®
For best results and best value, we recommend the complete Headset Upgrade Kit which includes all necessary components custom-designed for these headset types.



FOR BOSE® AVIATION HEADSET X™* & BOSE® A20™

83006BX -
Includes: SoftSkin® Ear Seal Covers, MicMuff® Microphone Cover, SoftTop® Headset Cushion , SoftSeal® Ear Cushions
PN 11-06309 ..... $92.50

MILITARY HEADSET UPGRADE KIT FOR DAVID CLARK TYPE HEADSETS -

Electret mic: 83006E.
Dynamic Military Mic: #83006DM
Includes: SoftSkin® Ear Seal Covers, MicMuff® Microphone Cover, HushKit® Passive Ear Cup Noise Attenuation Kit, SoftSeal® Ear Cushions, SoftTop® Ear Cushions .....
PN 11-06310 ..... $132.95
David Clark H10-76 P/N 11-07808 ..... $129.00

J-HOOK HEADSET HANGER

The J-Hook Aviation Headset Hanger is designed to be installed on one of the tube crossmembers in the cockpit of aircraft with exposed tubing upon which to hang your headsets when not in flight. These types of aircraft include Huskies, Cubs, Citabrias, etc. Machined from 6061-T6 aluminum with stainless steel hardware for a lifetime of service. Mounts on 3/4" or 7/8" tubing

J-Hook Headset Hanger 3/4" ..... P/N 11-02409 ..... $39.85
J-Hook Headset Hanger 7/8" ..... P/N 11-02410 ..... $39.85

HEADSET HANGER

• Hang your headset out of the way in a handy fold down bracket. • Secure headset with hold down hook & loop strap. • Headset Hanger - folds neatly out of the way when not in use. • Strong extruded aluminum - black finish • Mount with 2 screws • Made in USA
P/N 11-08615 ..... $34.85

UNIVERSAL AVIATION HEADSET HANGAR

No longer will you have to throw your expensive headset on the glare shield, the seat, or hang it on the control wheels. This easy to install device gets the headset up and out of the way so that it is easier to get into and out of the cockpit without fighting loose headsets. It also protects the headset by getting it up and out of the way.
P/N 11-09312 ..... $18.95

SILICONE GEL EAR SEALS

Gel ear seals conform to the shape of your head, resulting in an airtight fit which is required for proper anr performance. If your earseals are the older dry foam or liquid filled they must be replaced. P/N 11-03011 ..... $21.50

AV

MIC & PHONE JACK HOUSINGS

SINGLE HOLE BLACK ALUMINUM HOUSING - Single-hole aluminum housing for single cord headset jacks (Nexus Jack TJT-120).

Description	Part No.	Price
Single Hole Black	11-09989	$24.95
Single Hole Beige	11-09990	$24.95
Single Hole Aluminum	11-09991	$24.95

SINGLE HOLE MIC & PHONE JACK HOUSING - HOUSING - (1) hole surface mounted. For mic or phone jack. Hole diameter .375 with key. Mount with 4 small screws on outer flang. P/N 11-10747 ..... $16.75

2 HOLE SURFACE MOUNTED MIC & PHONE JACK HOUSING - Mounts flush to any flat surface. Heat-treated aluminum with a powder coat finish. Jacks not included. (See electrical section).

Description	Part No.	Price
Surface Mount, Black	10-01595	$16.50
Surface Mount, Beige	11-01120	$16.50
Surface Mount, Aluminum	11-01130	$16.50

TWO HOLE ALUMINUM HOUSING - Two-hole aluminum housing (no paint) for single cord headset jacks / Nexus Jack TJT-120.

Description	Part No.	Price
Aluminum no Paint	11-09994	$21.75
Black	11-09992	$21.65
Two Hole Aluminum	11-09993	$19.75

2 HOLE RECESSED MIC & PHONE JACK HOUSINGS - Powder coat finish. Comes with a clamp to hold housing securely in place. Jacks not included. Size: 3.0" x 3.75" x 1".

Description	Part No.	Price
Recessed Mount, Black	11-01140	$19.95
Recessed Flush Mount, Beige	11-01150	$19.95
Recessed Flush Mount, Aluminum	11-01160	$19.95

4 HOLE SURFACE MOUNTED MIC & PHONE JACK HOUSING - If panel space is scarce or you'd prefer to locate your headphone jacks in a more convenient spot, this housing is perfect. Mounts flush to any flat surface. Heat-treated aluminum with a powder coat finish. Jacks not included. (See electrical section). Housing only!

Description	Part No.	Price
Black wrinkle finish	11-01195	$18.95
Tan wrinkle finish (Pictured)	11-00365	$18.95
Aluminum (unpainted with holes)	11-00366	$18.95
Aluminum (unpainted NO holes)	11-00367	$17.85

4 HOLE RECESSED MIC & PHONE JACK HOUSINGS - Modified to allow plugs to enter from the opposite side, being recessed they are out of the way. When jacks are plugged in they are flush with the edge of the housing. Made of aluminum, with a powder coat finish. Comes bagged with housing, clamp, mounting screw. Dims: 4"W x 5"L x 1.06"H; Cutout req.: 3.25"W x 4.43"L

Description	Part No.	Price
Black wrinkle finish	11-01939	$27.85
Tan wrinkle finish	11-01940	$28.75
Aluminum (unpainted with holes)	11-01941	$28.75

4 HOLE NEXUS FRONT MOUNT JACK HOUSINGS - Housing-(4) hole .687 dia. surface mounted for nexus jack #TJT-120

Description	Part No.	Price
Black	11-11527	$27.85
Beige	11-11528	$28.75
Aluminum	11-11529	$28.75

MIC / PHONE JACK MOUNTING BRACKET

Mic & Phone Jack Bracket 90 degree under the dash. Also for switches, fuses etc. . A sturdy and attractive mount, sides are formed to hide wires, .063 thick heat-treated aluminum. Black wrinkle powder coat finish. Five styles to choose from for most any installation. Easily installed.

MIC OR PHONE JACK MOUNT 1 HOLE - 1) Hole for either Mic or Phone Mounting Bracket Dimensions- 1.5w x 1.5h x 1.0 deep. Black wrinkle powder coat finish.
P/N 11-01170 ..... $12.95

MIC OR PHONE JACK MOUNT 2 HOLE - (2) Hole Mic & Phone Mounting Bracket Dimensions- 2.3w x 1.5h x 1.0 deep. Black wrinkle powder coat finish
P/N 11-01180..... $12.95

MIC OR PHONE JACK MOUNT VERTICAL 4 HOLE - Bracket-(4) Hole Vertical for Mic & Phone Dimensions- 2.3w x 2.5h x 1.0 deep. P/N 11-01190..... $14.75

MIC OR PHONE JACK MOUNT HORIZONTAL 4 HOLE - Bracket- (4) hole horizontal for either Mic or Phone Dimensions- 4.5w x 1.5h x 1.0 deep.
P/N 11-01942..... $13.95

PLUGS & PANEL JACKS

PLUGS - Made to specification MIL-P-642A. Molded, cord mounting type. Screw-on shell.

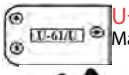
Headphone Stereo Plug 3-Circuit SWC 260 Takes SWL-12B mating jack P/N 11-08308..... $11.50

Headphone Mono Plug, 2-Circuit PJ-055B Takes JJ-034 mating jack P/N 11-04065..... $10.90

Microphone Plug, 3-Circuit PJ-068 Takes JJ-033 mating jack P/N 11-03918..... $16.75

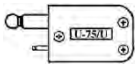
PANEL JACKS - Contact springs are of special alloys for long life. Insulation is high dielectric strength phenolic. Tinned terminal lugs for easy soldering. Short frame. Mounts by 3/8-32 threaded bushing and nut. Open circuit until plug inserted.

Stereo Headphone Jack, 3-Circuit SWC-12B ..... P/N 11-04936 ..... $3.35
Mono Headphone Jack, 2-Circuit JJ-034 ..... P/N 11-03907 ..... $3.65
Microphone Jack, 3-Circuit JJ-033 ..... P/N 11-05995 ..... $5.35
Insulated Flat Washer (SWC S1028) Tan ..... P/N 04-00975 ..... $0.29 ea.
Insulated Flat Washer (SWC S1029) Black ..... P/N 04-00976 ..... $0.74 ea.
Mini Stereo Jack 1/8" diameter ..... P/N 11-09332 ..... $3.85
Mini Stereo Plug 1/8" diameter ..... P/N 11-09333 ..... $8.95



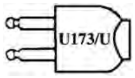
U-61/U JACK – (MIL-C22442/4-1) (NSN 5935-00-689-6052) Mates with U-75/U. P/N 11-00696 ..... $47.00

U-172/U MICROPHONE JACK –(NSN 5935-00-665-7599), Mates w/U-173/U, PJ-292, or MP-101. 2-conductor jack w/nickel-plated beryllium copper contacts assembled into nylon body. P/N 11-00697 ..... $3.50



U-75/U PLUG – (MIL-C-22442/5-1) Mates with U-61/U..... P/N 11-00698 ..... $46.75

4-CONDUCTOR PLUG – (TP-120, U-174/U, U-93A/U, MIL-C9177/1B) (NSN 5935-00-642-0626) Mates with U-92/U, TJ-120 & TJ-102. Jack, and TJ-101 Jack. 1-piece nickel plated brass contacts are integrally molded into plastic body. P/N 11-00699 ..... $13.50



2-PIN MICROPHONE PLUG - (U-173/U, MP-101) (NSN 5935-00-888-5351) Mates with U-172/U, U-179/U, MP-101, & JJ-055. Nickel-plated beryllium copper contacts assemble into nylon body.
P/N 11-00701 ..... $1.85

.206" COMMERCIAL MIC PLUG – (S-267) (PJ-068) Mates w/JJ-033, S-12B, CES830. Black plastic handle with .206" dia. chrome plug. 3 conductors. solder plug and cable clamp. P/N 11-00702 ..... $6.95

.25" COMMERCIAL MONO PHONE PLUG – (S-250) Mono (PJ055B) Mates w/JJ-034, CE80. Black plastic handle w/ .25" dia. chrome plug. 2 conductors. solder plug & cable clamp. P/N 11-00703 ..... $2.45

.25" COMMERCIAL STEREO PHONE PLUG – (S-250; PJ055B) Mates with JJ-034 or CE80. Black plastic handle with .25" dia. chrome plug. 3 conductor. solder plug & cable clamp. P/N 11-00704 ..... $2.25

1/8" STEREO PLUG (3.5MM)– Black plastic handle w/ solder terminals & cable clamp.
P/N 11-00705 ..... $2.25

U174/U PLUG TP-101 - Mates with NEXUS Series TJ-120and TJ-102 jacks and jack TJ-101. One piece monel contacts integrally molded into glass filled nylon plastic. P/N 11-09335 ..... $36.75

FRONT MOUNT JACK TJT-120 - Mates with NEXUS Series TP-120 plugs and plugs TP-101 and TP-102. Same material and construction as the TJ-120. Jack housing is threaded for front mounting by screwing into threaded mounting hole or by inserting into front of panel and securing with nut and lockwasher from behind. P/N 11-09334 ..... $11.85

AV

HEADSET ADAPTERS AND EXTENSIONS

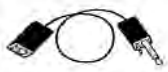
HEADSET EXTENSIONS

HEADPHONE EXTENSION – This heavy duty extension allows a .25" phone jack to be extended by 5ft. Great for customizing an aircraft with rear passenger headphone (listen only) capabilities.
P/N 11-10620 ..... $22.75

HEADSET EXTENSION – This heavy duty extension allows a general aviation headset using PJ-068 & PJ-055B or equivalent plugs to be extended by 5ft. Ideal when aircraft radio or intercom does not allow headset cords to reach comfortably. P/N 11-10640 ..... $47.75

MICROPHONE EXTENSION – This heavy duty extension allows a .206" mic jack to be extended by 5ft. Great for customizing an aircraft with rear passenger microphone jacks.
P/N 11-10625 ..... $22.75

HELICOPTER HEADSET EXTENSION – Extends a headset that uses a U-174/U, U-93A/U or equivalent plug. 5 ft. in length. P/N 11-00688 ..... $48.95



U-75/U EXTENSION – Extends a headset which uses U-75/U plug 5 ft. in length.
P/N 11-00689 ..... $104.95

"Y" ADAPTERS

DUAL HEADSET Y ADAPTER – This heavy duty adapter converts one .25" phone jack into two. Perfect for those who want to connect two headphones to one a/c radio headphone jack. Can be used with stereo or mono headphones and jacks. Length: 2 ft. P/N 11-10610 ..... $28.95

DOUBLE HEADSET Y ADAPTER – This heavy duty adapter converts one set of a/c radio panel jacks, (.206" mic and .25" phone) into two sets. Can be used with any general aviation headset using PJ-068 & PJ-055B or equivalent plugs.
P/N 11-10635 ..... $58.90

DUAL MICROPHONE Y ADAPTER – This heavy duty adapter converts one .206" aircraft radio microphone jack into two. Perfect for those who want to add another push-to-talk position to the radio. Length: 2 ft. P/N 11-10615 ..... $29.95

TRIPLE HEADSET ADAPTER – This high quality adapter converts a set of radio or intercom mic and phone jacks into 3 sets. Sets are one, three and five feet respectively. Great for adding a pair of headset to the back of the aircraft without requiring major installation. P/N 11-00680 ..... $79.95

DUAL HELICOPTER Y HEADSET ADAPTER – This adapter allow a single helicopter radio or intercom jack (TJ-120, TJT-120, TJT-102) to be used by two headsets. Length: 1 ft. Great for adding an additional space for headset without costly installation. P/N 11-00681 ..... $62.75

DIGITAL AUDIO RECORDER ADAPTER FOR GA HEADSETS - This product allows you to interface your Digital Audio/Video Recorder with the aircraft intercom system. Great for creating your own aerial videos without excess cabin noise. Works with devices that use a 3.5mm Stereo External Mic Input like GoPro HD Video Cameras and Digital Voice Recorders. P/N 11-10486 ..... $36.95

24 CONDUCTOR COIL CORD - This coil cord incorporates 24 individual 22-gauge wires, which is the minimum gauge required to connect typical PTT, Autopilot Disconnect, Map Light, Trim and other control wheel-mounted switches. The coiled section of the cord has a retracted length of 6 inches and a generous 18 inches of free length on either end, allowing electrical components to be connected without splicing additional wire.
P/N 11-09937 ..... $249.00

THREE-WAY SPLITTER WITH USB OUTPUT

Three-way splitter with USB output. USB charger output to 5V/500ma. Triple socket with 12V output. A fuse is included. DC 12V using only.
P/N 11-09741 ..... $14.75

AIRCRAFT/HELICOPTER CONVERSION ADAPTERS

.206" JACK Y ADAPTER – This adapter converts a headset with a single .206" plug into one with 2 (standard .206 mic & .25" phone plugs). Length: 9". P/N 11-00682 ..... $32.75

.25" JACK Y ADAPTER – This adapter converts a headset with a single .25" plug into 1 with 2 (standard .206" mic & .25" phone plugs). Length: 9".
P/N 11-00683 ..... $31.50

.206" PLUG Y ADAPTER – This adapter converts a headset w/ dual .206 mic & .25" phone plugs into one plug (.206') headset. Length: 9". P/N 11-00684 ..... $33.75

.25" PLUG Y ADAPTER – This adapter converts a headset w/ dual .206 mic & .25" phone plugs into one plug (.25") headset. Length: 9".
P/N 11-00685 ..... $28.95

STANDARD (MIC/PHONE) TO HELICOPTER ADAPTER – This adapter converts a G.A. headset that has both mic and phone plug into one that uses a helicopter (U-174U, U-93A/U or equiv.) plug. Length: 9". P/N 11-10630 ..... $34.50

HELICOPTER TO STANDARD (MIC/PHONE) ADAPTER – This adapter converts a helicopter (U-174U or U-93A/U) headset that has one plug into a G.A. headset that has both mic and phone plug. Length: 9". P/N 11-10650 ..... $34.50

HELICOPTER ADAPTER – This adapter converts a U-75/U plug to a U-93A/U plug. Length: 5".
P/N 11-00686 ..... $76.75

U-75/U HEADSET CONVERTER ADAPTER – This adapter converts a headset which has a U-174/U, U-93A/U or equivalent type plug into one which uses a U-75/U plug. Length: 9".
P/N 11-00687 ..... $76.75

U-75/U HEADSET CONVERTER ADAPTER – This adapter converts a headset which has a .206" mic and .25" phone plug into one which uses a U-75/U plug. Length: 9". P/N 11-00690 ..... $77.75

U-75/U TO STANDARD PLUGS CONVERTER – This adapter converts a headset which has a U-75/U or equivalent plug into a standard .206" mic & .25" phone plug. Length: 9".
P/N 11-00691 ..... $76.75

TRIPLE HELICOPTER ADAPTER W/7'CABLE

TJT-120 & TJT-102 type Jacks) This adapter allows for 3 headsets to share one 4 conductor panel mount in jack. Backing of converter box comes with commercial grade Velcro adhesive tape for easy attachment to any surface. P/N 11-02752 ..... $128.95

.25" HEADSET PLUG REDUCER

This adapter reduces a single .25 headset plug to a single .206 headset plug. 5" in length.(JB-34)
P/N 11-02748 ..... $20.90

.206 MICROPHONE PLUG REDUCER

This adapter reduces a single .206 microphone plug to a 3.5mm mini plug. 5" in length.(JB-35)
P/N 11-02749 ..... $23.75

HEADSET TAPE RECORDER ADAPTER

This adapter allows you to record conversations through your headset into a portable tape recorder.
(JB-40) ..... P/N 11-02750 $15.75

SPECIALTY ADAPTERS/ IMPEDANCE CONVERTERS

VIDEO RECORDER ADAPTER GA/HELICOPTER – This product allow you to interface your video recorder with the aircraft intercom system. Great for creating your own aerial videos without excess cabin noise. Records sounds transmitted through the intercom system only. Std Version ..... P/N 11-00692 ..... $29.95
Helicopter Version ..... P/N 11-00693 ..... $38.75

GENERAL AVIATION MUSIC PLAYER ADAPTER – This product allows you to input a music device (iPod, MP3 player, CD player, Garmin with XM radio, etc.) directly in to your GA (Dual plug) headset. This will allow music to be heard only through the individual headset it is connected to rather than through the entire intercom system. ..... P/N 11-00694 ..... $31.95

LOW TO HIGH IMPEDANCE ADAPTER – This adapter converts a low impedance mic & military headset into higher impedance for use in general aviation aircraft.
Standard Version ..... P/N 11-10645 ..... $69.85
Helicopter Version ..... P/N 11-00706 ..... $74.50

AV

LIQUID FOAM EAR SEALS

Replacement ear seals for DC40 style headsets. Great comfortable replacement ear seals with foam and liquid interior. ..... P/N 11-02737 ..... $19.70

FOAM EAR SEALS

Replacement ear seals for DC40 style headsets. All foam interior with comfortable exterior. These superb ear seals will make you think twice before taking your headset off P/N 11-02738 ..... $43.75

IPOD/MP3 ADAPTER

This adapter can be used to connect your IPOD or MP3 player directly into your intercom system. It comes in a 5' length..... P/N 11-03510 ..... $29.95

BOSE A20 (6-PIN) HEADSET TO GA ADAPTER

Model: PA-89/A20. Converts your 6-pin connector to a dual GA plug. Adapter measures approximately 21" P/N 11-09422 ..... $48.95

BOSE A20 (6-PIN) HEADSET TO HELICOPTER ADAPTER

Model: PA-89H/A20 Converts your 6-pin connector to a single helicopter plug. Adapter measures approximately 21" P/N 11-09423 ..... $62.50

PILOT USA ADAPTERS

Description	Part No.	Price
PA-50 Push-to-talk use with or without Intercom	11-07712	$19.95
PA-70S Headphone Extension (5ft)	11-06517	$21.75
PA-71 Microphone Extension (5ft)	11-10625	$22.75
PA-72S Dual Headset Adapter	11-06518	$47.95
PA-72H Dual Helicopter Headset Adapter	11-03562	$59.95
PA-73S Dual Headphone Y Adapter	11-06519	$24.95
PA-74 Dual Microphone Y Adapter	11-10615	$29.95
PA-75 Helicopter to GA headset Adapter	11-10650	$34.50
PA-76 GA to Helicopter Headset Adapter	11-10630	$34.50
PA-77S Headset Extension (2 Jacks, 2 Plugs)	11-06520	$44.95
PA-77H Helicopter Headset Extension (5ft)	11-00688	$48.95
PA-78 Mono Replacement Headset Cable (Chrome Plugs)	11-03563	$31.95
PA-79 Mono/Stereo Replacement Headset Cable (Chrome Plugs)	11-03564	$35.95
PA-79DNC M/S Headset Cable: For use with PA-1779, PA-1776, PA-2	11-06521	$49.95
PA-80S General Aviation Music Player Adapter	11-00694	$31.95
PA-80H Helicopter Video Recorder/CD Player Adapter	11-03565	$47.95
PA-81 Airbus Aircraft Headset Adapter	11-03566	$39.95
PA-82 Headset Adapter for ICOM A22,A24 Transceiver	11-02116	$32.85
PA-82.4 Headset Adapter for ICOM A4 Transceiver	11-03567	$39.90
PA-82B Bose Headset Adapter for IC-A6, A22,A24	11-06523	$69.95
PA-82H Helicopter Headset Adapter for IC-A6, A22,A24	11-06524	$55.95
PA-83 Europe NATO to US NATO Headset Adapter	11-06525	$75.95
PA-84 US NATO to Europe NATO Headset Adapter	11-06526	$75.95
PA-85 Headset Adapter for ICOM A5, A23 Transceiver	11-00618	$42.50
PA-86A Amplified Cell Phone Adapter GA (Twin Plug) Version	11-03568	$99.95
PA-86AH Amplified Cell phone Adapter - Helicopter Version	11-06527	$112.00
PA-86AB Amplified Cell phone Adapter (Panel Power) BOSE	11-06528	$129.95
PA-87 Impedance Converter Hi (GA) to low Military	11-06529	$49.85
PA-87H Impedance Converter Hi (Heli) to low Military	11-06530	$63.95
PA-88 Amplified Impedance Converter low (MIL) to Hi (GA)	11-10645	$69.85
PA-88H Impedance Converter Low (MIL) to Hi (Helicopter)	11-06531	$78.95
PA-89B Power Supply for Panel Power BOSE Headset	11-03570	$69.85
PA89/A20 Bose A20(6-Pin) to GA Adapter	11-09422	$48.95
PA89H/A20 Bose A20(6-Pin) to Helicopter Adapter	11-09423	$62.50
PA89A/A20 Bose A20(6-Pin) to Airbus XLR Adapter	11-09997	$64.95
PA89BH Bose X panel Powered to Helicopter Adapter	11-09996	$78.95
PA-90S Triple Headset Adapter	11-03571	$67.95
PA-91 GA (Twin Plug) Headset to (.25") Single Plug Adapter	11-00685	$28.95
PA-92 (.25") Single Plug Headset to GA (Twin Plug) Adapter	11-03572	$28.95
PA-93B GA to Bose Plug Headset Adapter	11-06533	$59.95
PA-93BH Helicopter Headset to Bose Plug Adapter	11-06602	$72.95
PA-94 Helicopter Ground Crew Extension Cable W/PTT (3ft.)	11-06534	$79.95
PA-95 Headset Adapter for Vertex Transceiver	11-03574	$42.95
PA-96 PC to GA (Twin Plug) Headset Adapter	11-03575	$44.95
PA-97 Airbus Plug to GA Headset Adapter	11-06535	$36.95
PA-98 Inline Helicopter Volume Control	11-06536	$55.95
PA-99 Inline GA Volume Control	11-06537	$55.95
PA-100B Oxygen Mask Microphone Adapter for Bose Plug Headset	11-06603	$92.95
GOPRO Hero 3 to Dual GA Headset Adapter	11-11565	$43.75
GOPRO Hero 3 to Lemo Headset Recording Adapter**	11-12364	$43.75
VIRB to Dual GA Headset Recording Adapter*	11-12270	$43.75
VIRB to Helicopter Headset Recording Adapter*	11-12271	$43.75

**Will not work with Garmin VIRB or VIRN Elite
* Will not work with GOPRO Hero 3 Camera.
See www.aircraftspruce.com for our Pilot USA Adapter Wizard. A quick way to find the right adapter for you!

PC TO HEADSET ADAPTER

This adapter allows you to plug your standard aviation headset into your zpc while using flight simulator to feed sound into your headset with high fidelity and mic for high quality verbal communication. Plug & play, no software needed. Requires a 9V battery, not included. Great companion to our fight-sim set-up. P/N 11-02751 ..... $56.50

TRIPLE HEADSET ADAPTER

This high quality adapter converts one set of radio or intercom mic and phone jacks into three sets. Sets are one, five and five feet respectively. This adapter is great for adding a pair of headsets to the back of the aircraft without requiring major installation. P/N 14-00071 ..... $115.75

FOUR CONDUCTOR PHONE JACK

(TJ-101) Mates with series TP-120, TP-102 plugs and plugs PT-101, U-93-A/U, and U-174/U. Nickel Plated beryllium copper contacts molded into a black plastic body. P/N 11-02744 ..... $19.75

FIVE CONDUCTOR PHONE JACK

(TJ-105, U385/U, M64/22-01) Mates with series TP-105, U-384/U, M642/14-01. Nickel plated beryllium copper contacts molded into a red plastic body. P/N 11-02745 ..... $39.85

AUDIO GOLD PLUG ADAPTERS

JB-11LDS - 1/8" stereo to .25 stereo plug, increases a 3.5mm plug to a .25" stereo plug..... P/N 11-02746 ..... $3.45
JB-11LDM - 1/8" mono to .25 stereo plug, increases a 3.5mm plug to a .25" mono plug. ..... P/N 11-02747 ..... $3.60
JB-11DLS - .25" stereo to 1/8" stereo plug, decreases a .25" plug to a 3.5mm stereo plug. ..... P/N 11-02740 ..... $3.60
JB-11DLM - .25" mono to 1/8" stereo plug,decreases a .25" plug to a 3.5mm mono plug. ..... P/N 11-02741 ..... $3.60

FIVE CONDUCTOR PHONE PLUG

(U-384/U, TP-105, M642/14-01) Mates with series TJ-105 and TJ-125. One piece monel contacts integrally molded into red plastic body. P/N 11-02742 ..... $37.75

CABLE JUNCTION BOX

This product allows you to convert two cables into one. Size: 1.5" x 1" x .5"). Comes with 4 screws. P/N 11-02743 ..... $4.85

SIGTRONICS ADAPTER CABLES

PTT Switch intercom use with intercom ..... P/N 11-02806 ..... $29.95
Headphone Replace. Cable Stereo 5' ..... P/N 800029 ..... $19.40
Headphone Replace. 3-6' Coil Mono ..... P/N 800034 ..... $24.50
Headphone Replace. Coil 3-6' Stereo ..... P/N 800035 ..... $38.00
Mono Headphone 5' Cord ..... P/N 800037 ..... $13.95
M-90 Electret Microphone ..... P/N 800078 ..... $89.50
M-80 Electret Microphone ..... P/N 800082 ..... $75.25
Converter STD Aviation Plug ..... P/N 900050 ..... $59.75
Converter Plug-STD Aviation ..... P/N 900051 ..... $42.50
Converter Plug-STD Avia-Coiled ..... P/N 900052 ..... $58.75
Headset 5' Straight Monaural ..... P/N 900053 ..... $39.85
Headset 3-6' Coiled Monaural (GA Version) ..... P/N 900054 ..... $46.00
Headset Ext 3-6' Coiled (Helicopters Version) ..... P/N 900055 ..... $56.75
Microphone Y Adapter ..... P/N 900056 ..... $46.95
Headphone Monaural Y Adapter ..... P/N 900057 ..... $36.25
Headphone Stereo Y Adapter ..... P/N 900058 ..... $49.95
Headphone 5' Straight Monaural ..... P/N 900059 ..... $23.50
Microphone Extension Cable ..... P/N 900060 ..... $29.75
Headphone 5' Straight Stereo ..... P/N 900061 ..... $29.75
Converter Plug to STD Avi Plug ..... P/N 900062 ..... $89.50
Convert U-75U to U174 Plug 18" ..... P/N 900063 ..... $89.50
Convert STD Plug to U-75U ..... P/N 900064 ..... $89.50
Converter to U-75 Plug 18" ..... P/N 900065 ..... $89.95

PUSH TO TALK SWITCH HOUSINGS

HOUSING FOR MICROMINI MOMENTARY SWITCH
P/N 11-07342 ..... $113.95

CX-2556/U CABLE (U-229/U TO U-94A/U CONNECTOR)

This adapter is a 4 foot extension cable. The U-229/U is the military standard audio connector, usually for audio connections to field radios. This connector has a U-94A/U connector on the other end with a push to talk switch built in.
P/N 11-09134 ..... $92.95

AV

EASTERN ELECTRONICS TEST EQUIPMENT

MAGNETO TIMING LIGHT - MODEL E50

Designed specifically for internal timing of aircraft magnetos and for synchronizing magnetos to aircraft engines. Eliminates all guesswork and provides a greater safety factor by creating perfect timing quickly and easily. Simply attach three clips to the magnetos and adjust until both bright lights flash in sync and the buzzer changes pitch. Fail-safe circuitry, variable pitch buzzer. Heavy-duty 3"x 5"x 2-1/8" unbreakable case. Wt. 1.5 lbs. Complete with 18 gauge lead wires 36" long and instructions.

P/N 12-01013 ..... $104.85
U.S. Industrial Equivalent ..... P/N TP105 ..... $56.85

AIRCRAFT TIMING INDICATOR MODEL E25

The Aircraft Timing Indicator Model E25 is a unique device that locates the relative relationships between the crankshaft, magneto point openings, camshaft and valve timing. Easily attached to the propeller spinner with mounting bands that are included with the unit, the E25 quickly and accurately (within ½ degree!) locates top dead center. The result: the all-aluminum Model E25 speeds up and improves the process of timing magnetos to the engine. With its easy-to-read dial and 18mm, hardened aluminum piston stop, the E25 is a snap to use. Note: Piston Stop is included.

E25 Timing Indicator ..... P/N 12-01014 ..... $65.75
Replacement Piston Stop ..... P/N 12-18100 ..... $19.50
U.S. Industrial Equivalent TP102 ..... P/N 12-01167 ..... $59.75

MAGNETO TIMING LIGHT

Measures the change in inductance in the magneto coil when the points open and close. Simply shorting the clip leads together will not indicate a point closing, therefore eliminating any false reading caused by loss of contact to the magneto grounding terminal. Adjust magneto timing accordingly. 100% solid state, compact 3/4" x 3" x 5" size, long battery life. Color coordinated leads are 4 ft. long. Comes in strong anodized aluminum case.

Dual Magneto Synchronizer w/Tweeter ..... P/N 12-16901 ..... $49.50
Dual Magneto Synchronizer w/o Tweeter ..... P/N 12-16902 ..... $42.65
Single Magneto Timing Light w/Tweeter ..... P/N 12-16903 ..... $53.75

TRACERLINE AVIATION ULTRASONIC LEAK DETECTOR

Master Kit Includes: • Marksman Receiver • UltraSonic Emitter • Headphones • 12 inch Air Probe • Contact Probe • Carrying Case Features: • Converts & Amplifies Ultrasonic Sound Into Audible "Natural" Sound for Accurate Diagnosis. Finds Problems Before They Result in Major Breakdowns • Frequency Response: 36,000 - 44,000 Hz • Detects Air Brake, Compressed Air, Vacuum, EVAP System and Other Pressurized Leaks Quickly and Effortlessly • Pinpoints Gear and Bearing Wear in Wheel Hubs, Transmissions, Transfer Cases, Differentials and Electric Motors. Check for Electrical Discharge Associated with Insulation Breakdown, Carbon Tracking and Arcing • Finds Air and Water Leaks Passed Faulty Seals, Gaskets and Weather Stripping in Passenger Cabs, Trailers and other Non-Pressurized Enclosures. • Power Requirement: One Standard 9-Volt Alkaline Battery Each for Receiver & Emitter.

P/N 12-01745 ..... $698.75

ENGINE TEST TOOL KIT

This small test kit is designed to allow the aircraft mechanic a convenient and economical way to purchase the basic small engine test equipment. This kit contains: 1 - TP104 Cylinder Pressure Tester, 1 - TP105 Magneto Timing Light, 1 - TP102 Timing Indicator, 1 - TP103 High Voltage Cable Tester, 1 - TP216 Tool Box

P/N 12-02349 ..... $239.85

ENGINE TEST KIT

EK5EM - The Engine Test Kit EK5EM has all of the test equipment needed to check engine compression, synchronize magnetos, time aircraft engines, and test ignition leads all in one tool box.

The kit contains: the 2EM Differential Pressure Tester with master Orifice, LED52 Electronic Magneto Synchronizer, Eastern E25 Aircraft Timing Indicator, Eastern E5 High Voltage Cable Tester, the Compression Tester Extension & Hip Roof Tool Box.

P/N 12-02449 ..... $255.96

EK5 - ATS Engine Test Kit has all of the test equipment needed to check engine compression, synchronize magnetos, time aircraft engines, and test ignition leads all in one tool box. Contains: 2E, LED52, Eastern E25, Eastern E5, & 19000 tool box. Now includes the 18mm-XT Compression Tester Extension. P/N 12-02943 ..... $247.95

HIGH VOLTAGE CABLE TESTER MODEL E5

Gives a fast, accurate test of high voltage aircraft ignition cables. Simply connect 3 wires, push test button and test is completed. The E5 will instantly indicate in its test window both good and defective cables - no waiting for indication to appear. Fail-safe circuitry. Heavy-duty lead wires. Compact 3" x 5" x 2-5/8" case. Wt. 1-1/2 lbs.

P/N 12-01016 ..... $108.75

DIFFERENTIAL CYLINDER PRESSURE MODEL E2A

Eliminates guesswork by allowing you to locate the exact location and cause of your engine's loss of efficiency. Field tester for 2 years by Teledyne Continental Motors, and approved for use on Teledyne Continental Engines by their Engineering and Field Services Group. Complete instructions and an 18mm adapter with each unit. "M" models have built-in master orifice.* Not approved by TCM.

E2A - for cylinders < 5" bore ..... P/N 12-01012 ..... $89.95
E2A-1000 - for cyl. > 5" bore ..... P/N 12-01017 ..... $90.75
E2M - for cylinders < 5" bore ..... P/N 12-01015 ..... $121.90
E2M-1000 - for cyl. > 5" bore* ..... P/N 12-00692 ..... $126.85
E2A-12mm (Rotax) for cyl. < 5" bore ..... P/N 12-00693 ..... $79.95
12 mm Adapter ..... P/N 12-01018 ..... $15.65
18 mm Adapter ..... P/N 12-18202 ..... $17.50
U.S. Industrial Equivalent ..... P/N TP104 ..... $56.85
14MM Adapter ..... P/N TP171 ..... $13.50
18MM Adapter ..... P/N TP104-9A $12.95

ATS DIFFERENTIAL CYLINDER PRESSURE TESTERS

Comes complete with on-off safety valve to eliminate pressure when disconnecting from the cylinder. Can be used to check intake or exhaust valves, cracked or worn rings, defective cylinders, worn bushings, etc.

LESS THAN 5" BORE - Specifications: Orifice size is .040". precision gauges matched to within +/-2%. 18MM plug adapter. 24" pressure hose. Includes hose and spark plug adapter. Factory calibrated. Letter of certification available upon request. Note: For an engine cylinder having less than a 5.00-inch bore; 0.040-inch orifice diameter; .250 inch long; and a 60-degree approach angle. ..... P/N 12-02344 ..... $63.96

GREATER THAN 5" BORE -Specifications: Orifice size is .060". precision gauges matched to within +/-2%. 18MM plug adapter. Includes hose and spark plug adapter. Factory calibrated. Letter of certification available upon request. Note: For an engine cylinder with 5.00 inch bore and over: 0.060 inch orifice diameter, .250 inch long, and a 60 degree approach angle..... P/N 12-02345 ..... $63.96

DIFFERENTIAL PRESSURE TESTER WITH MASTER ORIFICE

Now you can conveniently check the calibration of your pressure tester before each use without disconnecting the tester. Comes with complete instructions. Includes hose and spark plug adapter.5" Bore Diameter or smaller ..... P/N 12-02346 ..... $79.96
Bore Diameters greater than 5" ..... P/N 12-02347 ..... $79.96

ATS PRO DIFFERENTIAL PRESSURE TESTER KIT

ATS 2EM Differential Pressure Tester (with Master Orifice) and the Spark Plug Port Extension Tool together, to make your life a whole lot easier. NOTE: The ATS 2EM Differential Pressure Tester has a .040" orifice as required by Teledyne Continental SB03-3 Service Bulletin, and is the proper type of instrument to test ALL Teledyne Continental engines in accordance with the aforementioned bulletin. The ATS 2EM also complies Textron Lycoming SI-1191A Service Instruction and is appropriate for ALL Textron Lycoming engines as indicated in the Service Instruction. ..... P/N 12-03330 ..... $119.95

COMPRESSION TESTER EXTENSION

This tool makes compression testing easy. Wrench free way to test that allows for exhaust system and baffling clearance. Tester is manufactured with quality-welded construction and offers a spark plug thread with O-Ring seal. It has a standard air fitting..... P/N 12-01060 ..... $28.95

12mm Extension.. P/N 05-06883 ..... $31.85

ATS COMPRESSION TESTER EXTENSION

A replacement plug adapter with an 8-1/2" reach to work around manifolds, baffling, harnesses, support structures, and anything else that gets in your way. The T-handle lets you to screw and unscrew the extender into the port without a wrench. The quick connect coupler makes it a snap to hookup and disconnect your tester. Note: For use with ATS models 2E and 2EM Compression Testers. 1 lbs (0.5Kg) weight. 18MM aviation engine plug threads 8-1/2" long to clear obstacles Standard ..... P/N 12-02380 ..... $23.96

TO

RITE SYSTEM MAGNETO TIMING KITS

These tools are for setting the proper ignition timing of engine magnetos and the other is for setting the proper deflection angle of flight controls. The mag-neto timing indicator is more precise than anything on the market today. It is far superior to the old needle indicator currently in use throughout the industry. It is designed to fit securely on any aircraft spinner with-out the use of filler material or tape to hold it in place. The surgical tubing used to secure their tool is stron-ger, more durable and easily adjustable for a variety of applications.

There are two 2 different kits. The Rite-System Kit (Basic) includes the Mag-Rite magneto timer, the Fly-Rite protractor, Digital Inclinometer, TDC Locator pin, 3 each Adjustable Bungees and Aluminum Case. Instruction and warranty information are also included.

The "Deluxe" kit will include the magneto synchronizer and the "Standard" kit will not. Both products are currently "Patent Pending".

Rite-System Deluxe Kit ..... P/N 12-02636 ..... $149.95
Rite-System Basic Kit ..... P/N 12-02635 ..... $109.85

TIME-RITE DELUXE COMBO KIT

The Time-Rite unit is the number one choice of aviation mechanics for precisely timing engines. It is assembled by hand and tested to the strictest standards to pre-serve the original craftsmanship. The unit has special-ized arms and calibrated scales to accurately locate Top Dead Center (TDC) and then enables you to set the timing angle with dead-on accuracy. Kit includes: One 18 mm Time-Rite unit, one 14 mm Cone to adapt for 14mm use, a complete set of scales for 14mm and 18mm engines, a complete set of arms for 14mm and 18mm engines, an instruction manual, and a fitted case. ..... P/N 12-02872 ..... $495.96

COMPRESSION TEST KIT

Includes everything you need to check valves and rings, perform carbon buildup inspection and test for late tim-ing on a wide range of vehicles. Comes with an exten-sion hose, straight and angled fittings and a rubberized gauge protector. Features: Adapters for a wide number of vehicles, Gauge has dual color scale with 0-300 PSI, 0-20 kPa, Test from your own garage. ..... P/N 15-08314 ..... $47.65

DR. ROTECH ENGINE DIAGNOSTIC TOOL

Perform all required electrical tests for the Rotax 912/914 engine in a matter of seconds. Simply plug the Doctor into your ignition unit plugs and within seconds you'll know which systems pass and which fail. Dr. RoTech performs all the required measurements of BRP-Rotax 912/914 Heavy Maintenance Manual section 74 paragraph 3.12: Generator coil (on stator), Charging coil (on stator), Trigger coil (A&B), Primary ignition coil (A&B) Secondary ignition coil, Spark plug connector, Ignition switch & Engine ground. What used to take you an hour now takes less than 1min with Dr. RoTech. P/N 12-03150 ..... $499.00

FAULTCHASER CABLE TESTER

FaultChaser & TP-200 Tone Probe come as a kit in a protective case. Easily test cables and deter-mine cable length quickly and accurately with the FaultChaser Handheld. This simple device allows users to find cable length and determine impediments as well as the overall condition of cables up to 3,000 feet long. Using advanced spread spectrum TDR technology, The FaultChaser provides accuracy of 1% or better while remaining immune to voltage, current, or data stream disruptions. P/N 12-03282 ..... $479.00

T300 SYNCRO LASAR® IGNITION TIMING LIGHT TOOL

The SyncroLASAR® tool is used to syncronize Slick 4700/6700 LASAR® magnetos to the engine during installation using the right and left LASAR® magneto conectors. During bench inspections and overhaul the SyncroLASAR® is also used to adjust the magneto contact braker opening position when the cover and low voltage control harnress pigtail are removed. ..... P/N 12-00181 ..... $597.00

THE PALMSCOPE

A complete, full-featured video inspection system no bigger than a smartphone. ideal for busy craftsmen, professionals and diyers. Features: • Fits in your pocket • Affordable • 1 meter drop-proof • Long, thin camera-tipped probe penetrates tight, hard-to-reach spaces • Probe is waterproof and holds its shape • Four camera-lighting LEDs produce bright, crisp video on large color LCD • Four screen controls • CE and RoHS approved.

P/N 12-03521 ..... $149.00

MID-CABIN DEICE BOOT INFLATION TEST KIT

A pneumatic systems test kit that allows aircraft tech-nicians to test the aircraft deice boot system in the hangar, via shop compressed air, rather than having the need to operate the aircraft engines on the ramp or run-up area. For Gulfstream Astra G100, G150, and G200 aircraft. This test equipment will eliminate: The need to fuel and/or defuel the aircraft for engine operation and system testing; aircraft towing/taxiing to and from the approved engine run-up areas; testing deice boot systems with loud aircraft engines; excessive man hours for aircraft engine operation and system testing.

P/N 12-02936 ..... $610.00

ANGLE CUBE PROPELLER PROTRACTOR

Precision, highly accurate and simple to use device for checking, setting or changing propeller pitch. The resolution and repeatability is 0.05 degree and the accuracy is +/- 0.1 degree. It is powered with a stan-dard 9 volt battery with approximately one year use life. Can be used for other angle measuring applica-tions such as checking and adjusting wing incidence, rotorcraft blade angles and tail-dragger ground angles. Can be used for measuring or setting table saw blade angles, machin-ing or drilling angles or any other application requiring precision angle measurement. Magnets on three sides can be used to hold the unit to appropriate surfaces. P/N 12-02640 ..... $93.85

GENERAL TOOLS IBORESCOPE FOR IPAD/IPHONE

Ideal for making high-quality video inspections of hard-to-reach or hard-to-see areas or equipment. By running a free app from the iTunesR App Store, any iPhone or iPad can display real-time video and store still images captured by the iBorescope probe. The transfers are wireless. Compatible with iPad, iPad2, "iPad3", iPhone3GS, iPhone4, iPhone4S. Long (35 in./900mm), thin (0.39 in./9.8mm diameter) flexible-obedient probe captures VGA (640 x 480 pixel) resolution video. Ideal camera depth of field of 1/2 in. to12 in. (12.7 to 305mm) Includes three useful probe tip accessories (45° mirror, pickup hook, magnetic pickup). 1-year limited warranty. P/N 12-03196 ..... $228.00

VGA RESOLUTION PROBE

Ideal for capturing high-quality (640 x 480 pixel) video and images of hard-to-reach or hard-to-see areas and equipment. Light boost, anti-reflection and image rotation functions extract clear images from even the darkest spaces. Compatible with General?s DCS1600, DCS1600ART and DCS1800 high-per-formance video borescope inspection systems, H16 handheld recording console and DCS1800-TR wireless probe handle/controller

P/N 12-03374 ..... $548.95

PORTABLE VIDEOSCOPE KIT 4MM X 1300MM

4 mm diameter 1300mm working length (available in other lengths and diameters). Steel braid insertion probe, water and oil proof, temp to 90 C. Forward view, 2 ways of articulation 120/120 up down. Comfort grip with adjustable LCD screen. Video out-put easily connects to capture device. KIT includes: Flexible Portable Videoscope Battery Charger Standard Storage / carrying case

Portable VideoScope 4MMX1300MM ..... P/N 12-02583 ..... $6,545.00
Portable VideoScope Carry Case ..... P/N 12-02584 ..... $289.00

DIGITAL VIDEOSCOPE 4MM X 1,300MM

1. 4.0 mm diameter 1300mm working length (available in other lengths and diameters). Steel braid insertion probe, water and oil proof, temp to 90 C. Forward view, 2 ways of articulation. 150/150 up down. Universal type video out, easily connects to display and computer via USB cable. Built-in recorder and onboard hard drive with 40gig memo-ry capacity. (optional-not included). KIT includes: Flexible Videoscope Probe (Interchangeable with other dia. Probes), Integrated video and lightcable 5ft in length, TFT LCD Display and VPU with built-in lightsource for clear, wide and magnified image, Rugged carrying case, Remote control for ease of operation at distances up to 6 ft.

Digital Videoscope 4MMX1300MM ..... P/N 12-02581 ..... $7,426.00
Heavy Duty Carry Case ..... P/N 12-02582 ..... $389.00

TO

THE SEEKER 050 USB VIDEO INSPECTION 12MM PROBE

Features a fixed 12mm diameter, 1 meter long, waterproof camera probe and USB connection to view images and video on your computer. USB computer interface. Works with Windows 7, Vista and XP. 12mm (0.47 in.) diameter camera tipped probe is flexible and strong. Camera pixel resolution: 320 x 240. Adjustable light intensity from two built-in LEDs. 1m (3.28 ft.) flexible shaft retains configured shape to suit various applications. Probe is water, oil and dust proof to IP67 standards. Elegant ergonomic design. Clear image quality both up close and far away.

P/N 12-02655 ..... $42.85

THE SEEKER 100 USB VIDEO INSPECTION 12MM PROBE

Features wireless transmission of video and images to your computer up to 30 feet away and a Skype® enabled streaming video for remote viewing over the internet. Built-in radio transmitter wirelessly transmits (up to 10 feet) live video signal to the RCV100 USB video receiver, this enables the video to be viewed on a Windows PC and streamilined live over the internet. Works with Windows 7, Vista and XP. 12mm (0.47 in.) diameter, 1m (3.28 ft.) long, flexible-obedient, far focus camera-tipped probe is water, oil and dust proof to IP67 standards. Optional probe extensions of 1m, 2m, and 3m (3.28 ft., 6.56 ft., 9.84 ft.) are available for the 12mm probe. In addition to the 12mm (0.47 in.) diameter probe, this unit can also accept optional 9.0mm (.35 in.) and 5.5mm (.22 in.) camera tipped probes. Adjustable light intensity from built-in LEDs. Flexible-obedient probes retain configured shape to suit various applications. Includes: Custom Hard Case, Transmitter Handle with 12mm Diameter x 1m Long, Flexible-Obedient Probe 3 Accessory Tools: (45° Mirror, Magnetic Pick-Up, Pick-Up Hook), RCV100 Wireless USB Video Receiver, Interface Cable, Software on Mini-CD Instructional Manual, 3 Year Limited Warranty. P/N 12-02656 $171.95

RUGGEDIZED RECORDING VIDEO INSPECTION SYSTEM

The DCS350 is a ruggedized recording camera scope with voice annotation, internal memory and removable SD card. Ideal for visually inspecting and documenting hard-to-reach or hard-to-see areas of factory, system, equipment or vehicle and recording findings as still images or video with voice annotation. Design is ruggedized for industrial and automotive use. System includes 128MB internal memory, a 2GB MicroSD card, and PC software 18000.

P/N 12-03356 ..... $279.95

HIGH PERFORMANCE VIDEO SYSTEM DCS1600

Portable, hand-held, complete borescope system with monitor, camera and video. Kit Includes: • Charger • Lens module cable 39.4" (1 M) • SD memory card • 30.45 and 60° mirrors • USB to 5-pin mini-B cable • Video cable • Cleaning cloth • Cotton swabs • Instructions • Heavy duty water proof blow mold case P/N 12-02299 ..... $857.00

WIRELESS VIDEO/AUDIO BORESCOPE SYSTEM DCS1800

A portable, hand-held borescope system with monitor, camera, video and wireless data transmission. Operate the instrument anywhere without the cable. The complete kit includes: Main monitor, 33 ft (1m) camera probe, 33 ft (1m) SD card, 30° 45° and 60° mirrors, instructions and waterproof blow mold carrying case.

Borescope System ..... P/N 12-02301 ..... $1,114.00
Probe Extensions - 3 Meters ..... P/N 12-02396 ..... $38.75
Probe Extensions - 2 Meters ..... P/N 12-02397 ..... $25.75

HIGH RESOLUTION DIGITAL INSPECTION CAMERA WITH RECORDER

With vivid 640 x 480 images and a tempered glass lens, this high-resolution digital inspection camera allows you to inspect engine parts, home appliances and other tight spaces with precise clarity. The inspection camera also features a recorder that enables you to hook up the camera to your computer for review. And then, save those images on internal flash memory or SD card (cable, SD card not included).

P/N 15-08342 ..... $282.95

THE SEEKER VIDEO BORESCOPE SYSTEMS

THE SEEKER 200 VIDEO BORESCOPE SYSTEM - The Seeker 200 Video Borescope Inspection System features a 2.4-inch LCD color monitor for real-time viewing, with a 12mm flexible camera probe that retains its configured shape for inspecting hard-to-reach areas. A standard 1-meter probe length is provided with the unit and optional probes up to 10 meters (32.8 feet) are available. The Seeker 200 is ideal for use in automotive maintenance, electrical repair, plumbing applications, HVAC/R and the visual inspection of otherwise inaccessible areas. Includes: 3.3ft(1m)optional: up to 16ft., Extension Tools: (Mirror, Magnet, Pick-Up Hook) , 1 "9V" Battery , Blow Mold Case , Instruction Manual. Working Temperature: 32° to 113°F (0° to 45° C). Power Source: 1 "9V" battery ..... P/N 12-02296 ..... $127.95

SEEKER 300 VIDEO BORESCOPE SYSTEMS

The Seeker 300 Video Borescope System offers a large 3.5-inch LCD color monitor and a 5.5mm flexible, configurable camera probe with adjustable LED lighting. Ideal for use in the visual inspection of otherwise inaccessible areas. This Video Borescope Kit also includes a mirror, magnet and pick-up hook that can be attached to the end of the probe. 3.5" (88.9mm) Color LCD Screen for crystal clear image, superb clarity and viewing effect. 5.5mm or 12mm diameter Camera-tipped Probe is flexible and strong with built-in adjustable LED lighting, and is slim enough to perform automotive engine checkup. Flexible Probe retains configured shape to suit different inspection needs. Probe Length: Standard: 3.28ft. (1m), Optional: up to 16ft (5m). View findings instantaneously

Includes: 3.28ft. (1m) Flexible Probe, Extension Tools: (Mirror, Magnet, Pick-Up Hook), 1 "9V" Battery Blow Mold Case Instruction Manual.

5.5 mm Probe ..... P/N 12-02652 ..... $256.95
12mm Probe ..... P/N 12-02297 ..... $169.50
3 Meter Probe Extension ..... P/N 12-02396 ..... $38.75
2 Meter Probe Extension ..... P/N 12-02397 ..... $25.75

SEEKER 400 VIDEO BORESCOPE SYSTEMS

The Seeker 400 Video Borescope System is ideal for use in any application requiring the inspection of hard-to-reach or hard-to-see areas. 5.5, 9, or 12mm diameter probe, 1m (3.28 ft.) long, flexible obedient and waterproof to IP67 standards. 3.5 in. (88.9mm) diagonal TFT-LCD Wireless Color Monitor can be detached from the unit for remote viewing up to 32 ft. (10m) away. 4x zoom feature. 180° image flip feature. Both monitor and handle use rechargeable "li-ion" batteries which can be charged at the same time using the included one–into-two charging cable. System comes complete with batteries and charger. Two adjustable LED lights inside the tip of the probe illuminate dark spaces for clear inspection. View results in real-time, record video and capture/save still photos (JPEG), up to 3 hours of video. Includes: Custom Hard Case, Pistol Grip Camera Handle, 9mm Diameter, 1m (3.3 ft.) Long Flexible-Obedient Probe, Detachable, Wireless Monitor, 2GB Micro SD Memory Card, 3 Accessory Tools: (45° Mirror, Magnetic Pick-Up, Pick-Up Hook), USB and Video Interconnect Cables

Built-in Magnets, 2 "li-ion" Rechargeable Batteries with AC Adapter/Charger, Instruction Manual, Three Year Limited Warranty.

5.5mm Probe ..... P/N 12-02654 ..... $365.00
9mm Probe ..... P/N 12-02653 ..... $288.00
12mm Probe ..... P/N 12-02298 ..... $257.95
3 Meter Probe Extension ..... P/N 12-02396 ..... $38.75
2 Meter Probe Extension ..... P/N 12-02397 ..... $25.75

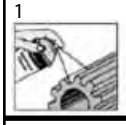
VIPER 1700 VGA RESOLUTION PROBE

The VIPER 1700 is a rugged, lightweight, high-performance, VGA resolution recording borescope system that is ideal for making high-quality video and photo inspections of inaccessible or hard-to-see areas of vehicles, environments, and industrial equipment. Features: • Records VGA resolution (640 x 460 pixel) video clips and still images • Probe features light boost, anti-reflection and screen rotation • Camera lighting provided by 4 front-facing LEDs • To minimize glare from shiny targets, lighting can be shifted to 2 angled LEDs • Console features brightness controls, horizontal mirroring, 2X zoom, and slow-motion and fast-forward video playback • Object measurement mode • Console accepts dozens of different length and diameter probes • Probe and stainless steel camera head are IP67 water, oil, and dust-proof • Dual output jacks enable before/after image comparisons • Auto Power Off is time adjustable • Includes 4 GB SD memory card, video and USB cables, and hard case • 1 year limited warranty..... P/N 12-03369 ..... $1,477.00

TO

PENETRANT INSPECTION KITS-MALLETS-HAMMERS

MAGNAFLUX NDT (NON-DESTRUCTIVE TESTING) KIT

1	2	3	4	5
				
1 Preclean inspection area. Spray on Cleaner, wipe off with cloth.	2 Apply penetrant. Allow short penetration period.	3 Wipe to remove Penetrant from surface. Use Cleaner, moistened towel if surface is rough.	4 Shake can and spray on a thin film of Developer.	5 Inspect. Defects will show as bright red lines in white Developer background.

A quick, easy way to make shop and in-field inspections of landing gear, airframe and components. Highly sensitive Spotcheck dye penetrants which give clear, bright red indications. Locates very fine cracks on the surface of ferrous and non-ferrous components, equipment and structures. Reveals cracks on materials with surface temperatures as high as 350°F. Perfect for testing welds before thorough cooling. Convenient spray cans make application easy and contain no fluorocarbon propellants. Non-flammable. Materials meet applicable specifications for dye penetrant inspections (ASME, ASTM and MIL specs). Considered flammable and hazardous by UPS.

4-CAN SPOT CHECK® TEST KIT - The lowest priced way to check for cracks, leaks and other defects on any metal parts. Kit includes 1 spray can of developer, 2 cans of cleaner & 1 can of dye penetrant in cardboard case.

Magnaflux 4-can kit - SK-416 ..... P/N 09-00391 ..... $104.75
Developer ..... P/N SKD-S2 ..... $19.90
Replacement Materials: Penetrant ..... P/N SKL-SP $23.65
Cleaner/Remover (12oz. Aerosols) ..... P/N SKC-S $19.75

SK-816 KIT - The SK-3 kit is larger, comes in a lightweight high-impact plastic carrying case containing 2 cans of penetrant SKL-SP, 4 cans of cleaner/remover SKC-NF, 2 cans of developer SKD-NF, brush, cloth and instructions. P/N 09-01192 ..... $194.75

SKC-S CLEANER - This clear, fast-drying solvent can be used for precleaning, post-cleaning and penetrant removal.
P/N 09-01188 ..... $19.75

SKL-SP1 PENETRANT - Because of its vivid red color, this solvent removable dye penetrant provides excellent color contrast performance to locate surface cracks in virtually any metal or non-porous ceramic material.
P/N 09-01191 ..... $23.65

SKD-S2 DEVELOPER - Made especially for use with SKL-SP penetrant, this developer contains suspended white particles that provide an ideal background for red Spotcheck penetrant indications.
P/N 09-01190 ..... $19.90

MET-L-CHEK PENETRANT INSPECTION KITS

Met-L-Chek kits provide a completely portable, job-proven method used throughout the industry to locate cracks, flaws and other defects. These economical & effective kits provide everything needed to make inspections in the shop or field. The penetrant materials are packaged in easy-to-use aerosol spray cans and a can of cleaner included for cleaning parts before inspection. The inspection procedure is easy to learn, accurate and inexpensive. Met-L-Chek can be used on ferrous and non-ferrous materials to find surface defects and 'thru leaks'. Supplied in a rugged metal case with complete instructions. The 4-Can Kit has one aerosol spray of cleaner, penetrant, developer and remover. The 8-Can Kit has 2 cans of each material. Individual replacement cans available.

4-Can Kit..... P/N 09-03040 ..... $65.75
16 oz Kit..... P/N 09-03052 ..... $96.90

AERO-BRITE UNIVERSAL FLUORESCENT LEAK DETECTION

Locates all leaks in petroleum- and synthetic-based aviation fluid systems! Checks an entire system in just minutes! Ideal for use as part of a diagnostic/ preventive maintenance program for commercial and military aircraft fuel and fluid systems! Features: FAST— The quickest way to inspect for leaks in aviation fuel, lubrication and hydraulic systems. SAFE — Specially formulated to accommodate the host fluid. Will not damage the fluid's properties or any of the system's components. VERSATILE — Allows inspection of the entire system under virtually all operating conditions. Ideal for both in-flight and static testing. COST EFFECTIVE — Super-concentrated. Use less per dose! Glows a bright green under UV light.See our website for suggested dilution ratios.

16 oz. ..... P/N 13-07351 ..... $179.50
8 oz. ..... P/N 13-07350 ..... $96.75
Optimax UV LED Flashlight Kit ..... P/N 13-07347 ..... $742.85
Leak Detection Kit ALK-365 ..... P/N 13-07348 ..... $812.00
Tritan Board Beam UV Lamp 365 ..... P/N 13-07349 ..... $1,736.00
Cobra Borescope 7400 Pixel ..... P/N 13-07352 ..... $187.75
Marksman II Ultrasonic Diagnostic Tool Kit ..... P/N 13-11730 ..... $590.00

PLEASE VISIT OUR WEBSITE FOR ALL KIT DETAILS LISTED ABOVE.

GARLAND NON-MARRING MALLETS AND HAMMERS

Since 1866, Garland Manufacturing has been supplying America with top-quality products made from the finest water buffalo rawhide. Today, they're the leader in the manufacture of soft-faced mallets and hammers of unsurpassed quality. All Garland products are manufactured in the U.S.A. to ISO 9002 international quality standards. They combine superior craftmanship with the best materials and then field-test their products extensively on a range of surface finishes to meet the requirements of the industries in which they're used. Industries ranging from foundries and electrical manufacturing to jewelry and woodworking. Their mallets and soft-faced hammers are preferred by both craftsmen and production workers.

RAWHIDE AND WEIGHTED RAWHIDE MALLETS

Garland's all-rawhide mallets are made of tough, long-wearing, water buffalo rawhide. They're ideal for use on broad-faced striking surfaces in a broad range of applications.

RAWHIDE MALLETS					
Size	Face Dia. (Inches)	Head Length (Inches)	Weight (oz.)	Part No.	Price
0	1"	2"	2	12-00749	$15.90
2	1-1/2"	3"	6	12-00750	$21.55
4	2"	3-1/2"	11	12-00751	$30.90
6	2-3/4"	4-3/4"	24	12-00752	$88.95
WEIGHTED RAWHIDE MALLETS					
Size	Face Dia. (Inches)	Head Length (Inches)	Weight (oz.)	Part No.	Price
7	1-1/4"	2-1/2"	8	12-00753	$28.50
10	2"	3-1/2"	20	12-00754	$43.00

RUBBER MALLETS

Garland's rubber mallets are designed for general-purpose applications. All sizes deliver solid, mar-free blows.

Size	Face Dia. (Inches)	Head Length (Inches)	Weight (oz.)	Part No.	Price
1	2-1/4"	3"	17	12-00755	$33.75
2	2-1/4"	3-7/8"	19	12-00756	$34.80
3	2-1/2"	4-1/2"	32	12-00757	$39.75

NYLON MALLET

Nylon mallet works great for shaping metal.
Head Length: 3 1/2". Face Diameter: 1 1/2".
Hammer Length: 10"
P/N 12-02895 ..... $8.95

SPLIT-HEAD HAMMER - NO FACE

The split-head hammer does the work of six different hammers because the face can be easily changed. Available in two sizes. Many materials & surfaces. Die moving or positioning. Assembly. Electric Motor Repair. Propeller Repair. Foundry.

Face Dia.	Head Length	Weight	Part No.	Price
1-3/4"	3-1/4"	2.5 lbs	12-00965	$37.65
2-3/4"	4"	5.25 lbs	12-00966	$52.25

SPRING TUBE BENDERS

Economical tools for hand-bending of soft aluminum and copper tubing to any shape without collapsing walls. Special spring steel, nickel finished. End belled for quick tube removal. Set of 6 for 1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" O.D. tubing.

P/N 12-00823 ..... $24.50

LEVER TYPE BENDERS

Each tool bends one size. Open side type slips over tube at any point. Makes smooth short-radius bends up to 180° with minimum effort. No marking, scraping or flattening of tubing. Calibrated to show angle of bend. Wide hook grips tube securely. Suitable for bending annealed copper, aluminum, steel, stainless steel and hard copper tubing of bending temper.

Tubing O. D.	Bender Model No.	Part No.	Bending Radius	Price
1/8"	364-FH-02	12-20002	3/8"	$69.75
3/16"	364-FH-03	12-20003	7/16"	$86.95
1/4"	364-FHA-04	12-20004	9/16"	$89.95
5/16"	364-FHA-05	12-20005	11/16"	$115.95
3/8"	364-FHA-06	12-20006	15/16"	$87.95
1/2"	364-FHA-08	12-20008	1-1/2"	$93.75
5/8"	364-FHA-10	12-20010	2-1/4""	$224.95
3/4"	364-FHA-12	12-20012	3"	$326.95

WIDE RANGE LEVER TYPE BENDERS

Tool quickly adapts to all sizes in its range by changing forming wheel and block. Long handles re-position during bend for best leverage. Calibrations show precise bend angle. Benders for 3/8" through 3/4" O.D. tubes are as illustrated. Benders for 1/4" and 5/16" O.D. tube in #350-FHA kit are one piece type. Kits furnished in steel tool box.

Model 350-FHA Kit- For 1/4",5/16",3/8",1/2",5/8"& 3/4" Tube.....P/N 12-20100.....$575.00

Model 360-FHA Kit- For 3/8",1/2",5/8"& 3/4"Tube .....P/N 12-20200.....$654.95

TRIPLE HEADER TUBE BENDER

For bending annealed copper, aluminum, brass, steel and stainless steel tubing. Multi-tube design does the work of three conventional lever type benders. Calibrated markings for making accurate left-hand, right-hand and offset bends. (for 1/8", 3/16", 1/4" O.D.)

P/N 12-01577..... $26.50

IMP® TRIPLE HEADER TUBE BENDER

Calibrated markings for making accurate left-handed, right-handed and offset bends. 90° start requires less effort-making bending fast and easy. For 1/4", 5/16", & 3/8" (6 & 8 mm) O.D. tubing. 15/16" radius to center of tube.(for 1/4",5/16",3/8" OD)

P/N 12-01578..... $49.50

BRAIDED STAINLESS STEEL HOSE CUTTER

The AN braided stainless steel hose cutter makes quick work of cutting hoses to length. It features long handles for better leverage and a rubber no-slip grip. It can cut any braided stainless steel line up to size 12 AN..... P/N 12-02574 ..... $58.90

SOFT PIPE/TUBING CUTTER

This economical tool will cut soft pipe and tubing up to 1-1/4" outside diameter. The blade is teflon-coated and reverses for double the useful life of the blades. ..... P/N 12-20020 .....$14.25 ea.

Replacement Blades ..... P/N 12-20025 .....$5.85 ea.

PLASTIC TUBE SHEAR

Lightweight tubing shear only 3" overall in length, easily cuts all thermoplastic tubing and other types of non-wire reinforced hose..... P/N 12-02580 ..... $10.65

Pkg' of 5 blades ..... P/n 12-02579..... $21.55

EZ-BEADER TUBING BEADERS

Designed to replace the original Parker beading tools. Compact design. Capable of tubing wall thickness from .035 to .065 thick

Size	Description	Part No.	Price
3/8"	EZ-BEADER TP885A	12-00354	$25.90
1/2"	EZ-BEADER TP885B	12-00355	$31.50
5/8"	EZ-BEADER TP885C	12-00356	$36.75
3/4"	EZ-BEADER TP885D	12-00357	$41.85
1"	EZ-BEADER TP885F	12-00358	$58.90
1-1/4"	EZ-BEADER TP885G	12-00359	$82.50
1-1/2"	EZ-BEADER TP885H	12-00360	$76.75
1-3/4"	EZ-BEADER TP885I	12-00361	$73.85
2"	EZ-BEADER TP885J	12-00362	$72.50
Set of all 9	EZ-BEADER Tubing Beader	12-00363	$369.95

HI-DUTY TUBE CUTTER

For 1/8" to 1" O.D. metal tubing. Makes clean, right-angle cuts with no burrs or chips to clog tubing. Roller type with flare cut-off groove, fold-away reamer and spare cutting wheel. Wt. 6-1/2 oz.

Hi-Duty Tube Cutter..... P/N 12-00382 ..... $29.65

Replacement Cutter Wheel P/N 75015.....$8.75

Replacement Reamer Blade P/N 79318-01 ..... $10.95

"IMP" TUBE CUTTER

Designed for use in tight quarters where other cutters won't fit. For 1/8" to 5/8" O.D. tubing. Requires only 13/16" swing radius. Perfect for instrument panels, control cabinets, machine tools, etc, Size: 111/16"x 1-5/16" x 7/8". Wt. 2-1/2 oz. P/N 12-01277 ..... $26.60

JUNIOR TUBE CUTTER

Exceptionally handy in close quarters - only 3-1/2" overall length. Makes clean, right-angle cuts without flattening tube. Cuts 1/8" to 3/4" O.D. tubing. Enclosed feed mechanism. Wt. 5 oz.

Junior Cutter..... P/N 12-01576 ..... $18.50

Replacement Cutter Wheel P/N 32633.....$7.25

MINI TUBING CUTTER

The mini tube cutter's compact design is ideal for tight spots under sinks and behind appliances. It cuts copper, brass and aluminum tubing from 1/8" to 1 1/8". Extra cutter stores inside knob. Includes retractable deburring blade.

P/N 15-07093 .....$9.28

MINI TUBING CUTTER

Performs where conventional tubing cutters simply cannot fit. With a 1-1/2" swing radius, the Mini Cutter is ideal for limited-space applications. Accepts tubing sizes from 1/8" to 7/8" in diameter and up to 1/8" in wall thickness. Capable of cutting through copper, aluminum, brass and thin-wall stainless steel.

P/N 12-03348 .....$8.70

TUBING CUTTER

Tubing sizes from 1/8" to 1-1/8", and up to 3/16" in thickness. The cutter easily slices through copper, aluminum, brass, stainless steel and other tin-wall tubing. Uses the RW122 cutting wheel. Includes a retractable reamer with dual cutting edges. P/N 12-03347 ..... $10.50

COMPOUND TUBING BENDER

Allows you to make precise left, right and offset bends with a simple, hand-held mechanism. The calibrated angle markings indicate 15 degree increments from 0 to 45 degrees for accurate results. Handles 4 popular tubing sizes and comes in a convenient vinyl storage pouch. P/N 12-03353 ..... $26.95

WEATHERHEAD

T-1295 Heavy Duty Segmented Flaring Tool (37°)

Tool Flares: 1/8", 3/16", 1/4", 5/16", 3/8", and 1/2", O.D. tubing. Forms 37° flares in annealed stainless steel (MIL-T-6845 or AMS-5566), cold drawn stainless steel, and annealed copper, brass, steel or aluminum. Bar has vice extension. Wt.: 3lbs. P/N 12-01166 .....$795.00

HI-DUTY FLARING TOOL 37°

For: 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing.

437-FB For use with soft copper, aluminum and brass tubing. New slip-on yoke permits use in tight quarters, allows flaring where there is little space between nut and tube end. Wt. 1.75 lbs. P/N 12-01581 ..... $79.80

ROL-AIR FLARING TOOL 37°

Faceted, hard chrome finished cone rolls out perfect flares above die block, then automatically burnishes flare face. Slip-on yoke permits use in tight quarters. Heat treated dies grip tubing without scoring. Flares and burnishes: 3/16", 1/4", 5/16", 3/8", 1/2" and 5/8" O.D. tubing. Wt. 1-1/2 lbs. Works on some Stainless Steel Tubing but not warranted for Stainless. P/N 12-01582 ..... $71.96

ROLO-FLAIR FLARING TOOL 37°

Operates on same principle as Imperial #507-FA but flares 1/8" (primer line) and 3/4" tubing as well. Size: 4"W x 4"D x 8"H. Wt. 2-1/2 lbs. Excellent tool for bench - not for close-quarter work. Not for use on Stainless Steel Tubing. P/N 12-01575 ..... $71.96

DELUXE 37° FLARING TOOL

Forms 37° flare to AN standards in steel, stainless steel (including MIL-T 6845), titanium, an other metal tubing. Three rollers in flaring cone roll out 37° flare above die block. Extension on yoke for clamping in vise. Furnished in plastic kit. Wt. 2-1/2 lb. P/N 12-01579 .....$329.00

TO

37° FLARING BLOCK FOR 1/8" TUBING

This tool is designed to flare 1/8" tubing for primer lines. Leaves no ridges or marks on tubing, complying with aircraft requirements. Furnished with 37° flaring punch. The slip-on yokes of most flaring tools also fit this block.

P/N 17010 ..... $24.80

37° DOUBLE LAP FLARING TOOL

This U.S. made 37° Double Lap Flaring Tool makes flares to AN standards in soft copper and aluminum tubing for 3/16" 1/2" O.D. Also makes single 37° S.A.E. standard and oversize flares. Adapters revolve for quick size change and act as positioning gauge for tube. For portable use or can be vise mounted. Sliding handle gives maximum leverage. Wt. 4 lbs.

P/N 12-00205 ..... $595.00

37° DOUBLE LAP FLARING TOOL KIT

Our 37° Double Lap Flaring Tool Kit includes the double lap flaring tool above which forms 37° double lap flares to AN10078 in soft copper and aluminum tubing (wall thick- ness to .040"). Flares tubing sizes 3/16", 5/16", 3/8", and 1/2" O.D. Also includes a tubing cutter, an inner-outer reamer, and a plastic carrying case. A quality tool kit which is made in the U.S.A.

P/N 12-00210 ..... $689.00

FLARING TOOL KIT 402FA

Forms 37° flares aircraft grade stainless steel (MIL-T-6845), titanium, and other metal tubing, both soft and hard. Positive stop gauge assures correct size of flare. The three rollers in the flaring cone roll out 37° flares above the die block while burnishing the flare face to a smooth finish. A built in extension on the yoke can be clamped in a vise for extra support. Satin chrome and black nickel finish. Complete kit includes flaring tool and reaming yoke. P/N 12-02423 ..... $399.00

BRAKE LINING & GENERAL RIVET SETS

Standard Model (403)- Designed especially to economically reline brakes, this riveting set is a handy tool for many other jobs where rivets are used to fasten leather, canvas, plastic and metal parts. ..... P/N 824 ..... $17.60

Brake lining Rivets ..... P/N 06-02300 ..... $0.03ea

Deluxe Model (404) - Our deluxe model brake relining tool makes it virtually impossible to botch a brake relining job. The threaded screw action of the rivet insertion tool insures a perfect roll on brake rivets every time without damaging the liner.

Standard Model (Not Threaded) ..... P/N 824 ..... $17.60

Deluxe Model (Threaded) ..... P/N 12-20810 ..... $22.85

Punch Non-Threaded / Brake Relining for model 403
P/N 12-01171 ..... $3.75

Anvil Punch / Brake Relining for model 404
P/N 12-01170 ..... $3.75

Brake Lining Rivet 4X6 ..... P/N 06-02300 ..... $0.03

BR1007 Rivet Set for Reline ..... P/N 12-01173 ..... $6.75

TO

PARKER TYPE AIRCRAFT TUBE BEADING TOOL

The Parker Beading Tool has been the number one choice of aircraft mechanics for making clamping beads in metal tubes. To this day, no other tool even comes close to matching its quality. So by special arrangement, the manufacturer tooled up to recreate this classic tool in every detail. In the process they have added a few enhancements of their own, such as ground, hardened, and polished surfaces for mar-free beads in aluminum, copper, brass, and mild steel tubes ranging from 1/4" to 1" diameter. Meets MILSPEC MS33660D and SAE AS5131 standards. P/N 12-01049 ..... $335.96

PLASTIC PIPE AND HOSE CUTTER

With a powerful, squeeze-grip ratchet, the Plastic Pipe and Hose Cutter can be operated with one hand. Elongated nose allows the cutter to slide into confined areas. Easily slice through PVC, ABS, PE and CPVC up to 1-5/8 in diameter. Quick Replacement Blade.

Cutter ..... P/N 12-03513 ..... $26.85

Replacement Blade ..... P/N 12-03514 ..... $8.75

IMPERIAL 470-FH TRIPLE HEAD 180° TUBING BENDER

The 470-FH Triple Head 180° Tube Bender bends 4 diameters of tubing with just one tool! It handles soft copper, aluminum and thin-walled steel tubing in 3/16", 1/4", 5/16" & 3/8" diameters. Like the heavy duty 464-FH, it features the patented ROTO-LOK™ two-stage handle that allows east fabrication of bends up to 180°. It also features optimized bending grooves that allow the user to bend the tubing in the smallest radius possible to enable tighter turns and minimize the space taken by the bends. Soft copper - .030-.032" wall. 304 stainless steel - .030-.032" wall. P/N 12-01042 ..... $38.50

ATS HAND RIVET SQUEEZER

Has a very solid feel, and professional look that will complement anyone's toolbox. Squeezes up to 5/32" aluminum (1/8" seel) rivets. Works with any rivet sets, or diple dies having a 3/16" (.187") shank. Adjustable ram does not need shims. Lifetime warranty. Features:•1.5" Yoke •Drop forged from Stainless Steel for unmatched strength and durability •Clasic bushed stainless steel finish. •Adjustable ram does not need shims •Squeezes aluminum rivets up to 5/32" and steel rivets up to 1/8" •Comfort grip rubber handles •4lbs shipping weight. P/N 12-01620 ..... $84.76

PNEUMATIC "C" SQUEEZER KIT

Lightweight and has the same power as the Chicago Pneumatic 214C squeezer on which it is based. It accepts the same yokes and attachments as the 214C squeezer, and is powerful enough to squeeze up to 1/8" solid aluminum, or 3/32" solid steel rivets. Complete kit includes ATS-114C Squeezer with a 1-1/2" yoke (p/n 14-3), a Longeron yoke (14-10), and a 17 piece assortment of squeezer and dimpler snaps. Features: • Compatible with Chicago Pneumatic 214C squeezers • Squeezes up to 1/8" aluminum or steel rivets • Compact only 10" long • Accepts all squeezer and dimpling sets with a .187" shank. P/N 12-03504 ..... $649.95

Description	Part No.	Price
Squeezer Yoke 1-1/16"	12-03663	$68.95
Yoke, Longeron	12-03664	$99.95
Squeezer Yoke 1-3/16"	12-03665	$69.95
Squeezer Yoke 1-1/2"	12-03666	$69.95
Squeezer Yoke 1-3/4"	12-03667	$105.95
Squeezer Yoke 2-1/2"	12-03668	$125.95
Squeezer Yoke 2-3/4"	12-03669	$125.95
Squeezer Yoke 3"	12-03670	$135.95
Squeezer Yoke 3-7/8"	12-03671	$145.95
Squeezer Yoke 5-5/8"	12-03672	$155.95
Squeezer Set Assortment, 17pc	12-03673	$119.95

ATS DELUXE HAND/BENCH RIVET SQUEEZER KIT

The Rivet Squeezer Kit is designed to take on any riveting task. It contains the new ATS Heavy Duty Rivet Squeezer, a Bench Mount Kit, plus and extra 1-1/2" yoke head to reach into tight areas. You'll also get a complete set of squeezers and dimple dies in a convenient holder. Ats Pro Lifetime warranty. 14 lbs (6.5Kg) shipping weight. P/N 12-02406 ..... $279.96

PROFESSIONAL RIVETING KIT

This Professional Riveting Kit has all the tools you need to drive rivets like a pro... It contains the best-selling ATS Pro Series 3X Rivet Gun, a selection 4 of our most popular Bucking Bars (141, 142, 148, and 149), plus a complete assortment of Rivet Sets to install Universal Head (AN470) or Flush (AN426) rivets in sizes 3/32" to 3/16".

And it all comes to you in a stylish molded case to keep things neatly organized. This is the prefect "field" kit to take with you anywhere -- it has the riveting tools you need conveniently laid out in one handy ready-to-go package. The Professional Riveting Kit is a part of our ATS-PRO Series, so you can rest assured that your tool investment will be well protected by an Unconditional 30 Day Money Back Guarantee, and industry-leading ATS Pro Lifetime Warranty. 19lbs shipping weight.

P/N 12-01698 ..... $223.96

HANDI-CLAMPS

Handi-Clamps are a specially designed tool for clamping various types of surfaces, shapes and thicknesses. Ideal for holding light plastics, wood, sheet metal and other materials temporarily. The clamping cap is 0-5/16"

TP640HC - 1" Jaw Depth ..... P/N 12-02305 ..... $1.95
TP641HC - 1-1/2" Jaw Depth ..... P/N 12-02306 ..... $1.95

SPRING TENSION CLAMPS

Spring tension clamps can be applied in a fraction of the time required for ordinary screw clamps. The AT542 clamp, with 2" throat depth, has a Zamak alloy yoke and a steel spring which provides a 70 lb. clamping pressure. Designed for use with sheet holder pliers. P/N AT542 ..... $10.60/ea.

SIDE GRIP CLAMPS

Side-Grip clamps are designed to clamp at the edge of the work area. Ideal for holding work pieces of all types, particularly during bonding, sealing or gluing operations. Plier-operated. Spring loaded. Constant clamping force. Color-coded for easy identification. Use TP74 or US902 installation tool. Made in the USA

Part No.	Clamping CAP (GAP)	EFF. Body Depth (Reach)	Body Length	Price
12-01161	0-1/2"	1/2"	2-3/16"	$1.85
12-01162	0-3/4"	1/2"	2-7/16"	$2.78
12-01143	0-1/2"	1"	2-3/16"	$2.25
12-02643	0-3/4"	1"	2-7/16"	$2.85

AT-114C3 QUICK-CHANGE RETAINER SPRING

Makes possible the changing of rivet sets without removal of retainer spring. For .402" shank dia. rivet sets. P/N 12-01079 ..... $4.65/ea.

AT 107A FLUSH RIVET SETS

Large radii at critical points to prevent breakage. Slightly crowned, highly polished face designed for rapid flush riveting where a smooth skin surface is essential. Shank dia. .401".

Part No.	Face Dia.	Length	Price
AT-107A-1	1"	2-3/4"	$22.65
AT-107A-3	1-1/4"	3-3/4"	$24.75

AT 100A STRAIGHT RIVET SETS

Cup surfaces are highly polished and guaranteed to conform with rivet heads. Carried in stock in AN470 (MS20470) universal-head cup shape. Overall length, 3-1/2", .401" dia. centerless-ground shank.

AT-100A-3-3/32 ..... 3/32" $6.75
AT-100A-3-1/8 ..... 1/8" $7.80
AT-100A-3-5/32 ..... 5/32" $8.50
AT-100A-3-3/16 ..... 3/16" $9.50

AT 101A OFFSET RIVET SETS

Same tool as AT100A but has 10° bend 1" back from the cup to allow added clearance. Permits easier riveting where obstructions are encountered.

AT-101A-3-3/32 ..... 3/32" $9.50
AT-101A-3-1/8 ..... 1/8" $9.50
AT-101A-3-5/32 ..... 5/32" $8.35
AT-101A-3-3/16 ..... 3/16" $12.80

HAND RIVET SQUEEZER

Designed to squeeze 1/16" - 5/32" rivets and dimple 1/16" - 3/16" in material up to .040" thickness. Takes standard 3/16" shank rivet squeezer sets. With adjustable ram and 2-piece C-yoke of heat treated stainless steel. Throat depth: 1.5". Gap: 1-1/4". Overall length: 14". Best quality squeezer on the market. P/N 12-00300 ..... $137.95

YOKES FOR RIVET SQUEEZER

Description	Part No.	Price
Squeezer Yoke THY-10	12-00308	$55.90
Squeezer Yoke THY-15	12-00309	$55.90
Squeezer Yoke THY-20	12-00310	$64.75
Squeezer Yoke THY-22	12-00315	$83.95
Squeezer Yoke THY-25	12-00318	$70.75
Squeezer Yoke THY-30	12-00320	$78.75
Squeezer Yoke THY-35	12-00321	$92.75
Squeezer Yoke THY-40	12-00322	$104.85
Squeezer Yoke THY-50	12-00323	$146.75
Squeezer Yoke THY-60	12-00324	$158.75
Squeezer Yoke THY-100	12-03688	$69.50
Squeezer Yoke THY-101	12-03689	$69.50
Squeezer Yoke THY-102	12-03690	$69.50
Squeezer Yoke THY-103	12-03691	$69.50
Squeezer Yoke THY-30m	12-03692	$158.75

SWIVEL HAND RIVET SQUEEZER

This tool incorporates a 3/8" stroke and 5/8" ram adjustment. The full 360° yoke can be locked in any position in relation to the handles. Uses standard squeezer sets with 3/16" shank diameter. Yoke depth: 1-1/2".

Model AT502AH-D ..... P/N 12-00400 ..... $267.95

INSTRUCTIONS FOR SELECTING RIVET SETS

To develop maximum power, the riveter must drive the rivet near the end of the riveter's stroke. For maximum power the combined length of the two rivet sets must be of the correct length. Determine the correct length as follows:

WHEN TWO CUPPED RIVET SETS ARE USED – The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the total thickness of the material being used.

WHEN TWO FLUSH SETS ARE USED – The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the overall length of the rivet after it is driven.

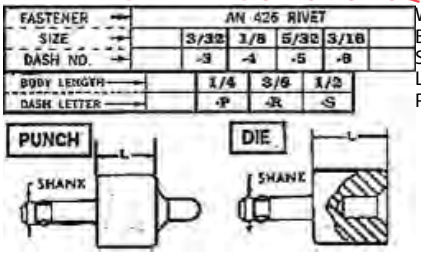
WHEN ONE CUPPED SET & ONE FLUSH SET ARE USED – The sum of the two rivet sets "L" dimension should equal the closed height dimension of the yoke minus the total thickness of the material being riveted and the height of the finished rivet head driven by the flush set. If necessary, select rivet sets a little short and shim to proper length with hardened shims listed in the table. The closed height dimension of the yoke referred to above is the opening available when jaws of plunger are in extreme closed or forward position with both rivet sets in place.

RIVET SETS FOR SQUEEZER

Assorted Squeezer Set. 5-piece, consisting of rivet sets for 3/32,1/8 and 5/32" AN470 rivets, and one flat set. Shank dia. 3/16".

P/N 26-5 ..... $24.65

DIMPLING SETS FOR SQUEEZER



When ordering, specify: Basic Part No. - Rivet Size No. - Body Length, Letter. PN PER SET 1 PUNCH 1 DIE

Part No.	Price
207/206-3-P	$33.75
207/206-3-R	$32.75
207/206-3-S	$32.50
207/206-4-P	$33.75

Part No.	Price
207/206-4-R	$32.75
207/206-4-S	$32.25
207/206-5-P	$31.00
207/206-5-R	$33.25

Part No.	Price
207/206-5-S	$27.90
207/206-6-P	$14.36
207/206-6-R	$32.75
207/206-6-S	$31.85

INDIVIDUAL CUPPED SQUEEZER SETS

Rivet Diameter	Body Length ("L" Dim.)	Part Number	Price
3/32"	3/8	AT108AR-3/32	$7.75
3/32"	1/4	12-01661	$7.80
3/32"	1/8	AT108AN-3/32	$6.50
3/32"	1/2	AT108S-3/32	$7.65
1/8"	1/8	AT108AN-1/8	$6.50
1/8"	1/4	12-01660	$6.90
1/8"	1/2	AT108S-1/8	$7.65
1/8"	3/8	AT108AR-1/8	$7.55
3/16"	1/4	12-02680	$7.50
3/16"	1/2	AT108S-3/16	$7.60
3/16"	3/8	AT108AR-3/16	$9.50
3/16"	1/8	AT108AN-3/16	$7.70
5/32"	1/4	12-01662	$7.60
5/32"	3/8	AT108AR-5/32	$7.60
5/32"	1/8	AT108AN-5/32	$7.80
5/32"	1/2	AT108S-5/32	$7.60

FLUSH RIVET SETS

Body Length ("L" Dim.)	Part No.	Price
1/8"	AT109AN	$4.90
1/4"	AT109AP	$4.65
3/8"	AT109AR	$5.35
1/2"	AT109AS	$5.85

TO

COUNTERSINK CUTTERS

MICROSTOP COUNTERSINK CUTTER KIT AT590CSK

This kit provides countersinking versatility with nine different 1/2" diameter cutters, six of the most commonly used foot pieces, and a high-speed bearing-constructed microstop. The microstop controls cutting depth in .001 increments, from 0 to 5/16". Cutters-ground on-centers to ensure concentricity-are 100°, with pilot diameters #40, #30, #21, 3/32", 1/8", 3/16", and 1/4".

P/N 12-00824 ..... $230.95

100° AT455 COUNTERSINK CUTTER

Designed for operating in angle drills with 1/4-28 threads and in the AT441SLS Micro Stop Countersink. Has 1/4-28 threaded shank. Cutter angle 100°. AT455D-4 has 7/16" dia. cutter head. Use with AT484 pilots. P/N AT455D-4..... $17.50

AT484 PILOTS

AT484 replaceable pilots have a .086" dia. shank with a flat to accommodate the set screw of the AT455 cutter. An undercut permits the head to seat on the cutter angle. Order by P/N.....$10.90 ea.

Part No.	Head Dia. "D"	Part No.	Head Dia. "D"
AT484-2	#40	AT484-56	3/32
AT484-12	#30	AT484-57	1/8
AT484-21	#21	AT484-59	5/32
AT484-31	#11	AT484-61	3/16
AT484-32	#10	AT484-63	7/32

AT441 HSS MICROSTOP COUNTERSINK

AT441 HS Micro Stop Countersink, similar to the AT442SLS unit, except with 1/4-28 female threaded nose to accommodate AT455 cutter.

P/N 12-01591 ..... $27.90

AT 442 HS MICRO STOP COUNTERSINK

A precision tool for production countersinking. Ball thrust bearing for absolute depth control. Adjusts in .001" increments, with positive adjustment lock. Skirt accepts cutters up to 5/8" dia. Has 1/4-28 male threaded shaft for use with AT418 cutters. Can be assembled and disassembled without special tools. Split shaft and taper locks pilot in place when cutter is tightened. Order cutters and pilots separately. P/N AT442-SLS $99.85

MICRO-STOP COUNTERSINK CAGES AND NYLONFOOT PIECE

2 Models available-one with NEEDLE bearing and one with BRONZE bushings. .001" increment depth adjustment. Positive adjustment lock. 1/4" dia. shank. 9/32" shaft travel. 9/16" cutter capacity. For 1/4-28 threaded cutters. Comes with "NO-MAR" foot piece. Rated at 3,000 RPM. Made in USA.

With Bronze Bushings

P/N 12-01412 ..... $36.50

With Needle Bearings

P/N 12-00940 ..... $46.50

BRAKE RIVET SET

Use these sets with your hand squeezer. Will set brake rivets eliminating the possibility of cracking your brake pads.

P/N 12-00550 ..... $39.90

DIE GRINDER MANDREL

Die Grinder Arbor (Mandrel). Holds your cutoff wheels. It has a 1/4" shank for use in most drills and die grinders. Can accomadate either 1/4" or 3/8" cut-off wheel through hole sizes.

P/N 12-02924 ..... $4.95

AT 409 SERIES STRAIGHT SHANK COUNTERSINK WITH INTERCHANGEABLE CUTTERS AND PILOTS

Assembly, consists of AT418E (1/2") cutter, AT416 pilot and AT409-1, 1/4" straight-shank. Has a collet-type shaft to securely hold the replaceable pilot.

When ordering specify: Part number of cutter and pilot dia.

Assembly Example: AT409 with 100° cutter A418E & 1/8 pilot.

(AT416-57) ..... Adapter only ..... P/N AT409-1 ..... $11.25

AT418 STOP COUNTERSINK CUTTERS

Three-straight flute replaceable pilot cutters with female thread. These cutters are designed with extra deep flute to permit numerous resharpenings and radial clearance to assure fast smooth cutting.

For Replaceable Pilots Refer to AT416 Series. Used With AT418

Part No.	Cutter Dia.	Thread Size	Pilot Hole	Price
AT418A-4	1/4"	1/4 - 28	.086	$27.50
AT418D-4	7/16"	1/4 - 28	.086	$33.50
AT418E-4	1/2"	1/4 - 28	.086	$34.50

120° AT418 COUNTERSINK CUTTER

Same type cutter as described above except with 120° Cutter Angle.

7/16" Cutter Diameter. P/N AT418D-7..... $39.80

AT416 PILOTS

Fit AT418 cutters. Undercut permits head to seat on cutter angle. Order by Part No. in table below.

Order by part Number..... $9.65 Ea.

Part No.	Head Dia. "D"	Part No.	Head Dia. "D"
AT416-2	#40	AT416-56	3/32
AT416-12	#30	AT416-57	1/8
AT416-21	#21	AT416-59	5/32
AT416-31	#11	AT416-61	3/16
AT416-32	#10	AT416-63	7/32
		AT416-65	1/4

COUNTERSINK SETS

Countersinks made of high-speed steel, 3-fluted and 14" - 28 threaded. Set includes #40, #30, #21, #10, and 1/4".

Countersink 82 degree 5 pc. set..... P/N 12-02883..... $42.95

Countersink 120 degree 5 pc. set..... P/N 12-02884..... $42.95

PANEL DIMPLING TOOL (C-SPEC 2700)

This panel dimpling tool is used for dimpling thin sheet metal panels to accept the 2700 Series C-Spec Fasteners. It can also be used to dimple panels to accept FJ4 Series Flush-Head Z-Spec Fasteners. This tool is made from premium tool steel and is bright Zinc plated. ..... P/N 12-02855..... $23.65

PANEL DIMPLING TOOL (C-SPEC 4000)

This panel dimpling tool is used for dimpling thin sheet metal panels to accept the 4000 Series Flush-Head C-Spec Grommets. This tool is made from premium tool steel and is bright Zinc plated.

P/N 12-02856..... $23.65

TO

HAND SEAMER

Handy tools for comparatively light work. Wide, deep jaws machined for smooth parallel fit. Form precise folds and seams. Strong, lasting drop-forged steel construction. No. 44 has plain 3 1/2" wide blades. No. 44r is similar with a radius to prevent tearing of aluminum and other light metals. No. 793 has a 3 1/2" wide blade with adjustable depth gauge.

P/N 12-00620 ..... $54.85

HAND SEAMER TP44

• Wide, deep jaws machined for smooth parallel fit • Forms precise folds and seams • 1" deep x 3-1/2" wide throat

P/N 44R..... $21.75

ROPER-WHITNEY METAL CRIMPER

Handy crimping tool to disperse excess metal. Depth of throat 1-1/8". Overall length 9". Wt. 1 lb.

P/N 111..... $79.95

ROPER-WHITNEY NOTCHER

Designed for fast, accurate 32° notch in sheet metal. Hook design of jaws permits notching to exact desired depth without slippage. Spring-return jaws. Capacity 20 ga. Wt. 1 lb.

P/N 141..... $86.75

FLUTING PLIERS

These aircraft-type fluting pliers are a drop-forged quality tool. Non-marring working surfaces of jaws specifically designed for use on aircraft components. Comfort grip handles.

P/N 12-00500 ..... $15.75

HOLE FLANGING TOOL

A real time saver for flanging lightening holes. Non-marring. Easy to use. Nylon rollers and ball bearings assure long life. P/N 12-00600..... $18.65

MIGHTY ROD SHEET METAL BENDER

Designed to bend solid round, square and flat alloys into nearly any shape and angle. FEATURES: • Works on solid materials up to 3/8" diameter. • Coils and bends wires of many sizes. • Includes dies for 1/2", 3/4", 1", 1 1/4" & 1-1/2" diameter bends. • Constructed of 3" x 3" aluminum base 1" thick with a 12" handle 7/8" in diameter. • Made in the USA. • 1 year Replacement Warranty.

P/N 12-00934 ..... $31.75

JUMBO ROD SHEET METAL BENDER

Constructed of 4" x 6" aluminum base 1" thick with a 16" handle 7/8" diameter. Bends solid round, square and flat iron. FEATURES: •Works on solid materials of up to 3/8" round and square (1/2" wide flat). • Coils and bends wire of many sizes. • Bends metal to any shape and degree of angle. • Include dies for 3/8", 3/4", 2", 3" & 4" diameter bends. • Installs on any vise. • Ideal for hobbyists, prototype shops and do-it-yourselfers. • Made in the USA. P/N 12-00935 ..... $54.75

ROPER-WHITNEY METAL PUNCH

#5 JR. HAND PUNCH – with one ton punching power. Punches 1/4" hole through 16 Ga. mild steel. Throat clearance 1-3/4". Complete set in metal box with 3/32, 1/8, 5/32, 3/16, 7/32, 1/4 and 9/32" punches & dies. Wt. 4-1/4 lbs. P/N 12-01600 ..... $89.90

BENCH MOUNT BASE – for stationary use. Base swivels to any position. Punch is held by L-shaped clamp rod through a 7/16" or larger hole in bench.

P/N 12-01700 ..... $34.75

STRAIGHT PUNCH & DIE SETS – for No. 5 Jr. punch in the seven sizes shown below.

3/32"	#12-01800	7/32"	#12-02200
1/8"	#12-01900	1/4"	#12-02300
5/32"	#12-02000	9/32"	#12-02400
3/16"	#12-02100	Each Size	$16.85/set

COMBINATION PUNCH & DIMPLING DIE SETS – For #5 Jr. punch. Punch and dimple in one operation. 3/32, 1/8 or 5/32" 100° punch & dimpling die sets.

1/8"..... #12-02500..... $71.65
3/32"..... #12-02600..... $79.25
5/32"..... #12-02700..... $61.25

ECONOMY MODEL BENDING BRAKE

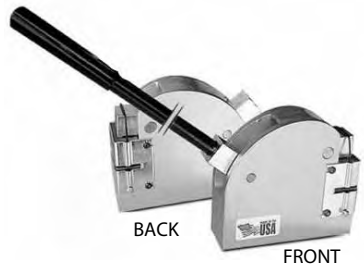
For bending and forming. Makes clean, smooth bends and forms up to 90° in metals. 18" & 30" handle up to 16GA aluminum. 40" handles is up to 20GA sheet metal, 18GA aluminum. All include brake bars. Clamps not included. Made in USA.

Up to 18" width stock..... P/N 12-02800..... $39.75
Up to 30" width stock..... P/N 12-02810..... $99.50

HEAVY DUTY BENCH BRAKE

This small, compact brake is excellent for all tough fabrication and repair jobs. The radiused dies make it possible to form those difficult materials such as 2024T3, 4130, and stainless without fear of cracks. Features solid steel bar construction, heavy duty clevis hinges, and portable bench mounting. Includes 2 sets of assorted width reversible dies with 1/16", 1/18", and 3/16" radii, plus complete instructions. Ideal for machine shops, aircraft, race car, boat builders, avionics installers, & auto repair shops. P/N 12-02850 .....$1,471.00

ORIGINAL LANCASTER PORTO-METAL FORMER



BACK FRONT

The Porto-Metal Former makes the specialty angle needed in minutes. Can be used on the work bench or in a vise to make inside angles, outside angles, straight bends - even circles, to a radius as small as 3". Jaws are made of hardened alloy steel. Works 18 gauge soft steel, 20 gauge stainless, 16 gauge aluminum up to 2" in width. 45 to 1 leverage for powerful press. Special malleable iron body will not break as we have found with cheaper imitations. Order #LSH-71 metal shrinker for inside angles. Order #LST-82 stretcher for outside angles. Wt. 12 lbs. each.

#LSH-71 Shrinker ..... P/N 12-19800..... $194.85
#LST-82 Stretcher ..... P/N 12-19900..... $183.75
Combination Shrinker/Stretcher Tool ..... P/N 12-02950..... $257.95

Either unit can be converted into its opposite by ordering complete conversion kit, includes jaws, blocks & wire.

TO

CHERRY RIVET TOOLS

HYDRO-SHIFT CHERRYLOCK® RIVETER

Specifically for the installation of all CherryLOCK® Rivets. Recommended primarily for 1/4" diameter CherryLOCK® rivets. It can be used to install all diameters and lengths as indicated on the tool capacity charts. Low recoil, low noise and a comfortable fit in the operator's hand. It can be operated in any posi-tion with one hand. The H681 Series pulling heads fit directly on this tool to install both bulbed and standard NAS type 2000 Series CherryLOCK® Rivets. With the proper adapters and pulling heads, this tool can install other types of rivets.

P/N 12-02983 ..... $11,436.00

LOCKBOLT POWER RIVETER G84

For high speed, reliable installation of the most popular sizes of aircraft Lockbolts. Incorporates a bayonet attachment for quick change of pulling heads. This tool can also be used to install blind bolts and blind rivets. A comfortable grip for one handed operation in any position. Compatible with Huck 352 & 230 riveter pulling heads.

P/N 12-03011 ..... $1,766.00

LOCKBOLT POWER RIVETER TOOL KIT G84LBK

Installs: 5/32", 3/16" & 1/4" NAS Style. LockBolt Includes: G84 LockBolt Power Riveter - Stroke: 9/16", Pulling Force: 5, 750 lbs (2,608 kgs), Weight: 7.7 lbs (3.5 kgs). H513-08-35 Pulling Head. H513S-05-20 Pulling Head Cherry 5/32" D LockBolt. H513S-06-20 Pulling Head MaxiBolt 3/16" LockBolt. P1395 Molded Carrying Case. 269C5 Grip Gauge LockBolt. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals.

P/N 12-03013 ..... $4,540.00

CHERRY RIVETER SERVICE KIT G84KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G84.

P/N 12-03012 ..... $141.75

LIGHTWEIGHT LOCKBOLT RIVETER TOOL KIT G83AKT

Installs: 5/32" & 3/16" MS Blind Bolt & LockBOLT, 1/8", 5/32" & 3/16" Cherry MAX Includes: G83 Lightweight LockBolt Hand Riveter - Stroke: 7/16", Pulling Force: 3, 750 lbs (1, 701 kgs), Weight: 4.95 lbs (2.3 kgs). H513S-05-20 Pulling Head Cherry 5/32" D LockBolt. H513S-06-20 Pulling Head 3/16" LockBolt. H701B-456 Pulling Head Straight 3/4" x 1 3/4". H753A-4562 CherryMAX Pulling Heads RT Angle 2 1/4" x 5 7/16" x 3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". H83B-5MB Pulling Head MaxiBolt 5/32"D. H83B-6MB Pulling Head MaxiBolt 3/16" D G83/G84. P1393 Plastic Box. 269B12 Maxibolt Gauge. 269C3 CherryMAX Grip Gauge. 269C5 Grip Gauge LockBolt. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. 744-300 Adapter. All Necessary Manuals

P/N 12-03008 ..... $5,278.00

LIGHTWEIGHT LOCKBOLT RIVETER TOOL KIT G83BKT

Installs: 5/32" & 3/16" MS Blind Bolt & NAS Style LockBolt Includes: G83 Lightweight LockBolt Hand Riveter - Stroke: 7/16", Pulling Force: 3, 750 lbs (1, 701 kgs), Weight: 4.95 lbs (2.3 kgs). H513S-05-20 Pulling Head Cherry 5/32" D LockBolt. H513S-06-20 Pulling Head 3/16" LockBolt. H83B-5MB Pulling Head MaxiBolt 5/32"D. H83B-6MB Pulling Head MaxiBolt 3/16" D G83/G84. P1393 Plastic Box. 269B12 Maxibolt Gauge. 269C5 Grip Gauge LockBolt. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals.

P/N 12-03009 ..... $5,396.00

CHERRY RIVETER SERVICE KIT G83KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G83.

P/N 12-03010 ..... $211.95

LIGHTWEIGHT LOCKBOLT RIVETER G83

Designed for high speed, reliable installation of the most popular sizes of aircraft Lockbolts. By bending the rubber pin deflector sideways, 1-1/2" additional clearance can be obtained. This tool can also be used to install blind bolts and blind rivets. A comfortable grip for one handed operation in any position. Compatible with Huck 352 & 230 riveter pulling heads. Stroke: 7/16". Pulling Force: 3, 750 lbs (1, 701 kgs). Weight: 4.95 lbs (2.3 kgs).

P/N 12-03007 ..... $1,439.00

CHERRY RIVETER SERVICE KIT G800KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G800.

P/N 12-03006 ..... $149.75

CHERRYMAX HYDRAULIC HAND RIVETER G800

The G800 is an ergonomic, lightweight hand powered riveter capable of installing a wide variety of blind fasteners. The all metal design makes this compact and robust tool ideal for use in rugged shop environments or field repair. Exceptional power with low hand effort for increased productivity. Mounting system (same as G704B) compatible with popular pulling heads including H782, H781-456& H753A-456. Leak-proof design with advanced seals & built-in redundancies. Ergo design with internal shock absorber & cushioned handle. Adjustable lever easily accommodates different hand sizes. Stroke: 3/4". Pulling Force: Up to 6000 lbs. Weight: 1.7 lbs (0.8 kgs).

P/N 12-03004 ..... $674.00

CHERRYMAX HYDRAULIC HAND RIVETER KIT G800CMR

G800CRM CherryMAX Hydraulic Hand Riveter Kit Includes: G800 CherryMAX Hydraulic Hand Riveter - Stroke 3/4", Pulling Force up to 6000 lbs, Weight 1.7 lbs. H781-456 Pulling Heads. H753A-456 Pulling Heads. 269C5 Grip Selector Gauge. 269B12 Grip Selector Gauge. Molded Plastic Case. All Necessary Manuals (except -6 all aluminum)

P/N 12-03005 ..... $2,748.00

CHERRY RIVETER SERVICE KIT G784KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G784.

P/N 12-03002 ..... $348.00

NUT-PLATE RIVETER G702A

The G702A is a pneumatic-hydraulic tool designed specifically for installation of nut plate rivets. Its durable, all metal housing makes this tool ideal for use in rugged shop environments. The H702-3NPR pulling head fits directly on the tool to install -3, -4, 2.5 mm & 3mm nut plate rivets. 10° angled head allows user to work using a natural hand position. A comfortable grip for one handed operation in any position. Air Pressure: 90 PSI (6.2 bar) min./110 PSI (7.6 bar) max. Cycle Time: approximately one second. Noise Level: 71 dB (A). Vibration: less than 2.5 m/s2. Air Consumption: .09 SCF / cycle (2.55 L / cycle). Stroke: 3/4". Pulling Force: 1,100 lbs (499 kgs). Weight: 3.5 lbs.

P/N 12-02985 ..... $1,328.00

CHERRYLOCK POWER RIVETER KIT G784CLRB

Includes: G784 Cherry Universal Power Riveter 12" High, 8 lbs., 15/16" Stroke. P1395 Molded Carrying Case. TLC852 CherryLock Selector Card. TLC864 CherryLock Process Manual. 269C3 CherryMAX Grip Gauge. 700A77 Bleeder Bottle. Note: No Pulling Heads Included.

P/N 12-03001 ..... $4,512.00

CHERRYLOCK POWER RIVETER G784

Installation of CherryLOCK rivets. Will install nearly all diameters of CherryLOCK rivets up to a half-inch grip, 'A' group only. With proper adapters & pulling heads this tool can be used to install other types of rivets. A comfortable grip for one handed operation in any position. Pulling heads not included with riveter. Air Pressure: 90 PSI (6.2 bar) min./110 PSI (7.6 bar) max. Noise Level: 69.7 dB (A). Vibration: less than 2.5 m/s2. Air Consumption: .27 SCF / cycle (7.65 L / cycle). Stroke: 7/8". Pulling Force: 2,600 lbs (1, 179 kgs). Weight: 8 lbs (3.6 kgs)

P/N 12-02998 ..... $3,180.00

POWER RIVETER G747

Installation of CherryMAX and nut plate rivets. This tool utilizes straight, offset and right angle pulling heads, all of which can install -4, -5 and -6 diameter CherryMAX bulb type rivets in all head styles, materials and grip lengths. Extensions are available for extending the pulling heads to reach limited access areas. 10° angled head allows user to work using a natural hand position. A comfortable grip for one handed operation in any position. Same weight as the G702A, with the power of much larger tools.

P/N 12-02995 ..... $879.00

TO

CHERRY RIVET TOOLS

CHERRYLOCK POWER RIVETER KIT G784CLRA

Installs: 1/8" to 3/16", NAS 1398/9. Type & Cherry Lock. Includes: G784 Cherry Universal Power Riveter 12" High, 8 lbs., 15/16" Stroke. H681-4C CherryLock H681Pulling Heads Dia. 1/8" Dim. A=.208 B=.341. H681-5C CherryLock Pulling Head 5/32" D. H681-6C CherryLock H681 Pulling Heads Dia. 3/16" Dim. A=.335 B=.386. P1395 Molded Carrying Case. TLC852 CherryLock Selector Card. TLC864 CherryLock Process Manual. 269C3 CherryMAX Grip Gauge. 700A77 Bleeder Bottle.

P/N 12-02999 ..... $5,266.00

CHERRY RIVETER SERVICE KIT G747KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G747.

P/N 12-02996 ..... $185.99

CHERRY RIVETER SERVICE KIT G746KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G746A.

P/N 12-02994 ..... $227.95

CHERRY RIVETER SERVICE KIT G704KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G704B.

P/N 12-02990 ..... $192.75

CHERRY RIVETER SERVICE KIT G689KS

All the seals, 'O'-rings, gaskets and hardware required for routine maintenance of your Cherry blind riveters. A must for any in-house repair facility. For Tool G689.

P/N 12-02984 ..... $336.00

BLIND BOLT RIVETER TOOL KIT G84-MBK

Installs: 5/32", 3/16" & 1/4" MS Blind Bolt
Includes: • G84 Power Riveter Cherry- Stroke: 9/16", Pulling Force: 5, 750 lbs (2,608 kgs), Weight: 7.7 lbs (3.5 kgs) • H83B-5MB Pulling Head MaxiBolt 5/32" D • H83B-6MB Pulling Head MaxiBolt 3/16" D G83/G84 • H84A-8MB Pulling Head MaxiBolt 1/4" D G84 • P1395 Molded Carrying Case • TLC872 Cherry Maxibolt Card • 269B12 Maxibolt Gauge • 670A20 Stem Catcher Bag • 700A77 Bleeder Bottle P/N 12-03015 ..... $3,535.00

CHERRYMAX POWER RIVETER KIT G747CMR

Installs: NAS 9301 to 9312 (1/8" to 3/16"). MS90353/4. MS21140/1. TAF "S" TYPE (1/8" & 5/32"). MS20604/5 (3/32"). Includes: G747 Cherry Lightweight - Installs CherryMAX Rivets. H701B-456 Pulling Head Straight 3/4" x 1-3/4". H747-3NPR Pulling Head. H753A-456 CherryMAX Pulling Heads RT Angle 2-1/4"X5-7/16"X3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". P1393 Plastic Box. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals.

P/N 12-02997 ..... $2,568.00

CHERRY POWER RIVETER KIT G746ACMRB

Installs: -4, -5, -6 CherryMAX. Includes: G746A Power Riveter Cherry 1/8",5/32",3/16" "A" Rivets. H701B-456 Pulling Head Straight 3/4" x 1-3/4". H753A-456 CherryMAX Pulling Heads RT Angle 2-1/4"X5-7/16"X3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". P1393 Plastic Box. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals. P/N 12-02992 ..... $3,368.00

CHERRYLOCK POWER RIVETER KIT G746ACMRW

Installs: SST & -3, -4, -5, -6. CherryLock 'A'. Includes: G746A Power Riveter Cherry 1/8",5/32",3/16" "A" Rivets. H955-3 Pulling Head. H955-4 Pulling Head H955-5 Pulling Head. H955-6 Pulling Head. P1393 Plastic Box. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle. All Necessary Manuals. P/N 12-02993 ..... $3,534.00

CHERRY POWER RIVETER KIT G704BCMR

Installs -4, -5, -6 CherryMax. Includes: 6704B Power Riverter - Cap = 1/8-3/16" Wt. = 4 1/2 lbs. H701B-456 Pulling Head Straight 3/4" x 1-3/4". H753A-456 CherryMAX Pulling Heads RT Angle 2-1/4"X5-7/16"X3/8". H781-456 Cherry Pulling Head Offet 1/8"-5/32"-3/16". P1393 Plastic Box. TLC816 CherryMAX Process Manual. TLC865 CherryMAX Selector Guard. 269C3 CherryMAX Grip Gauge. 670A20 Stem Catcher Bag. 700A77 Bleeder Bottle.

P/N 12-02988 ..... $3,285.00

CHERRY HAND NIPPER

Used for flush trimming Cherry rivets.

P/N 12-02977 ..... $44.55

GRIP GAUGE LOCKBOLT

Cherry Grip Gauge Lockbolt. Material thickness & grip.

P/N 12-02979 ..... $20.70

MAXIBOLT GRIP GAUGE 269B12

Cherry Maxibolt Grip Gauge 269B12.

P/N 12-02978 ..... $12.50

CHERRYMAX GRIP GAUGE

Rivet Grip & Diameter Gauge.

P/N 12-00217 ..... $8.50

POWER RIVETER G746A

Pneumatic-hydraulic tool designed specifically for installation of CherryMAX Bulb, CherryMAX 'AB' wiredraw and CherryLOCK 'A' wiredraw rivets. Ideal for use in rugged shop environments. This tool utilizes straight, offset and right angle pulling heads. A comfortable grip for one handed operation in any position. Stroke: .875". Pulling Force: 1,850 lbs (839 kgs). Weight: 4.25 lbs (1.9 kgs). P/N 12-02991 ..... $864.00

G84-LS SPLIT POWER RIVETER

Designed for high-speed, reliable installation of the most popular sizes of blind rivets, lockbolts and blind bolts. Fastener installation in many limited access areas and also reduces operator fatigue. This tool installs all Lockbolt, blind bolts and blind rivets to 1/4" diameter, as well as Cherry rivetless nut plate in all sizes. Stroke: 0.53". Pulling Force: 5700 lbs (2608 kgs). Weight: 11.8 lbs (5.4 kgs). P/N 12-03014 ..... $4,665.00

LOCKBOLT HEAVY-DUTY POWER RIVETER G87D

Heavy-duty production tool designed for high speed, reliable installation of the most popular sizes of aircraft Lockbolts. Ideal for use in rugged shop environments. By bending the rubber pin deflector sideways, 1-1/2" additional clearance can be obtained. This tool can also be used to install blind bolts and blind rivets. Stroke: 9/16". Pulling Force: 9,500 lbs (4,309 kgs). Weight: 10.75 lbs (4.9 kgs) P/N 12-03016 ..... $3,878.00

SPLIT POWER RIVETER G704B-40SH

Installation of CherryMAX rivets in applications with extremely limited access. Equipped with an 8 foot hose. Pulling heads not included with riveter. Hose Length: 10' (305 cm). Stroke: .518". Pulling Force: 3136 lbs (1423 kgs). Weight: 4.5 lbs (2.0 kgs) (power unit only) P/N 12-02987 ..... $2,168.00

SPLIT POWER RIVETER G704B-SR

Designed specifically for the installation of CherryMAX rivets in applications with extremely limited access. Equipped with an 8 foot hose. Pulling heads not included with riveter. Hose Length: 3" (91.5 cm). Stroke: .518". Pulling Force: 3136 lbs (1423 kgs). Weight: 4.5 lbs (power unit only).

P/N 12-02989 ..... $1,659.00

NUT-PLATE RIVETER G902 (FEED THROUGH)

All-pneumatic tool designed specifically for installation of nut plate rivets. This tool utilizes straight pulling heads which can install 3/32" and 1/8" pull-through type nut plate rivets and 3/32" CherryLOCK 'A' rivets. Stroke: 3/4". Pulling Force: 550 lbs (250 kgs). Weight: 2 lbs (0.9 kgs) P/N 12-03017 ..... $723.00

NUT-PLATE RIVETER G902-15 (SIDE EJECT)

The G902-15 (side eject) is an all-pneumatic tool designed specifically for installation of nut plate rivets. This tool utilizes straight pulling heads which can install 3/32" and 1/8" pull-through type nut plate rivets and 3/32" CherryLOCK 'A' rivets. Stroke: 3/4". Pulling Force: 550 lbs (250 kgs). Weight: 2 lbs (0.9 kgs) P/N 12-03018 ..... $880.00

CHERRY HAND RIVETER G30

Pulling head is integral part of tool. Great in areas with limited access or power limitations. The G30 is an efficient, compact and lightweight tool for installing Cherry LOCK 'A' rivets. Overall length: 9 1/4" (23.5cm). Weight 0.8 lbs.. P/N 12-02982 ..... $327.00

CHERRYLOCK POWER RIVETER TOOL KIT G784KT

Includes: • G784 CherryLock Power Riveter - Stroke: 7/8", Pulling Force: 2,600 lbs (1, 179 kgs), Weight: 8 lbs (3.6 kgs) • B36B740 Valve Spring Installation Tool • B37B740 Valve Sleeve Removal Tool • 74DA43 Shift Piston Tool • 680A114 Seal Guide • 680A114 1 1/2" End Cap Socket Wrench • 680A48/49 Clamp Wrench • 700B65 Packing Plug Wrench • 740A43 Power Cylinder Tool • 700A61 Piston Rod Wrench • P1178 Valve Plug Extractor • 700A60 Seal Guide P/N 12-03003 ..... $2,587.45

TO

CHERRY PULLING HEADS

PULLING HEAD FOR CHERRYLOCK® A-RIVETS H9055

STEM SIDE EJECTION: H9055 series pulling heads are available for installation of 3/32", 1/8", 5/32" and 3/16" diameter locked spindle CherryLOCK® 'A' code rivets in all materials, head styles and grip lengths. Stems are ejected from the side of the pulling head.

H9055-3: 3/32"..... P/N 12-03132 ..... $694.00
H9055-4: 1/8"..... P/N 12-03133 ..... $694.00
H9055-5: 5/32"..... P/N 12-03134 ..... $694.00
H9055-6: 3/16"..... P/N 12-03135 ..... $694.00

CHERRY® MS STRAIGHT PULLING HEADS H9040

Cherry MS Straight Pulling Heads - H9040 Series.

H9040-4C..... P/N 12-03127 ..... $1,079.00
H9040-5C..... P/N 12-03128 ..... $1,079.00
H9040-6C..... P/N 12-03129 ..... $1,079.00
H9044-8C..... P/N 12-03130 ..... $1,079.00

OFFSET MAXIBOLT PULLING HEAD H856-6MB

Maxibolt Pulling Head. Offset head style. Maxibolt Diameters: 3/16".
P/N 12-03112 ..... $1,443.00

CHERRY® NUT PLATE PULLING HEADS H902

These pulling heads fit directly onto Cherry G902 and G746A Power Riveters.

Cherry P/N	Rivet Dia. Inches	Part No.	Price
H902-3NPR	-3 (3/32")	12-03125	$322.00
H902-4NPR	-4 (1/8")	12-03126	$398.00

CHERRY® FLUSH STYLE PULLING HEADS H9015

Flush style pulling heads will install both universal and countersunk rivets. These pulling heads fit directly onto Cherry G902-15 riveters.

H9015-3C..... P/N 12-03121 ..... $558.00
H9015-4C..... P/N 04-01515 ..... $562.00
H9015-5C..... P/N 12-03123 ..... $555.00
H9015-6C..... P/N 12-03124 ..... $555.00

PULLING HEADS FOR CHERRYLOCK A-RIVETS H955

The H955 Series pulling heads fit directly on the G701A, G704B, G746A and G747 riveters. The heads in this series are capable of installing 3/32", 1/8", 5/32" and 3/16" diameter rivets in all materials and head styles and grip lengths. Stems feed through the pulling head and are ejected out the back of the tool.

H955-3: 3/32"..... P/N 12-03136 ..... $413.00
H955-4: 1/8"..... P/N 12-03137 ..... $439.00
H955-5: 5/32"..... P/N 12-03138 ..... $439.00
H955-6: 3/16"..... P/N 12-03139 ..... $460.00

COMPACT UNIVERSAL HEAVY DUTY PULLING HEAD HD800

Description	Part No.	Price
HD800-6MB Installs Maxibolt -6 "S" type Cherry	12-03140	$509.00
HD800-6MBU Installs Maxibolt -6 "U" type / "S" type AFS	12-03141	$577.00
HD800-8MB Installs Maxibolt -8 "S" type	12-03144	$509.00
HD800-8MBU Installs Maxibolt -8 "U" type	12-03145	$711.00
HD800 Installs CherryMAX "AB" -8 (all materials) 8 Dia. MB Plus	12-03142	$548.00
HD800-8A Installs Cherrylock "A" code	12-03143	$548.00

CHERRY OFFSET PULLING HEAD H782

The Cherry® brand H782 is a new universal, off-set pulling head capable of installing a broad variety of pull-type fasteners. Its strength, light weight and compact dimensions make it ideal for a diverse range of applications including restricted spaces. The H782 is capable of installing CherryMAX rivets, CherryLOCK 'A' code rivets, MaxiBolt 'S' type blind bolts, MBC rivets, SPR rivets, NAS1398 A & AB code products, MS90353/4, MS21140/1, 4, 5, NAS1719, 1720 & 1721 and pull-through type nut plate rivets. Note: Uses CherryMAX mounting system (G704B, G746A, G747). P/N 12-03091 ..... $612.00

MAXIBOLT STRAIGHT PULLING HEADS

For use with G83 & G84 tools. For use with Cherry shift washer type only.

H83B-5MB ..... P/N 12-03098 ..... $465.00
H83B-6MB ..... P/N 12-03101 ..... $494.00
H84A-8MB ..... P/N 12-03107 ..... $549.00
H84C-8MB ..... P/N 12-03110 ..... $607.00

MAXIBOLT PULLING HEAD H84B-568

Maxibolt Pulling Head. Straight head style. Maxibolt Diameters: 5/32", 3/16".
P/N 12-03109 ..... $739.00

MAXIBOLT PULLING HEAD (S TYPE) H744

Cherry P/N	Head Style	MaxiBolt Dia.	Part No.	Price
H744-5MB	Straight	5/32"	12-03085	$576.00
H744-6MB	Straight	3/16"	12-03086	$634.00

MAXIBOLT U-TYPE PULLING HEAD

Pulling heads to install "U" type Maxibolts®. Will fit G83 or G84-LS (w/744-700 adaptor).

H83B-5MBU ..... P/N 12-03099 ..... $465.00
H83B-6MBU ..... P/N 12-03102 ..... $446.25
H84A-8MBU ..... P/N 12-03108 ..... $596.00
H84C-8MBU ..... P/N 12-03111 ..... $814.00

MAXIBOLT® PULLING HEAD (S TYPE) H652-8MB

Cherry MaxiBolt Pulling Head (S Type): Head Style - Straight, MaxiBolt Diameter - 1/4"
P/N 12-03067 ..... $822.00

MAXIBOLT RIGHT ANGLE PULLING HEAD H828

This pulling head aids installation of MAXIBOLTs in limited access applications. For use with G744 tool. For use with Cherry shift washer type only. Use 744-200 adapter for G83/G84.

Cherry P/N	Head style	Rivet Dia. Inches	Part No.	Price
H828-5MB	Right Angle	5/32"	12-03094	$2,061.00
H828-6MB	Right Angle	3/16"	12-03095	$2,061.00
H828-8MB	Right Angle	1/4"	12-03097	$2,300.00

RIGHT ANGLE PULLING HEAD H690-4C

H690-4C pulling head. 1/8" rivet diameter. Countersunk Head.
P/N 12-03082 ..... $1,106.00

PULLING HEAD FOR CHERRYLOCK® "A" CODE RIVETS H9044-8

These heads fit directly on the G55, G86, both obsolete and G740 Cherry® power riveters. Will fit on the G784 and G689 hydro-shift Cherry® riveters with the 680B57 adapter. For the 1/4" Cherrylock "A" rivets. 8 Diameter. P/N 12-03131 ..... $1,906.00

CHERRYMAX STRAIGHT PULLING HEAD H846A-456

This pulling head installs 1/8", 5/32" & 3/16" Nominal & Oversize CherryMAX Rivets (G744 only). P/N 12-03103 ..... $439.00

CHERRYMAX RIGHT ANGLE PULLING HEAD H828-8

CherryMAX Right Angle Pulling Head installs 1/4" Nominal & Oversize CherryMAX Rivets (G744 only). P/N 12-03096 ..... $1,957.00

CHERRYMAX OFFSET PULLING HEAD H827-8

CherryMAX Offset Pulling Head installs 1/4" Nominal & Oversize CherryMAX Rivets (G744 only). P/N 12-03093 ..... $1,458.00

CHERRYLOCK® RIGHT ANGLE PULLING HEADS H886

The H886 series right angle s fit directly on the G701A, G704B, G746A and G747 power riveters to install CherryLOCK® 'A' brand rivets in 3/32", 1/8", 5/32" and 3/16" diameters in all materials, head styles and up to -04 grip length.

H886-3 ..... P/N 12-03113 ..... $1,063.00
H886-4 ..... P/N 12-03114 ..... $1,063.00
H886-5 ..... P/N 12-03115 ..... $1,063.00
H886-6 ..... P/N 12-03116 ..... $1,063.00

OFFSET LOCKBOLT PULLING HEADS H562-6B/8B

The H562 series pulling heads accomodate the 1/8" through 1/4" lockbolts. Requires adapter (744-100) when used on the Cherry G84 tool.

Diameter -6..... P/N 12-03059 ..... $1,323.00
Diameter -8..... P/N 12-03060 ..... $1,322.00

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CHERRY PULLING HEAD H1900-456

The H1900-456 is designed to reliably install all sizes of the single action NAS1919/1921 product assembled with or without a drive washer. To install the product without a drive washer use the appropriate nose piece. Total weight without riveter: .27 lbs (0.1222 kg). Use with G83 or G84 Cherry Riveter or any riveter equipped with a 352 Style Mounting System. P/N 12-03019.....$618.00

COMPACT UNIVERSAL STRAIGHT PULLING HEAD H800

Compact Universal Straight Pulling Head for G800 riveter. Weight - 0.15 lbs. P/N 12-03092.....$192.95

SHORT PINTAIL BASIC PULLING HEAD H513

Cherry Short Pintail Basic Pulling Head H513 - See Tool Specifications below to determine which pulling head is needed.

Cherry P/N	LockBolt Dia.	Installed Length	Part No.	Price
H513-04-20	1/8"	2" (51 mm)	12-03020	$784.00
H513-04-35	1/8"	3-1/2" (89 mm)	12-03021	$699.00
H513-05-35	5/32"	3-1/2" (89 mm)	12-03022	$855.00
H513-06-20	3/16"	2" (51 mm)	12-03023	$808.00
H513-06-60	3/16"	6" (152 mm)	12-03024	$1,085.00
H513-08-35	1/4"	3-1/2" (89 mm)	12-03025	$1,113.00

SWIVEL NOSE PULLING HEAD H513S

Cherry Swivel Nose Pulling Head H513S - See Tool Specifications below to determine which pulling head is needed.

Cherry P/N	LockBolt Dia.	Installed Length	Part No.	Price
H513S-05-20	2" (51 mm)	5/32"	12-03026	$725.00
H513S-05-35	3-1/2" (89 mm)	5/32"	12-03027	$659.00
H513S-06-20	2" (51 mm)	3/16"	12-03028	$851.00
H513S-06-24	2-3/8" (60 mm)	3/16"	12-03029	$805.00
H513S-06-35	3-1/2" (89 mm)	3/16"	12-03030	
H513S-06-48	4-13/16" (122 mm)	3/16"	12-03031	$705.00
H513S-08-24	2-3/8" (60 mm)	1/4"	12-03032	$940.00
H513S-08-35	3-1/2" (89 mm)	1/4"	12-03033	$860.00
H513S-08-48	4-13/16" (122 mm)	1/4"	12-03034	
H513S-10-27	2-11/16" (68 mm)	5/16"	12-03035	
H513S-10-42	4-3/16" (106 mm)	5/16"	12-03036	
H513S-12-27	2-11/16" (68 mm)	3/8"	12-03037	$900.00
H513S-12-42	4-3/16" (106 mm)	3/8"	12-03038	$977.00

SELF RELEASING SWIVEL NOSE PULLING HEAD H513SR

Cherry Self Releasing Swivel Nose Pulling Head H513SR - See Tool Specifications below to determine which pulling head is needed.

Cherry P/N	LockBolt Dia.	Installed Length	Part No.	Price
H513SR-05-20	2" (51 mm)	5/32"	12-03039	$725.00
H513SR-05-35	3-1/2" (89 mm)	5/32"	12-03040	$976.00
H513SR-06-20	2" (51 mm)	3/16"	12-03044	$871.00
H513SR-06-24	2-3/8" (60 mm)	3/16"	12-03045	$806.00
H513SR-06-35	3-1/2" (89 mm)	3/16"	12-03046	$1,018.00
H513SR-06-48	4-13/16" (122 mm)	3/16"	12-03047	$1,053.00
H513SR-08-24	2-3/8" (60 mm)	1/4"	12-03048	$770.00
H513SR-08-48	4-13/16" (122 mm)	1/4"	12-03049	$667.00
H513SR-10-27	2-11/16" (68 mm)	5/16"	12-03050	$828.00
H513SR-10-42	4-3/16" (106 mm)	5/16"	12-03051	$704.00
H513SR-12-27	2-11/16" (68 mm)	3/8"	12-03052	$912.00
H513SR-12-42	4-3/16" (106 mm)	3/8"	12-03053	$979.00

SELF RELEASING SWIVEL NOSE/ CHISEL SHAPE PULLING HEAD H513SRC

Cherry Self Releasing Swivel Nose/Chisel Shape Pulling Head H513SRC - See Tool Specifications below to determine which pulling head is needed.

Cherry P/N	LockBolt Dia.	Installed Length	Part No.	Price
H513SRC-05-20	2" (51 mm)	5/32"	12-03054	$945.00
H513SRC-05-35	3-1/2" (89 mm)	5/32"	12-03055	$979.00
H513SRC-06-20	2" (51 mm)	3/16"	12-03056	$979.00
H513SRC-06-35	3-1/2" (89 mm)	3/16"	12-03057	$1,083.00
H513SRC-08-48	4-13/16" (122 mm)	1/4"	12-03058	$1,270.00

OFFSET LOCKBOLT PULLING HEAD H563

See Tool Specifications below to determine which pulling head is needed.

Cherry P/N	Type	LockBolt Dia.	Part No.	Price
H563-4B	Basic Pulling	1/8"	12-03061	$1,322.00
H563-5B	Basic Pulling	5/32"	12-03062	$1,322.00
H563-6B	Basic Pulling	3/16"	12-03063	$1,322.00

OFFSET LOCKBOLT/ SHORT PINTAIL PULLING HEAD H563SP

See Tool Specifications below to determine which pulling head is needed.

Cherry P/N	Type	LockBolt Dia.	Part No.	Price
H563SP-4B	Basic Pulling/Short Pintail	1/8"	12-03064	$1,322.00
H563SP-5B	Basic Pulling/Short Pintail	5/32"	12-03065	$1,322.00
H563SP-6B	Basic Pulling/Short Pintail	3/16"	12-03066	$1,322.00

CHERRYLOCK® STRAIGHT PULLING HEAD H681

Fits directly on all Cherry hydroshift riveters, 2-9/16" installed. Separate pulling head is required for each style & diameter rivet.

Description	Rivet Dia.	A/B Dims.	Part No.	Price
H681-3C Universal C-sunk Head	3/32"	.163"/.332"	12-03070	$382.00
H681-4C Universal C-sunk Head	1/8"	.208"/.341"	12-03071	$382.00
H681-4F Countersunk Head 156	1/8"	.430"/.358"	12-03072	$825.00
H681-4S Countersunk Head NAS 1097	1/8"	.174"/.341"	12-03073	$898.00
H681-5C Universal C-sunk Head	5/32"	.269"/.352"	12-03074	$395.00
H681-6C Universal C-sunk Head	3/16"	.335"/.386"	12-03075	$366.95
H681-6F Countersunk Head 156	3/16"	.625"/.367"	12-03076	$860.00
H681-6S Countersunk Head NAS 1097	3/16"	.281"/.386"	12-03077	$902.00
H681-8C Universal C-sunk Head	1/4"	.458"/.398"	12-03078	$455.00

CHERRYLOCK® STRAIGHT PULLING HEAD H681B

Fits directly on all Cherry hydroshift riveters, 2-9/16" installed. Separate pulling head is required for each style & diameter rivet.

Description	Rivet Dia.	A/B Dims.	Part No.	Price
H681B166-4 Uni-Sink Head	1/8"	.250" / .359"	12-03079	$890.00
H681B166-5 Uni-Sink Head	5/32"	.313" / .377"	12-03080	$890.00
H681B166-6 Uni-Sink Head	3/16"	.375" / .419"	12-03081	$890.00

CHERRYMAX® STRAIGHT PULLING HEAD H701B-456

CherryMAX Straight Pulling Head H701B-456 - Installs 1/8", 5/32" & 3/16" Nominal & Oversize CherryMAX Rivets.
P/N 12-03083.....$153.90

NUT PLATE PULLING HEAD W/ NOSEPIECES H702-3NPR

Cherry® Nut Plate Pulling Head. Includes nosepieces: 728A9-3 (3/32"") & 728A9-104 (1/8""). For G702A Riveter. Installs 3/32" & 1/8, 2.5 mm & 3 mm Nut Plate. P/N 12-03084.....$231.95

CHERRYMAX STRAIGHT PULLING HEAD H744A-8

CherryMAX Straight Pulling Head installs 1/4" Nominal & Oversize CherryMAX Rivets (G744 Only).
P/N 12-03087.....$569.00

CHERRYMAX RIGHT ANGLE PULLING HEAD H753A-456

CherryMAX Right Angle Pulling Head H753A-456 installs 1/8", 5/32" & 3/16" Nominal & Oversize CherryMAX Rivets. P/N 12-03089.....$636.00

CHERRYMAX OFFSET PULLING HEAD H781-456

CherryMAX Offset Pulling Head installs 1/8", 5/32" & 3/16" Nominal & Oversize CherryMAX Rivets.
P/N 12-03090.....$472.00

CHERRYLOCK "A" CODE PULLING HEAD H84-8CLA

Cherrylock "A" Code Pulling Head for use with G84 riveters. Tool weight (without riveter): .3 lbs (0.14 kg). P/N 12-03104.....$827.00

STRAIGHT PULLING HEAD -8 CHERRYMAX® H84A-8

Straight pulling head H84A-8 for use with G84 Power Riveter and G84-LS Split Power Riveter (with adaptor 744-700). Pulling Head Weight: 0.2 lbs (0.09 kg). P/N 12-03106.....$629.00

COMPACT UNIVERSAL HEAVY DUTY PULLING HEAD HD800

HD800 Heavy Duty Pulling Heads are used with the G-800 hand riveter. Weight- 0.2 lbs.

Description	Part No.	Price
HD800-6MB Installs Maxibolt -6 "S" type Cherry	12-03140	$509.00
HD800-6MBU Installs Maxibolt -6 "U" type / "S" type AFS	12-03141	$577.00
HD800-8MB Installs Maxibolt -8 "S" type	12-03144	$509.00
HD800-8MBU Installs Maxibolt -8 "U" type	12-03145	$711.00
HD800 Installs CherryMAX "AB" -8 (all materials) 8 Dia. MB Plus	12-03142	$548.00
HD800-8A Installs Cherrylock "A" code	12-03143	$548.00

TO

RIVET GUNS

CHERRY G-28 HAND RIVETER GUN

The Cherry G-28 is a lightweight (13 oz.) ruggedly compact hand tool designed to efficiently set a broad range of Cherry commercial rivets. A unique torsion spring keeps the lever arm in place, ready to accept rivet after rivet. The G-28 comes with two popular size nosepieces, 728A9-4 (to set Cherry N Rivets - 1/8" dia. & Cherry Q Rivets - 1/8" dia.) and 728A9-6 (to set Cherry N Rivets - 5/32" & 3/16" dia. & Cherry Q Rivets - 5/32" & 3/16" dia.), one of which is stored securely out of the wav in the riveter handle. P/N 12-03000.....$123.75

CHERRY G-29 HAND RIVETER

The Cherry® G-29 Hand Riveter is an efficient, compact, lightweight tool for installing Cherry® NUT-PLATE rivets. It comes equipped with a 728A9-3 nosepiece to install 3/32" rivets and has a 728A9-104 nosepiece stored in the handle for installing 1/8" rivets. The G-29 Riveter is 9-1/4" long, weighs just 13 ounces and is intended for use when access or power limitations prevent the use of Cherry® power tools. P/N 12-00701.....$118.75

CHERRY G-27 HAND RIVETER KIT

The Cherry G-27 Hand Riveter is designed specifically for the most efficient installation of 1/8" CherryMAX Rivets. The G-27 Riveter is intended for use where access or power limitation prevents the use where access or power limitation prevents the use of Cherry pneumatic power tools. Overall length of the G-27 is 9-1/4", the net weight is just 13 ounces and the pulling head is an integral part of the tool.

P/N 12-03105..... $93.75

RIVET KIT

This rivet kit includes 200 assorted Klik-Fast rivets in popular sizes. The molded plastic case houses and protects the tool and rivets. Weight 4 lbs.

P/N 12-03100..... $97.85

120° FLUSH DIMPLING TOOL

This unique tool for 1/8" 120° countersunk "Pop" rivets attaches to the Cherry G-28 standard hand "Pop" rivet gun. Simple design makes dimpling foolproof, quick and easy, with no cracking of metal. For use on aluminum to .040" thickness. P/N 17014 .....$10.75

ADJUSTABLE RIVET SPACER

For uniform spacing of rivets, bolts, nails, etc. Unique fan design expands to 36". Equally spaces up to 20 holes between 2 given points. Made of 301 stainless steel.

P/N 12-11700.....$39.85

10 Hole spacer P/N 12-00184.....$24.75

RIVEDRILL™

Allows operators to set up to 14 rivets per minute - twice as many as can be set by standard hand tools. The RiveDrill is ergonomically friendly, requiring just 6.6 lbs. of pressure to operate, compared to 77.2 lbs. required for hand tool operation. Able to set any standard blind rivet up to 3/16" aluminum. (For cordless electric power drills, a minimum 12V battery is recommended.) Nosepieces for 1/8", 5/32", & 3/16" sizes are included. P/N 12-00253..... $69.50

ULTRALIGHT NUTPLATE DRILL MOTOR

Ergonomic, lightweight design. Only one hand required to locate, drill & countersink both holes. Easily convert rivet spacings with interchangeable foot attachments. Accomodates all nutplate spindle spacings from 0.219" to 1.125". Fully adjustable feed rate. P/N 12-01376 .....$3,624.00

SWIVEL RIVETING TOOL

Rotates 360° and rivets in any position. High leverage handles for added power. Hardened steel construction for long life. Extended nose for hard to reach places. Will pull 3/32", 1/8", 5/32", and 3/16" rivets. Model TP844 ..... P/N 12-00365 ..... $56.85

HOMEBUILDERS RIVET NUT TOOL

Enables the rivet nuts to be seated tighter than with conventional tools. The rivet nut possesses far greater load bearing capability than a regular sheet metal screw! Proudly made in U.S.A. For use with aluminum or steel rivet nuts.Kit includes Rivet Nut Tool, Stabilizing Rod, and Qty 1 each of 6-32, 8-32 and 10-32 rivet nuts. P/N 12-00968..... $19.65

THREAD SELF-COILING AIR/VACUUM HOSE

This 25 ft. air vacuum hose snaps back to a compact 20" coil for easy storage. Includes non-corrosive brass male fittings. Excellent for air tools using a compressor. 100 PSI working pressure. Oil resistant polyurethane construction High visibility color. 1/4" NPT air inlet P/N 12-00218..... $10.75

ATS AIRCRAFT RIVET GUN #2602

So controllable you can easily buck rivets as small as 3/32" to as large as 3/16".

P/N 12-18340 ..... $103.96

RIVET SET MAX FOR 2602 RIVET GUN

3/32", 1/8", 5/32" and 3/16" rivets.

3-1/2" (5 pcs. straight, includes flat) P/N 12-18341 .....$23.96
3-1/2" (4 pcs. offset) P/N 12-18342 .....$23.96
5-1/2" (4 pcs. straight) P/N 12-18344 .....$23.96

PROFESSIONAL HAND PLIER RIVET TOOL

Professional Hand Plier Rivet Tool is 50% easier to use then other hand tools. A patented compound link designed does the work for you. A shorter grip opening ergonomically designed for one hand operation. Grips cover the length of the lever and body, and soft handles are contoured to fit the hand.

The wrench and nosepieces (3/32", 1/8", 5/32", & 3/16") are stored in the handle of the tool. Excellent for use on Cherry and other standard pop rivets.

Features: • Robust aluminum casting and vanadium steel handle design • Setting capacity: aluminum rivets up to 3/16" (4.8 / 5.0mm) body diameter • Contoured handle grips for comfort • Rivet retaining handle design for one-handed riveting • Supplied with nosepieces for 3/32", 1/8", 5/32" & 3/16" (2.4mm, 3.2mm, 4.0mm & 4.8mm) rivets • Supplied nosepiece wrench • Length: 9.65" (245mm) • Weight: 1.3 lbs. (0.6 kg)

P/N 12-00178 ..... $34.99

HEAVY DUTY RIVETER

Includes four nosepieces to set rivet diameters from 3/32" up to 3/16". Convenient lock chain keeps handles closed when tool is not in use. Made in U.S. P/N 12-18352 ..... $38.95

3M™ RIVETERS TAPE

3M™ Riveters Tape 685 Transparent Film with Green Adhesive, 1.7 mils (.043 mm) Polyester film with a rubber-strip coated along edges of tape only and tack-free center Window P/N 12-18355.....$10.85

COMBINATION RIVET-RIVNUT TOOL

Ideally suited to the needs of the aircraft homebuilder. Develops 3,500 lbs. of pulling force which permits the installation of all Cherry Commercial Blind Rivets or any other Pop type rivets through 1/4" diameter as well as all CherryMax rivets through 3/16" diameter. Will not pull Cherry Lock rivets. Quickly converts to a threaded blind nut setter. The kit includes the D100 hydraulic tool with adapters for blind rivet and blind nut installation, rivet nosepieces for 1/8", 5/32" and 3/16" diameter blind rivets, blind nut pull-up studs with nosepieces for 6-32, 8-32, 10-32 and 1/4-28 Rivnuts, operating instructions and a rugged Plastic storage case. Size: 12-1/2" x 8-1/4 x 3'. Weight: 3 lbs. P/N D100-RN Kit $358.00

PNEUMATIC-HYDRAULIC BLIND RIVETER

No larger than a compact drill motor, will install virtually any straight-pull blind rivet with installation loads of 3500 lbs. or less. All blind rivets from 3/32" dia. up to and including 1/4" dia. Can install CherryMax rivets. It utilizes a patented two-valve hydraulic pump actuated by 90 to 130 PSIG air pressure. Collect/jaw assembly remains stationary while the outer sleeve-nosepiece assembly is hydraulically moved, creating sufficient load to install the rivet. Furnished with three nosepieces for 1/4", 1/8", 3/16" & 3/32" rivets. Wt. 29 oz. P/N 09-01070 .....$558.95

RED BOX 737 RIVET GUN KIT

Includes: 1pc Rivet Gun (choose size 2X, 3X or 4X), 1pc Type A -Bucking Bar, 1pc Type B -Bucking Bar, 1pc Brass Regulator, 1pc Air Tool Fitting, 4pcs 3.5" Straight Rivet Set (3/32", 1/8" 5/32", 3/16"), 1pc Standard Flush Set (Surface: 1", Length: 2.5"), 1pc Beehive Spring, 1pc Retainer Spring, 1pc Marvel Air Tool Oil (Made in USA)

Gun	Length	BPM	Cap.	Bore	Shank	Stroke	Weight	Part No.	Price
2X	6-11/16"	2580	1/8"	1/2"	.401"	2-1/4"	3. lbs	12-02682	$197.00
3X	7-5/16"	2160	3/16"	1/2"	.401"	2-7/8"	3.2 lbs.	12-02686	$197.00
4X	8-1/2"	1740	1/4"	1/2"	.401"	3-1/16"	3.4 lbs.	12-02687	$197.00

RED BOX 777 RIVET GUN KIT

Includes: • 1pc Rivet Gun (Choose Size 2X, 3X or 4X) • 1pc Type A -Bucking Bar • 1pc Type B -Bucking Bar • 1pc Type C -Bucking Bar • 1pc Type D -Bucking Bar • 1pc Brass Regulator • 1pc Air Tool Fitting • 4pcs 3.5" Straight Rivet Set(3/32",1/8",5/32",3/16") • 4pcs 3.5" Offset Rivet Set(3/32",1/8",5/32",3/16") • 1pc Standard Flush Set (Surface: 1", Length: 2 1/2") • 1pc Flush Set w/ Rubber (Surface:1 1/4",Length:2 3/8") • 1pc Beehive Spring • 1pc Retainer Spring • 1pc Marvel Air Tool Oil (Made in USA).

2X Rivet Gun Kit..... P/N 12-03726 .....$259.95
3X Rivet Gun Kit..... P/N 12-03727 .....$259.95
4X Rivet Gun Kit..... P/N 12-03728 .....$259.95

TO

BLUE PNEUMATIC RIVETING TOOL BP-3V

2100lbs. of force the tool has the best weight to power ratio in the industry, boasting 2100lbs of pulling force. It can set 1/8,5/32 and 3/16 rivets in all Alloys. Super light weight and small, allowing the rivet gun to fit in the tightest of spaces. Convenient, thumb-operated on/off vaccum control switch to control compressor air consumption. Comes complete with nose tips for 1/8, 5/32 and 3/16,. Also included are wrenches for service and oil applicator. Recommended operating air pressure is 80-95psi. Weight 3.2 lbs. P/N 12-03384 ..... $373.95

BLUE PNEUMATIC RIVETING TOOL BP-4V

3500lbs of pulling force. Can set 1/8,5/32, 3/16 and 1/4 rivets in all Alloys. Super light weight, allowing the rivet gun to be operated continually with great comfort. Convenient, thumb-operated on/off vaccum control switch to control compressor air consumption. Complete with nose tips for 1/8, 5/32, 3/16 and 1/4. Also included are wrenches for service and oil applicator. Recommended operating air pressure is 80-95psi. Weight 3.6 lbs. P/N 12-03385 ..... $598.75

BLUE PNEUMATIC COMPACT HEAVY DUTY RIVETER BP-54

The power of the large "heavy duty" riveters in the body of a small one. Sets 3/32, 1/8, 5/32 and 3/16 rivets in all materials. Ideal for multi-grip rivets and pulls 3/16 Monobolt/Magna-lok structural rivets. Nose pieces and service wrenches are included. Recommended operating air pressure is 85-100 psi. Weight 4 lbs.

Without Vacuum ..... P/N 12-03386 ..... $311.00
With Vacuum ..... P/N 12-03429 ..... $366.00

BLUE PNEUMATIC HEAVY DUTY AIR / HYDRAULIC RIVETER BP-50

3800lbs. of force. Sets rivets from 1/8 through 1/4 in all materials. Its 7/8 stroke allows this rivet tool to pull most structural rivets in one stroke. Great for high production applications. Comes with nose pieces including 1/8, 5/32, 3/16 and 1/4. Also included are wrenches for service and oil applicator. Recommended operating air pressure is 85-100 psi. Weight 5 lbs.

P/N 12-03387 ..... $572.58

BLUE PNEUMATIC POWER MICRO BLIND RIVET GUN BP-48V

Installs 3/32, 1/8 and 5/32 blind rivets in all materials. This rivet tool weighs in at 2.4 lbs and has 1760 lbs. of pulling force. The rivet gun comes with a vaccum powered mandrel collection system. Also included are wrenches for service and oil applicator. Recommended operation pressure 85-100 psi. Weight 2.4 lbs.

P/N 12-03388 ..... $339.00

BLUE PNEUMATIC AIR HYDRAULIC RIVETER WITH VACUUM BP-50V

3800lbs. of force. Sets rivets from 1/8 through 1/4 in all materials. Its 7/8 stroke allows this rivet tool to pull most structural rivets in one stroke. Great for high production applications. Rivet tool comes with nose pieces including 1/8, 5/32, 3/16 and 1/4. Also included are wrenches for service and oil applicator. Recommended operating air pressure is 85-100 psi. Weight 5 lbs.

P/N 12-03430 ..... $625.00

BLUE PNEUMATIC BIG SPIN RIVET NUT TOOL BP-200BC

Now with a swiveling air inlet and ergonomic composite handle. Operates at 200 rpm for installations of the large rivet nuts. Places 1/2-13 and M12. Recommended operating air pressure is 85-110 psi. Weight 2.8 lbs. Part includes nose assembly, make selection at time of order. Nose assembly sizes: 632, 832, 1024, 1/4-20, 5/16-18, 3/8-16. P/N 12-03431 ..... 2.95

BLUE PNEUMATIC HEAVY DUTY LEVER RIVET NUT TOOLS

HEAVY DUTY LEVER RIVET NUT TOOL BP-734: • Heavy Duty Lever Rivet Nut Tool • Comfortable easy grip handle • Long handles for easy rivet nut and nutsert installations. • Includes M5, M6, M8 and M10 Nose Assemblies.

P/N 12-03501 ..... $83.75

HEAVY DUTY LEVER RIVET NUT TOOL BP-734S: • Heavy Duty Lever Rivet Nut Tool • Comfortable easy grip handle • Long handles for easy rivet nut and nutsert installations • Includes 10-24, 1/4-20, 5/16-18 and 3/8-16 Nose Assemblies. P/N 12-03502 ..... $83.75

HEAVY DUTY LEVER RIVETER BP-764: • Up to 1/4 steel • Heavy Duty Lever Rivet Tool • Comfortable easy grip handle • Rivet tool comes with nose pieces including 1/8, 5/32, 3/16 and 1/4.

P/N 12-03503 ..... $78.75

BLUE PNEUMATIC COMPACT HEAVY DUTY RIVETER BP-54

Sets 3/32, 1/8, 5/32 and 3/16 rivets in all materials. Ideal for multi-grip rivets and pulls 3/16 Monobolt/Magna-lok structural rivets. Nose pieces and service wrenches are included. Recommended operating air pressure is 85-100 psi. Weight 4 lbs. P/N 12-03432 ..... $431.00

BLUE PNEUMATIC ACCU-SPIN RIVET NUT TOOL BP-600QC

Swiveling air inlet and ergonomic composite handle. Operates at 800 rpm for quick installations of smaller rivet nuts. Places 8-32, 10-24, 1/4-20 and M4, M5, and M6 rivet nuts. Recommended operating air pressure is 85-110 psi. Weight 2.8 lbs. Part includes nose assembly, make selection at time of order. Nose assembly sizes: 632, 832, 1024, 1/4-20, 5/16-18, 3/8-16. P/N 12-03433 ..... $431.00

BLUE PNEUMATIC QUICK SPIN RIVET NUT TOOL BP-2000QC

Swiveling air inlet and ergonomic composite handle. Operates at 1600 rpm for quick installations of smaller rivet nuts. Places 6-32, 8-32, 10-24 and M3, M4, as well as Jacknuts. Recommended operating air pressure is 85-110 psi. Weight 2.8 lbs. Part includes nose assembly, make selection at time of order. Nose assembly sizes: 632, 832, 1024, 1/4-20, 5/16-18, 3/8-16 P/N 12-03434 ..... $431.00

BLUE PNEUMATIC PIN PULL SPIN ULTRA RIVET NUT TOOL BP-60

SPIN-PULL-SPIN setting sequence. In one touch the fastener quickly spins on, pulls the fastener, and with the release button, spins out of the fastener. Setting cycle is about 2 seconds. Fully adjustable stroke for accurate insert placements. Mandrels are included with tool. Comes complete with sizes 8-32 through 1/2-13 or M4 through M12. "More Power" means this tool uses its huge 6800 lbs. of pulling force to set up to 1/2 (M12) steel rivet nuts with ease. Recommended operating air pressure is 80-100psi. Weight 6 lbs.

Standard ..... P/N 12-03436 ..... $1,249.00
Metric ..... P/N 12-03505 ..... $1,249.00

BLUE PNEUMATIC HAND TOOL BP-738

Rivet Nut Hand Tool BP-738.

P/N 12-03437 ..... $29.50

BLUE PNEUMATIC RIVET NUT TOOL WITH MANDRELS BP-738M

Hand tool with mandrels. Includes Mandrel sizes 6-32,8-32,10-24 and 1/4-20.

P/N 12-03440 ..... $38.85

BLUE PNEUMATIC R AND D HAND TOOL KIT BP-738K

BP-738 Hand Tool. Mandrels including 6-32, 8-32, 10-24, and 1/4-20 or M3, M4, M5, and M6. Also includes 40 total pcs of assorted rivet nuts that match included mandrels. Comes in molded plastic case (Private labeling available).

P/N 12-03441 ..... $46.90

BLUE PNEUMATIC NOSE ASSEMBLY FOR SPIN-SPIN RIVET NUT TOOLS

Quick change nose assembly. Available in 6-32 through 3/8-16. Spin-Spin tools use replaceable socket head cap screw. 3/8 air hose recommended for optimal performance.

Description	Part No.	Price
Blue Pneumatic BPQ-632 Nose Assembly	12-03442	$62.85
Blue Pneumatic BPQ-832 Nose Assembly	12-03443	$62.85
Blue Pneumatic BPQ-1024 Nose Assembly	12-03444	$62.85
Blue Pneumatic BPQ-1/4-20 Nose Assembly	12-03445	$62.85
Blue Pneumatic BPQ-5/16-18 Nose Assembly	12-03446	$62.85
Blue Pneumatic BPQ-3/8-16 Nose Assembly	12-03447	$62.85

TO

RIVNUT TOOLS – TAPE MEASURES

L-6000 RIVNUT SPEED DRIVER

This tool is designed for light production and features high speed push-pull, smooth, spiral action. Sized #4 through #10 adequate for brass, aluminum, and steel. Sized #4 through #8 adequate for stainless steel. Provides easy on-and-off threading of rivet nut with push-pull knob. Adjustable anvil for different length rivet nuts. Made in U.S.A. The C-6000 Speed Header is available for Rivnuts with the following thread sizes:

6-32..... P/N 12-12600 ..... $136.95 8-32 ..... P/N 12-12700..... $136.95
10-32 ..... P/N 12-12800 ..... $136.95 1/4-28 ..... P/N 12-12900..... $153.95

CONVERSION KIT - For changing speed header to a different Rivnut thread size. Order by P/N .

6-32 Kit ..... P/N 12-13000 .....$36.75 8-32 Kit .....P/N 12-13100.....$34.85
10-32 Kit..... P/N 12-13200 .....$34.65 1/4-28 Kit ....P/N 12-13300.....$53.50

L-7000 RIVNUT SPEED DRIVER

Designed for light production. Same as the L-6000 except made with a longer stroke for slotted rivet nuts. Made in U.S.A. Order by part number. Available in the following thread sizes: 6-32 (P/N 12-13605), 8-32 (P/N 12-13610), 10-32 (P/N 12-13615), and 1/4-28 (P/N 12-13620)

$172.80/ea.

C-845 ECONOMY RIVNUT TOOL

Model L-845 wrench type rivnut tool is for field repair & experimental use. Adequate for aluminum, brass, steel, and stainless. Made in U.S.A. Order by part number.
Available in following thread sizes:

6-32.....P/N 12-13400 .....$47.75 8-32 .....P/N 12-13500..... $47.75
10-24 .....P/N 12-13600 .....$47.50 10-32.....P/N 12-13700..... $47.75
1/4-20.....P/N 12-13800 .....$47.75 1/4-28 .....P/N 12-13900..... $47.50

L722 WRENCH TYPE RIVNUT TOOL

L722 Wrench Type Riv-Nut installation tool for the larger size fasteners 5/16" up to 1/2", tool comes with long arm allen wrench with plastic handle for easy installation.

L722 wrench type header	Part No.	Price	L722 wrench type header	Part No.	Price
5/16-18	12-00920	$52.75	5/16-24	12-00921	$49.75
3/8-16	12-00922	$49.75	3/8-24	12-00926	$49.75
1/2-13	12-00927	$82.75	1/2-20	12-00928	$82.50
M10	12-00930	$79.50			

WRENCH TYPE RIVNUT TOOL

Kit includes: TP726A, TP726B, TP726C, TP726N, and handy case. •Perfect for field repair and experimental use • Easy to use - inserts from one side of the work in seconds • Excellent for close quarters, overall height less mandrel 1-1/2" • Uses 3/4" open end or socket wrench • TP726N Notcher manually operated • Made in the U.S.A.

Model	Part No.	Price
TP726A / 6-32	12-00348	$47.65
TP726B / 8-32	12-00349	$42.50
TP726C / 10-32	12-00350	$42.50
TP726N/Notcher	12-00351	$21.75
TP726K / Kit	12-00352	$133.50

L-1000 ECONOMY HAND RIVNUT TOOL

The L-1000 economy hand rivnut tool is recommended for slotted rivet nut fasteners. Adequate for aluminum, brass, steel and stainless steel fasteners. Made in U.S.A. Order by part number. L-1000M is same tool, except in metric sizes.

Model	Thread Size	Part No.	Price Ea.
L-1000	(60-32)	12-13645	$45.75
L-1000	(8-32)	12-13650	$45.75
L-1000	(10-32)	12-13655	$45.75
L-1000	(1/4-28)	12-13660	$47.75
L-1000M	(M6)	12-13675	$49.75

BLIND RIVET REMOVAL TOOL

This rivet removal tool allows you to remove those stubborn Pop, Avdel, Cherry-Q, and other blind rivets. The serrated nosepiece fits over any button head, round head, or universal head rivet and locks in place to keep it from spinning as it's being drilled out. It will also remove solid rivets. Includes adapters to remove 3/32", 1/8", 5/32", and 3/16" rivets.

P/N 12-03368 ..... $60.76

HEAVY DUTY RIVET CUTTER

This high quality, durable rivet cutter features all steel construction and cuts 1/16" to 1/4" diameter rivets. It is adjustable for 1/4" to 3/4" long rivets.

P/N 12-16840 ..... $42.50

RIVET CUTTER

This handy rivet cutter, w/ 2 hardened blades, cuts rivets of any standard dia. from 3/32" to 3/16" without burring. The length of the cut rivet can be varied from 3/16" to 5/8" by means of 8 adjustable leaves attached to the cutting head. Plastic coated grips. Wt. 2 lbs. P/N 12-00200 ..... $29.55

LUFKIN METRIC/INCH TAPE MEASURE

LUFKIN NO. W921OME Has 1/2" blade, 3 meters long (equal to about 10 ft.). Markings are on one side only, with millimeters on upper edge and inches to 16ths on lower edge. White face.....P/N 12-19700 ..... $11.95

STANLEY DECIMAL INCH TAPE MEASURE

This 12-ft. steel tape measure with 1/2" blade is graduated in tenths & hundredths of inches and also in fractions of inches (32nds). Very handy for all aircraft construction. A must for building composite aircraft.

P/N 33-272 ..... $19.80

SMART TOOL DIGITAL INCLINOMETER

Smart Tool is a unique digital inclinometer with up to 0.1° of repeatable accuracy. Measures and displays any angle through 360°, and readings can be relative to any angle. Smart level even calculates complicated slope measurements in either percent or inches per foot. It is sunlight viewable, features 3 sensitivity settings, and has 120-hour battery life with auto shut–off. Powered by any 9V battery.

Smart Tool in 24" rail ..... P/N 12-21365 .....$163.95
Smart Tool in 48" rail ..... P/N 12-21370 .....$175.95

INSTANT ANGLE FINDERS

MODEL 200M (2-3/4" Dia. Dial) - Very versatile tool —ideal plumb bob. Magnetic base and center hang hole. Body of high impact ABS plastic. Dial protected by acrylic cover. Angle and rise chart on back.

P/N 12-14800 ..... $23.85

DIGITAL PROTRACTOR/LEVEL ND-81

Full 360-degree measuring range with maximum resolution and accuracy of 0.1 degree. Simple 30 second calibration procedure using only the top flat edge of a table or desk. Alternate zero button to set zero starting point at any angle (commonly used for aileron, flap and elevator rigging). Display hold button to freeze reading when measuring in tight spaces. Readout stays upright even when protractor is upside down. Dimensions: 7.5" x 5" x 3". Total weight: 16 oz. P/N 12-02651 ..... $98.95

PRO 360 DIGITAL PROTRACTOR

The Pro 360 Digital Protractor is a revolutionary measuring tool that provides an immediate, digital reading of all angles in a 360º circle.The machined aluminum frame is a rigid, light weight, ultra-precise platform that allows the state-of-the-art sensor and its microprocessor circuit to provide unsurpassed accuracy throughout the Protractor's 360º range. Typical used by aircraft builders, maintenance personnel and airport operators. P/N 12-20125 .....$256.95

PRO 3600 DIGITAL PROTRACTOR

The PRO-3600 is accurate to 0.01º and has an RS-232 compatible serial port for a computer interface and SPC records keeping.

P/N 12-00759 .....$396.00

RIV-NUT PULLERS

The Riv-Nut Puller was designed for installation of steel and aluminum rivet-nuts. High speed, push-pull action. Available in sizes 6/32, 8/32, and 10/32.

Rivnut Puller 6/32 .....P/N 12-02886 ..... $93.75
Rivnut Puller 8/32 .....P/N 12-02887 ..... $93.75
Rivnut Puller 10/32 .....P/N 12-02888 ..... $93.75
Rivnut Puller Conversion Kit 8/32.....P/N 12-02880 ..... $36.50
Rivnut Puller Conversion Kit 10/32 .....P/N 12-02881 ..... $36.50
Rivnut Puller 6/32 w/ 2 Conversion KitS.....P/N 12-02885 .....$148.50
Rivnut Stem Replacement 6/32 .....P/N 12-02889 ..... $22.95
Rivnut Stem Replacement 8/32 .....P/N 12-02890 ..... $22.95
Rivnut Stem Replacement 10/32.....P/N 12-02891 ..... $22.95
Rivnut Puller Conversion Kit 8/32.....P/N 12-02880 ..... $36.50
Rivnut Puller Conversion Kit 10/32 .....P/N 12-02881 ..... $36.50
Rivnut Puller 6/32 w/ 2 Conversion Kit.....P/N 12-02885 .....$148.50

TO

PLASTIC PRY TOOLS – AIR CHISEL TOOLS

BOJO PLASTIC PRY TOOLS

Soft, yet strong, all Bojo tools are made tough enough to pry, but not hard enough to damage. These 4 tools are provided as a set.

PLASTIC GENERAL WEDGE TOOL - General narrow point for reaching in narrow spaces.

PLASTIC STICKER/GASKET TOOL - Wedge tip, for use where a wide area is desired with a "soft" touch.

PLASTIC PRY BAR TOOL - The forked tip. The original for removing door panels and plastic grommets.

PLASTIC WEDGE PULLER TOOL - The forked tip. The original for removing door panels and plastic grommets.

Set of 4 listed above..... P/N 12-00748..... $14.95

MASTER INSTALLER KIT - Soft, yet strong, all Bojo tools are made tough enough to scrape, but not hard enough to damage. Set of 7.
P/N 12-00976..... $19.95

AIRCRAFT ASSEMBLY SCRAPER KIT - Soft, yet strong, all Bojo tools are made tough enough to scrape, but not hard enough to damage. Set of 4. P/N 12-00977..... $15.50

DELUXE SCRAPER KIT - This is an expansion of our original 4 Piece Scraper Kit (which you currently buy in the medium strength material NGL). The new tips were design from request in the aviation fuel bladder cleaning industry for the US Air Force and US Navy overhaul programs. This new, stronger material is highly resistance to all forms of chemicals and sealants. PN 12-01858..... $31.75

Description	Part No.	Price
Pry Tool Large LFT-2-N	12-01859	$7.50
Sheet Panel ADJ Tool Kit	12-01860	$18.25
Wire Guide Tool ATH-30-GNL	12-01857	$3.75

MULTI WEDGE NON-MARRING TOOL SETS

Multi Wedge non-marring tool sets allow homebuilders and avionics installers to remove panels, dash trim bezels, and other interior moldings, including door panels, without causing damage. Excellent for use in aviation, auto restoration, body work, electronics installation, upholstery etc. The Black Set (3500) P/N 12-01672 is made of a more expensive high impact polycarbonate plastic for prying harder materials such as thin walled aluminum engine covers and sheet metal panels. Product Benefits: • Thin tip to fit into tiny gaps •Wide surface area to displace force, therefore reducing damage • Flexible • Slick surface for ease of prying • Built-in handle • Non-marring surface • Slim powerful angle • Curved tip for easy prying • Thing tip for tight gaps

Multi Wedge Set Black (Hard) 3500 .....P/N 12-01672 ..... $11.75

Two Multi Wedge Sets - Orange (Soft) / Black (Hard) 3400/3500
P/N 12-01673 ..... $16.75

SEALANT CUTTERS

Sealant cutter quickly and safely removes thick applications of seam sealant for aircraft maintenance and repair. Eliminates the need for harsh chemicals. Saves time and effort. 1/4" x 28 Threaded Shank.

.40" Diameter .....P/N 12-02879 ..... $6.75

.83" Diameter .....P/N 12-02878 ..... $6.50

MULTI-PURPOSE SCRAPER

This Muli-purpose scraper has a 2 1/4" wide blade ideal for more coverage. This scraper is ideal for lighter duty jobs. It has a blade cover for safety and a hole in the handle to hang for convenience. This scraper is disposable and does not have replacement blades available. P/N 12-02371..... $6.99

AIR CHISEL TOOLS

Aircraft structures are sensitive to tool damage during manufacture, servicing and repair but the numerous plastic and composite materials available in our products are able to deliver the levels of strength and durability required of tools systems whilst conforming to aircraft manufacturer specifications.

Strong ribbed backing air chisels that are easily reshaped. Designed to fit standard air chisel tools with a 0.401" diameter shank, this scraper system maintains the damage reduction and non-marring properties of our hand tools but is suited to heavy-duty and higher volume material removal while reducing operator fatigue.

GENERAL SCRAPPER CHISEL TOOLS

Standard width air chisel scraper.

General Scrapper Chisel Tool - Soft
P/N 12-02282..... $7.50

FLAT SCRAPPER CHISEL TOOLS

Steep angle for air chisel scraping delicate, narrow jobs that require less of a wedging angle.

Flat Scrapper Chisel Tool - Soft
P/N 12-02284..... $7.50

BOX CORNER SCRAPPER CHISEL TOOLS

Ideal shape for air chisel scraping tight into corners, removing material on both sides surface at once.

Box Corner Scrapper Chisel Tool - Soft
P/N 12-02286..... $7.45

Box Corner Scrapper Chisel Tool - Hard..... P/N 12-02287..... $7.45

LARGE HEAVY DUTY FLAT AIR CHISEL TOOL

Wide air chisel scraper for larger areas of removal.

Large Heavy Duty Flat Air Chisel Tool- Hard
P/N 12-02288..... $9.95

NARROW HEAVY DUTY FLAT AIR CHISEL TOOLS

Narrow air chisel scraper for tight, confined areas of removal.

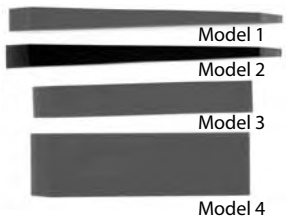
Narrow Heavy Duty Flat Air Chisel Tool- Hard
P/N 12-02289..... $9.95

SCRAPERITE BLADES

ScrapeRite razor blades come in a variety of colors and tensile strengths to meet your every need, they are the best in the world and offer many unique advantages over other scrapers and metal blades. You can use ScrapeRite blades anywhere you would use a steel blade with out the fear of damaging the underlying surface; they are perfect for glass, plastics, chrome, marble and painted surfaces.

Description	Part No.	Price
Polycarbonate Blades & Holder Wavy Surfaces - Blue	12-03313	$5.75
Acrylic Blades & Holder Flat Surfaces - Yellow	12-03312	$5.75
General Purpose Blades & Holder Delicate Surfaces - Orange	12-03314	$5.75
Replacement Blue Blades	12-03309	$0.95
Replacement Yellow Blades	12-03310	$0.95
Replacement Orange Blades	12-03311	$0.95
Big Gripper Long Handle	12-03308	$2.85

SEALANT REMOVAL TOOLS



These tools are full machined and/or laser cut, which helps them retain a sharp edge. The tools are used by many defense contractors and Naval air stations for sealant application, sealant removal, paint removal, acrylic canopy contact, and general use. They are made from cell cast acrylic or black nylon as noteed. These tools can be resharpened on an abrasive belt or disc. Note: 15% Discount on 12 or more (Per P/N)

Model	Material	Part No.	Price
Model 1	Acrylic	12-02360	$1.65
Model 2	Nylon	12-02361	$5.50
Model 3	Acrylic	12-02362	$2.45
Model 4	Acrylic	12-02363	$2.95

TO

RECOIL KITS

The Recoil System is the simple way to repair stripped or damaged threads. It provides stronger and more efficient threads which have great holding power. The system is quick and easy to use and is ideal for alloys and other light materials. The recoil insert, which is larger in diameter than the tapped hole, is compressed during installation then allowed to spring back, permanently anchoring into place. The Recoil System consists of Recoil stainless steel helically wound precision inserts, high quality HSS taps and installation tools

* UNF - Unified Fine Thread
**UNC = United Coarse Thread
*** Metric = Metric & Spark Plug (ISO)

Kit PN	Size	Inserts per kit	Price
33004**	UNC Range Kit	50	$288.95
34004*	UNF Range Kit	50	$334.00
33058**	UNC Range Kit	15	$69.75
34608*	UNF Range Kit	15	$69.75
34048*	UNF Range Kit	15	$69.75
34058*	UNF Range Kit	15	$69.75
34068*	UNF Range Kit	15	$72.99
34078*	UNF Range Kit	10	$81.75
34088*	UNF Range Kit	10	$97.75
35068***	M6X1	15	$69.75
35088***	M8X1.25	15	$71.75

BLIND SKIN SCRIBE

For use on flush skin butt joints. This tool quickly and easily finds the cut line on the overlap of new metal. The lower leg slides under the new metal and hooks on the adjacent skin and the upper leg scribes the new skin as it pulled along. This tool is adjustable to suite the desired gap at the skin joint. This tool is especially handy when the old skin that is removed is damaged beyond usefulness as a pattern Note: For use on aluminum only.P/N 12-00746 .....$33.75

SCREWSTICK POCKET SCREWDRIVER

The Screwstick is a pocket screwdriver which accepts any common 1/4" tip. An extra tip is stored in the stainless steel shaft, and a heavy duty magnet holds tips firmly in place. A steel torque driver for stubAborn applications is stored in the shaft. A rubber finger grip for holding plus a heavy duty pocket clip are included. Ideal for aviation, automotive, & many other applications. Great for mechanics. P/N 12-20105..... $4.50

BALLPOINT HEX SOCKET DRIVER

3/32" Ballpoint Hex Socket Driver for use on hex head screws and nuts.
*This tool is commonly used with most avionics units like Honeywell Bendix/King and Garmin.
P/N 12-02063..... $4.90

MASTER CHUCK

These versatile Master Key Chucks are available in two sizes (small & large) which open sizes 1/4" to 3/4". These tools allow you to open over 1200 different key chucks. Save wear on chucks by always having the proper key size available. The squared center of the keys opens acetylene tanks. Made of treated steel with black oxide finish.
Small .....P/N 12-30165.....$16.50
Large.....P/N 12-30170.....$15.85

ALL-SHARP DIAMOND SHARPENER

All Sharp is an innovative diamond sharpener that provides 4 different grit sizes on the same tool. All Sharp sharpens and fine sharpens tools and bits and cleans burrs on hard to reach parts and equipment. It's tough stainless body will not rust and All Sharp fits in any tool tray or pouch. Model ST-7.....P/N 12-21430. ..... $18.60

6-IN-1 COMBINATION SCREWDRIVER

• Industrial rated bits for extra long life • Heat treated 1/4" & 5/16" nut drivers • Interchangeable bits fit both Philips & Slotted screws • Bits: 3/16" Slotted; 9/32" Slotted; #1 Philips, #2 Philips.
P/N 12-14000 ..... $13.95

STRIP AND CRIMP TOOL

5 Way all purpose wire 9" long made of hardened steel matte black permanent finish with bright clear markings. Makes it an attractive & easy to use product. Features long comfortable plastic grip handles. A one piece tool that shapes & cuts wire 5 different ways. Specifications: Standard wire cutter crimps insulated terminals 22-14 12-10, Shears 5 bolt sizes 4-40 6-32 8-32 10-24 10-32, Crimps non-insulated terminals 10-12 14-16 18-22, Strips wire 10-22 awg P/N 11-08077..... $13.95

COAX CABLE CRIMPING TOOL

This 12 point, full ratchet crimping tool terminates precision BNC connectors in size RG 55,58,59,62,141,142,223,303 and 400. This crimper is built to MS22520 specifications and die set is included with the crimper. Specifications: Cable Groups: RG 55/58/59/62/141/142/223/303/400
P/N 12-02378.....$128.75

3M™ CRIMPING TOOL TH-440

High carbon, heat-treated steel crimping tool that has a unique design that provides a high strength/weight ratio that crimps a broad range of 22-10 AWG terminals and connectors. P/N 12-01146 ..... $57.50

AT508K CANNON CONNECTOR PLIERS

The AT508K features serrated jaws for improved gripping and a slip joint for improved leverage. Ideal for all common cannon connector applications.
P/N AT508K..... $22.85

WIRE MARKING TOOL

Ever been on your back looking up at a bunch of white wires or in a really tight space where only your arms and shoulders would fit and wonder, "how am I going to tell the difference between all of these wires?" this wire marking tool will allow you to do just that.
The wire marking tool works on wire from 24 ga to 8 ga. This tool is perfect for every mechanic and do it yourselfer. Mark just one wire or all of your wires before you start or while installing in just seconds. 4 and 12 pack of markers sold separately.
Wire Marking Tool.....P/N 12-02497 ..... $37.95
4 pack colors: Black, Blue, Red, Green.....P/N 12-02501 .....$9.50
12 pack colors: Black, Blue, Green, Red, Orange, Yellow, Purple, Brown, Turquoise, Lime, Berry, & Aqua. .....P/N 12-02503 ..... $19.85

POWER PRECISION SCREWDRIVER

General's Cordless Power Precision Screwdriver is ideal for ultra-delicate applications such as computer and electronics repair, hobbies and crafts. The 100+ RPM motor features forward and reverse controls, and the quick-change chuck allows for effortless swapping between 1/8" Slotted, Phillips and Torx bits. Features: • Cordless Precision Screwdriver (2 "AAA" alkaline batteries included) • 10+ hours of power • 100+ RPM motor with forward and reverse controls • Super-torque drive • Quick-change chuck • Ergonomic design allows for various comfortable grips • Precision bit assortment (1/8" drive) • Phillips: #00, #0 • Slotted: 1/16", 1/8" • Torx: T5, T6 P/N 12-02308..... $23.50

AT 540M SCREW EXTRACTOR

This heavy duty screw extractor is designed with a .401 shank to fit most standard rivet guns and is held in place by a retainer spring. The square tip will accommodate 3/8" socket tool bit holders with inserts for removing hex, square, Phillips, or standard screws. Manufactured from high grade shock resistant tool steel.
P/N 12-01632 ..... $13.70

SCREW REMOVAL TOOL

•Useful in removing screws that are corroded or have stripped heads •.401 Parker taper shank for use in rivet gun •3/8" square drive with wrench. •Use standard Phillips or Slotted insert bits •Rivet gun required. NOTE: Does not include Tips. P/N 12-00827 .....$36.75

TO

MICRO LATHE

This is the machine you don't have to "baby". The Micro Lathe is a rugged, precision instrument. Its machined, ground and stabilized steel bed has a lifetime ball bearing spindle, coupled with a 6-speed positive v-belt drive. Spindle speeds in geometric progression from 525 to 5200rpm provide the power to "HOG" 1/8-inch cuts in mild steel or the speed and accuracy to dust a few tenths. Other big lathe features include large .001 graduations on the cross slide dial, an all-angle tool post and a carriage depth stop. Adjustable gibs provide full compensation for carriage and cross slide wear. 2-yr. factory warranty. 15" bed. Comes factory assembled. The Unit pictured is a basic unit (P/N 12-00171) with an optional 3-Jaw Chuck, Boring bar(1097E), Tailstock (1150), Drill Chuck (1091), 1/4 HP 1725 RPM Motor (1021w), Motor Mount Bracket (1022), Mounting Board (1023), and Pulleys (1162 with 3M 500 belt). All accessories are sold separately and are not included in the base price. Note: Photo shows Lathe with all accessories which are not included (Available separately). P/N 12-00171 is basic lathe unit only. P/N 12-00171 ..... $189.75

General Specifications:
- Overall working accuracy: 0.0005"
- Max. bearing run out: 0.0004"
- Headstock normality to bed: .0004 in max error
- Max. taper bed dovetail over pins: 0.0001"
- All machine dovetails: 45°
- Bed width: 2 5/16 "
- Cross slide dial graduation: 0.001
- Cross slide screw: 1/4"-20 adjustment for back-lash take-up provided (jam nut arrangement)
- Carriage travel: 0.600" 1 rev. of hand wheel
- Max. spindle speed recommend: 7000 rpm
- Motor requirement: 1/8 – 1/4 HP
- Pulley type: Std. 5/8" bore, multi-step V-belt
- Length of headstock on ways: 2.875"
- Length of carriage on ways: 3.000"
- Width of cross slide on carriage: 2.000"
- Tool post: may be adjusted for angle cutting (chamfer, boring, etc.)

Capacity:
- Swing over bed: 4.5" (max. turning dia.)
- Swing over cross slide: 2 3/8"
- Overall length of bed: 15.5"
- Overall length of lathe: 16.5
- Tool bit size: 1/4"
- Drill chuck capacity: 0 to 1/2"
- Distance between centers: 9.75"
- Carriage travel: 9"
- Cross slide travel: 1.75"

Spindle Specifications:
- Sealed precision ball: 1.5748 O.D. 0.6692 I.D.
- Spindle nose: 3/4" – 16 (3/4" SAE)
- Spindle hole: 0.343
- Spindle ID taper: 15° (30° included)
- Max. collet diameter: 9/32"
- Pulley size: 5/8" bore

Accessories	Part No.	Price
3-jaw chuck	12-01602	$59.75
Boring bar	12-01603	$5.35
Tailstock	12-01604	$36.55
Drill chuck	12-01605	$9.95
1/4 1725 RPM Motor	12-01606	$174.75
Motor mount bracket	12-01607	$5.35
Mounting board	12-01608	$7.50
Pulleys 20" L	12-01609	$24.90
Pulleys 12-1/2" L	12-01710	$23.95

MICRO MILL

The Micro Mill has effortless, chatterless table and mill head movement. This is due to the unique design of our oversized gibs, ground steel ways, massive carriage, steel bed and vertical mill head support which makes the Micro Mill ready for CNC upgrade if you desire. Our small mill is really a scaled down big mill with manual operation. Other big mill features include large 0.001 graduations on friction adjustable micrometer dials for X, Y, and Z controls. Adjustable gibs provide full compensation for X, Y, and Z mill-ways wear. It all adds up to the best value in small mills. 15.5" table, power switch & cord included. Comes factory assembled. 2-yr. warranty. P/N 12-00170 ..... $769.00

General Specifications:

	Manual	CNC
• Height:	21-3/8"	26-3/8"
• Width:	17"	22"
• Depth:	16.75"	21"
• Weight:	65 lbs.	85 lbs.

- Max. bearing run out: 0.0004"
- Dovetails, X-axis: 45°; Y-axis: 90°

Capacity:
- Working Axis Travel: X=9.5", Y=5.5", Z=6.0"
- Maximum Z-Distance to Table: 9.0"
- Z-Axis Swivel: 90°
- Column Rotation: up to 180°
- Spindle Head Rotation: 90°
- 6 Spindle Speeds: 525 to 5200 RPM
- Z-axis: Steel box-ways
- Pulley type: Std. 5/8" bore, multi-step V-belt
- Construction: steel, hard anodized aluminum on all moving components adjustable brass gibs and precision ground steel-ways.

Spindle Specifications:
- Maximum Spindle Speed: 7000 RPM
- Sealed Precision Ball Bearing: O.D.=1.5748, I.D.=0.6692
- Spindle Nose: 3/4" -16 (3/4" SAE)
- Spindle Hole: 0.343"
- Spindle ID taper: 15° (30° included)
- Max. Collet Diameter: 9/32"
- Pulley size: 5/8" bore

AT429SXC MICRO MILLER

The AT429SXC Micro Miller features a .75 horsepower 20,000 RPM Sioux Tools motor. Cutter capacity is 3/4" and the unit will cut steel, aluminum and stainless steel. Spindle size is 1/4-28 and inlet pipe tap is 1/4" NPT. Air requirements: 90 PSI. Tease trigger allows slow start up & exhaust porting is through the bottom of the handle. P/N AT429SXC..... $465.95

Cutter Size	Cutter Dia.	Skirt Part No.	Skirt Price	Cutter Part No.	Cutter Price
-1	5/16	AT429A-1	$24.25	AT429B-1	$20.85
-2	3/8	AT429A-2	$25.50	AT429B-2	$19.70
-3	7/16	AT429A-3	$24.25	AT429B-3	$19.90
-4	1/2	AT429A-4	$24.25	AT429B-4	$21.55
-5	9/16	AT429A-5	$24.25	AT429B-5	$22.75
-6	5/8	AT429A-6	$24.50	AT429B-6	$22.75
-7	3/4	AT429A-7	$24.50	AT429B-7	$27.50

PLYWOOD PLANER-SCARFFER ATTACHMENT

The Plywood Planer-Scarffer attachment enables you to make consistent scarf cuts quickly and easily. Easy installation and removal allows your planer to be readily used for scarffing as well as a regular planer. The Planer-Scarffer attachment is easily installed on the Makitan 1900B, Makitan 1911B and the Porter Cable 9125 planers. The attachment is not limited to these particular models or makes. With the Planer-Scarffer attachment, you can purchase standard size sheets of plywood and then join them together. This saves the extra cost of larger sheets and the shipping charges that would be required. By scarffing 4x8 sheets together, save 60% or more in the price of the plywood and make the cost more bearable. The attachment is mounted on a power-planer and cuts an 8:1 bevel. 2 models are available. One fits a 4-3/8" planer for plywood up to 1/2". The other is designed for a 3-1/4" planer and can be used on plywood up to 3/8". Specify planer type when ordering.

3-1/4" for Porter/Cable 9125 ..... P/N 12-20110-1900 ..... $129.00
4-3/8" for Makita 1912B ..... P/N 12-02414 ..... $164.95
3-1/4" for Makita N1900B ..... P/N 12-20111-1911 ..... $129.00

PLYWOOD SCARFING MACHINE KIT

Simple and easy to construct using a sanding drum and other readily available items. Allows you to make neat and efficient scarf joints with all types of plywood, varying in thickness from a 1/4 inch down to .4 mm with a professional finish that all woodworkers like to achieve. Safe to use, easy to handle and portable. A fun gadget to use for the amateur or experienced woodworker alike. In The Box: Now includes: Dust removal attachment, 30 inch by 20 inch blueprint and instructions. ..... P/N 12-02819 ..... $15.00

CRAFTSMAN WOOD TOOL CHEST PLANS

Build this magnificent wood tool chest from our detailed professional plan. It's the kind of chest a craftsman dreams of. Features 10 drawers in the sturdy base, 12 more drawers plus a large top bin in the removable upper section. Overall size is 25"W x 10-5/16"L x 27"H. Ideal for the aircraft builder or aircraft mechanic. Plans only for Wood Tool Chest.

P/N 12-18350..... $24.95

CRAFTSMAN WOOD TOOL CABINET PLANS

Machinist's and woodworkers show your skill. Impress potential customers when they come into your shop, and see such a nice cabinet like this. This cabinet has removable trays for easy access to all hand tools. This cabinet when built by my plans, will have room for all your hand tools. As a bonus it has wheels on it for easy mobility. Size of this unit when completed 32"W x 19"D x 68"H

P/N 12-00978..... $16.95

TO

TOOL KITS — METAL FORMING TOOLS

RV BUILDER TOOL KIT

These RV builders tool kits are based on recommendations from the Van's Aircraft Builders Manual as well as on the tools that have been purchased from Aircraft Spruce by RV builders. It is an excellent tool kit for the construction of the RV4, 6, 7, 8, and 10 aircraft. They include an air drill, hand rivet squeezer, rivet sets and other tools of the highest quality. If you are building a RV-9 order 100 extra 3/32" clecos and 50 extra 1/8" clecos. If you are building a RV-10 kit, order 175 extra 3/32" clecos and 125 extra 1/8" clecos as well as the RV-10 bucking bar. See Chart Below for Components

Kit with 2x Rivet Gun ..... P/N 12-00890 ..... $2,583.00
Kit with 3x Rivet Gun ..... P/N 12-00899 ..... $3,076.75
RV-10 Bucking bar ..... P/N 12-00903 ..... $37.50

RV BUILDER KIT COMPONENTS

Part No.	Description	Price
12-02004	2X Rivet Gun	$148.95
A1006-234X	RETAINER SPRING, BEEHIVE TYPE	$6.50
12-00869	AVERY PNUEMATIC AIR TOOL REG.	$18.90
12-00816	AIR DRILL (PISTOL TYPE)4500RPM	$526.00
12-00872	AVERY AIR TOOL OIL	$7.95
12-00177	HAND RIVETING & DIMPLING TOOL	$248.95
12-00605	AVERY POLY. DIMPLING MALLET	$42.50
12-00320	3" YOKE for Hand Rivet Squeezer	$78.75
12-00882	AVERY 6PC SQUEEZER SET	$57.85
12-00868	AVERY DELUXE DIMPLE DIE KIT	$219.75
12-00613	AVERY POP RIVET DIMPLER 3/32"	$25.85
12-00611	AVERY VISE GRIP DIMPLER 3/32"	$52.75
TP-670	BUCKING BAR 1-3/4 LB.	$23.75
SM10-4704	STRAIGHT RIVET SET 1/8X 3-1/2	$7.75
12-00873	AVERY 1/8" DBL OFFSET RIVET ST	$29.50
12-00741	AVERY FLUSH SWIVEL RIVET SET	$49.50
12-07100-3	AVERY BACK RIVET SET 4-1/8"L	$34.50
12-00609	AVERY FLUTING PLIER	$52.75
12-00608	AVERY HAND SEAMER 3-1/2" JAW	$53.75
12-10105	CLECO PLIERS	$5.65
M-3/32	SHEET HOLDERS M-3/32 KWIK-LOK	$0.49
M-1/8	SHEET HOLDERS M-1/8 KWIK-LOK	$0.48
M-5/32	SHEET HOLDERS M-5/32 KWIK-LOK	$0.48
M-3/16	SHEET HOLDERS M-3/16 KWIK-LOK	$0.49
SC-1/2-1/2	1/2" X 1/2" SIDE GRIP CLAMP	$1.85
SC-1/2-1	SIDE GRIP CLAMPS P/N SC-1/2-1	$2.25
12-00632	AVERY EDGE ROLLING TOOL	$23.85
12-00618	AVERY BACK RIVETING PLATE	$68.75
12-00876	AVERY CUT/POLISH WHEEL KIT	$63.75
12-03900	UNIBIT STEP DRILL # 3	$43.75
12-18355	3M™ RIVET TAPE 3/4" GREEN	$10.85
12-04214	#40 SUPER COBALT DRILL (4PACK)	$1.30
12-04217	SUPER COBALT DRILL #30 (3PACK)	$1.65
12-14221	SUPER COBALT DRILL #21 (3PACK)	$1.95
12-04219	SUPER COBALT DRILL #27 (3PACK)	$1.95
12-00886	AVERY #19 COBALT DRILL BIT 2PK	$5.35
12-00885	AVERY #12 COBALT DRILL BIT 2PK	$7.50
12-00884	AVERY 1/4" COBALT DRILL BIT	$5.35
12-05200	DRILL BITS 12" LONG 3/32"	$5.50
12-05300	DRILL BITS 12" LONG 1/8"	$5.75
12-00867	AVERY 4PC DRILL STOP SET	$10.90
12-00883	AVERY 90° ANGLE DRILL KIT	$192.90
12-01412	AVERY MICRO-STOP CSNK CAGE	$36.50
12-00879	AVERY #40 X 3/8" CSNK CUTTER	$12.95
12-00880	AVERY #30 X 3/8 CSNK CUTTER	$12.95
12-00881	AVERY #20 X 1/2" CSNK CUTTER	$12.95
1216	STEEL RULES #1216	$8.95
12-00631	AVERY SHOP HD RIVET GAUGE SET	$22.75
12-00633	AVERY RIVET LENGTH GAUGE	$11.85
M-1R	WISS SNIPS # M-1R	$18.75
M-2R	WISS SNIPS # M-2R	$19.85
12-00622	AVERY SPEED DEBURR-CSINK TOOL	$36.90
12-00877	AVERY ROYAL MULTI-BURR TOOL	$13.50
12-00629	AVERY DOUBLE EDGE DEBURR TOOL	$23.65
12-00875	AVERY SCOTCHBRITE CUT/PLSH WHL	$76.95
01-00392	CURVED TOOTH FILE 14" LONG	$44.60
12-00870	AVERY 3/32" DRIVE PIN PUNCH	$10.50
12-00871	AVERY 1/8" DRIVE PIN PUNCH	$10.50
12-00889	AVERY 360DEG SWIVEL POP RVT TL	$47.50
13-11400	STANDARD AIRCRAFT HANDBOOK	$23.50

KIT BUILDER AIRCRAFT TOOL KIT

Initially designed for the RV3, RV4 and RV6 builders, this kit has proven to be very popular with virtually all aircraft home builders. It contains our most popular rivet hammer and is an excellent tool kit for RV builders. Weight: 40 lbs.

P/N 12-01145 ..... $695.00

Part No.	Pcs.	Description
02-R18C-12	3	Jobber's Length Drill
02-R18C-28	3	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
02-441	1	Countersink Cage
04-M-1/8	175	'M'Type Fastener
04-M-3/32	325	
04-1120	1	Fluting Plier
04-17	1	Rivet Cutter
02-22022	1	Multi-Burr w/5 Blades
04-62	1	Cleco Plier
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-10-500	1	Flush Set, 3-1/2" O.A.L.
07-20-4703	1	Offset Rivet Set, 3-1/2" O.A.L.
07-20-4704	1	
07-20-4705	1	
07-20-4706	1	

Part No.	Pcs.	Description
07-20-500	1	Offset Flush Set, 3-1/2" O.A.L.
07-91	1	Mushroom Rivet Set
08-112	1	Bucking Bar
08-638	1	
08-647	1	
08-670	1	
09-RH-2	1	Handi Retainer Spring
10-420-2A	1	Hand Rivet Squeezer, 2" Yoke
17-3XSP	1	USATCO Rivet Gun
26-200-4703	1	Cupped Squeezer Set
26-200-4704	1	
26-200-4705	1	
26-210	2	Flush Squeezer Set
4263PDSB	1	Spring Back Punch &Die
4264PDSB	1	
62-54404	1	Plastic Kit Box
JSM-705	1	3/8" Reversible Air Drill
TP44	1	Hand Seamer

WHEELING MACHINE (BENCH MODEL)

Clearly, this is the most popular of in-home English Wheels. Metal Ace offers extensive anvil configurations to meet your needs. Plus, with the new gusseted frame, it's the strongest benchtop wheel on the market. Trick out your custom-built bike or complete hobby projects without breaking the bank. These English wheeling machines provide outstanding performance on small jobs like motorcycle tanks, tank covers, seat cowls and aircraft fillets. Versatile use - mount on bench, clamp in vise or use with optional welded stand. Proudly made in the USA. Features: • Thickness capacity for steel is 18 gage;16 gauge with optional stiffener brace. • Features can be rolled into the center of a 44" panel. • Can be mounted to a bench, clamped in a vice or used with the optional welded floor stand. • Optional wheels and stand sold separately. • Anvil yoke is adjustable on both sides of the axle support with thumb screws so the anvil wheel can be trued with the upper wheel. Specifications: • 3.25" radius lower anvil • 8" upper wheel • 22" throat depth • Reinforced frame • 18 gauge mild steel capacity .080 AL capacity • Made in the USA.

Wheeling Machine MA 22B ..... P/N 12-00571 ..... $695.00

ACCESSORIES

Radius Wheel 5" 22B-5.00 ..... P/N 12-02026 ..... $98.00
Radius Wheel 5" 22B-5.00 Narrow ..... P/N 12-02027 ..... $98.00
Radius Narrow Offset Wheel 5" 22B-5.00NO ..... P/N 12-02028 ..... $91.75
Radius Wheel 5" Set of 3 22B-5.00SET ..... P/N 12-02029 ..... $278.50
Optional Stand for the 22B Wheeling Machine MA22B-STAND
P/N 12-00575 ..... $200.00

WHEELING MACHINE (U-WELD MODEL)

This English Wheel U-Weld Kit supplies the components to make your own English wheel, minus the steel tubing. A detailed assembly booklet is provided and the complete kit includes all the key components of the turn-key MetalAce 44F English Wheel. Other kits on the market come with smaller 2" wide x 2 1/2" diameter anvil wheels, smaller diameter upper wheels, and require more assembly. The screwlift quick release cam unit is fully assembled. Components proudly made in the USA.

Features: • Set of 6 lower anvil wheels, 3" wide x 3" diameter • Upper wheel, 3" wide x 8" diameter • Upper wheel yoke assembly with axle and spanner • Anvil yoke assembly • Screwlift quick release cam assembly • Set of 4 caster wheels • Assembly instruction manual • Made in the USA.

Specifications: • 8 x 3" upper wheel • 2.50 R, 3.75 R, 6.00 R, 12.00 R, 24.00 R and Flat lower anvil wheels.

MA44F-KIT - Components and bill of materials to build a 44F English Wheel. P/N 12-00570 ..... $1,595.00

MA44F - Fully assembled English Wheeling Machine
P/N 12-02294 ..... $2,595.00

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

TOOL KITS

MASTER KIT BUILDERS KIT

The Master Kit Builders Kit (TP176MKB) contains all the tools supplied in the "RV" tool kit plus many more. It is designed to supply all the major, most commonly used tools for the building sheet metal aircraft. These items can be used on RV's, Zenair, Questair and Mustang Aeronautic Kits as well as many, many others. A huge savings can be realized by purchasing this kit over the individual tool price. Wt. 50 lbs.

P/N 12-00832 ..... $893.00

Part No.	Pcs.	Description
02-R10C-1/4	1	Jobber's Length Drill
02-R18C-12	2	
02-R18C-30	4	
02-R18C-40	6	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
02-441	1	Countersink Cage
04-M-1/8	175	'M' Type Fastener
04-M-3/32	325	
04-1120	1	Fluting Plier
04-17	1	Rivet Cutter
02-22022	1	Multi-Burr w/5 Blades
04-63	1	Cleco Plier w/Comfort Grips
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-170	1	Flush Mushroom Set w/Guard
07-20-4703	1	Offset Rivet Set, 3-1/2" O.A.L.
07-20-4704	1	
07-20-4705	1	
07-20-4706	1	
07-20-500	1	Offset Flush Set, 3-1/2" O.A.L.
07-90	1	Mushroom Rivet Set

Part No.	Pcs.	Description
08-112	1	Bucking Bar
08-638	1	
08-647	1	
08-670	1	
09-RH-2	1	Handi Retainer Spring
10-37001	1	POP Swivel Hand Riveter
10-420-2A	1	Hand Rivet Squeezer, 2" Yoke
17-3XSP	1	USATCO Rivet Gun
18-DS-1/4	1	Drill Stop
18-DS-10	1	
18-DS-30	1	
18-DS-40	1	
26-200-4703	1	Cupped Squeezer Set
26-200-4704	1	
26-200-4705	1	
26-210	2	Flush Squeezer Set
4263PDSB	1	Spring Back Punch ! Die
4264PDSB	1	
53-120	1	POP Dimple Tool
53-70453	1	3 Piece Aviation Snip Set
61-13551	1	Hole Cutter
62-54405	1	Plastic Kit Box
JSM-705	1	3/8" Reversible Air Drill
TP44	1	Hand Seamer

MASTER AIRCRAFT TOOL KIT

This 121-piece complete Aircraft mechanics Kit is excellent for aircraft restoration, repair and manufacturing. It is ideal for the A & P mechanic, student and homebuilder. Kit comes with everything from sheet metal tools to riveting tools in a two-drawer tool chest. This kit includes the top quality riveting hammer manufactured in the U.S.A. Wt. 48 lbs.

P/N 12-01126 ..... $764.00

Part No.	Pcs.	Description
02-2962-21	1	Threaded Shank Adapter Drill
02-2962-30	1	
02-2962-40	1	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
02-441	1	Countersink Cage
02-1120	1	Fluting Plier
04-200	1	Chip Chaser
04-5S	1	Hand Metal Punch Kit
04-501	1	Heavy-Duty Rivet Cutter
04-6	1	Nibbling Hand Tool
04-62	1	Cleco Plier
04-EL-1/2-1	3	Side Grip Fastener
04-EL-1/2-1/2	2	
04-M-1/8	10	'M'Type Fastener
04-M-3/16	10	
04-M-3/32	10	
04-M-5/32	10	
04-WNX-1/8	5	Wing Nut Fastener
04-WNX-3/16	5	
04-WNX-3/32	5	
04-WNX-5/32	5	
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-10-500	1	Flush Rivet Set
07-170	1	Flush Mushroom Set w/ Guard
07-20-4703 3-1/2" O.A.L.	1	Offet Rivet Set,
07-20-4704	1	
07-20-4705	1	Offset Rivet Set, 3-1/2" O.A.L.

Part No.	Pcs.	Description
07-20-4706	1	
07-20-500	1	Offset Flush Set
08-112	1	Bucking Bar
08-638	1	
08-647	1	
08-670	1	
10-420-2A	1	Hand Rivet Squeezer, 2" Yoke
149-1	1	Wrench (for Cone Jaw Chuck)
15-1580	1	Junior Air Vac
17-3XSP	1	Rivet Gun
18-DS-10	1	Drill Stop
18-DS-21	1	
18-DS-30	1	
18-DS-40	1	
20-127-4S	1	90°Angle Drill Attachment
20-M3	1	Cone Jaw Chuck
26-200-4703	1	Cupped Squeezer Set
26-200-4704	1	
26-200-4705	1	
26-210	1	Flush Squeezer Set
46-231-1	1	Strap Duplicator
46-231-2	1	
46-231-3	1	
46-231-5	1	
53-70453	1	3 Piece Aviation Snip Set
62-54405	1	Plastic Kit Box
75HP575	1	Sheet Metal handbook
JSM-705	1	3/8" Reversible Air Drill
TP44	1	Hand Seamer

TP83 & TP84 RIVET GUN KIT

Virtually all the tools you need for riveting in kit form. Intended for professional sheet metal mechanics, serious home builder/students. Packed in a sturdy molded plastic case. #1 selling kit.

Part No.	Description
07-10-4703	3/32" Rivet Set, 3-1/2" O.A.L.
07-10-4704	1/8" Rivet Set, 3-1/2" O.A.L.
07-10-4705	5/32" Rivet Set, 3-1/2" O.A.L.
07-10-4706	3/16" Rivet Set, 3-1/2" O.A.L.
07-11-4704	1/8" Rivet Set, 5-1/2" O.A.L.
07-11-4705	5/32" Rivet Set, 5-1/2" O.A.L.
07-11-4706	3/16" Rivet Set, 5-1/2" O.A.L.
07-11-4703	Flat Rivet Set
07-140	Offset Flush Mushroom Set
07-170	Flush Mushroom Rivet Set w/ Guard
07-20-4703	3/32" Offset Rivet Set, 3-1/2" O.A.L.
07-20-4704	1/8" Offset Rivet Set, 3-1/2" O.A.L.

Part No.	Description
07-20-4705	5/32" Offset Rivet Set, 3-1/2" O.A.L.
07-92	Flush Mushroom Rivet Set
08-111	Bucking Bar
08-112	Bucking Bar
08-669	Bucking Bar
08-670	Bucking Bar
09-140	Power Regulator
09-RB-2	Beehive Retainer Spring
09-RH-2	Handi Retainer Spring
17-	Rivet Gun
62-14	Molded Plastic Carrying Case

Kit with TP83(3x) Gun ..... P/N 12-00240 ..... $299.00

DELUXE STUDENT TOOL KIT

This kit meets most school requirements for basic sheet metal tools. These high quality tools will take the student through school and into the profession for years of outstanding service. It contains the most popular rivet hammer and is a great starter kit. Wt. 14 lbs.

P/N 12-01127 ..... $359.00

Part No.	Pcs.	Description
0210A-3/32	3	Jobber's Length Drill
0210A-1/8	3	
0210A-5/32	3	
0210A-3/16	3	
0210A-1/4	3	
02-306-21	1	Integral Pilot Cutter
02-306-30	1	
02-306-40	1	
04-M-1/8	10	'M' Type Fastener
04-M-3/16	10	
04-M-3/32	10	
04-M-5/32	10	
02-441	1	Countersink Cage
04-501	1	Rivet Cutter
04-62	1	Cleco Plier
08-670	1	Bucking Bar

Part No.	Pcs.	Description
09H-2	1	Handi Retainer Spring
09B-2	1	Beehive Retainer Spring
09-140	1	Power Regulator
17-3	1	Rivet Gun
07-10-4703	1	Rivet Set, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4705	1	
07-10-4706	1	
07-170	1	Mushroom Set w/ Guard
18-D -10	1	Drill Stop
18-D -21	1	
18-D -30	1	
18-D -40	1	
62-297	1	Canvas Tool Bag
JSM-705	1	3/8" Reversible Air Drill

GLASTAR TOOL KIT

This kit is designed for all new Glastar kit aircraft. The tools included are recommended by the manufacturer, specifically for the assembly of the sheet metal portion of the kit. Many of these tools are of top quality, and designed to last. They are all covered by a 30 day unconditional money back guarantee. P/N 12-00831 ..... $924.00

Part No.	Pcs.	Description
02-2962-21	1	HREADED SHANK DRILL
02-2962-30	1	
02-2962-40	1	
02-306-21	1	PILOT CUTTERS COUNTERSINK
02-306-30	1	
02-306-40	1	
02-306-30-120	1	PILOT COUNTERSINK 120°
02-441	1	COUNTERSINK CAGE
02-501-12-40	3	12" AIRCRAFT EXTENSION DRILL
02-501-6-30	3	6" AIRCRAFT EXTENSION DRILL
02-501-6-40	3	
02-C1-H	1	DRILL SETS 60 (NUMBER SIZES)
02-R10B-1/16	3	JOBBERS LENGTH DRILL
02-R10B-1/4	3	
02-R10B-11/64	3	
04-200	1	CHIP CHASER
04-20SL	1	OFFSET SNIPS LEFT HANDED
04-20SR	1	OFFSET SNIPS RIGHT HANDED
04-22022	1	MULTI/BURR-5 5 BLADES INCLUDED
04-3090-1/2	2	SPRING TENSION CLAMPS A-1/2" D-3-1/2"
04-62	1	CLECO PLIER FOR SHEET METAL FASTNERS
04-EL-1/2-1/2	10	SIDE GRIP FASTENER CAPACITY-0-1/2" REACH 1"
04-EL-3/4-1/2	10	
04-K380	1	DEBURR TOOL W/ 3/4" BLADE

Part No.	Pcs.	Description
04-M-1/8	150	'M' TYPE SHEET METAL FASTENER
04-M-3/16	25	
04-M-3/32	250	
04-K380	1	DEBURRING TOOL
04-M-1/8	150	'M' TYPE SHEET METAL FASTENER
04-M-3/16	25	
04-M-3/32	250	
07-10-4703	1	RIVET SET, 3-1/2" O.A.L.
07-10-4704	1	
07-10-4706	1	
07-170	1	MUSHROOM RIVET SET
08-638	1	BUCKING BAR
08-647	1	
08-721	1	
08-760B-1	1	
09-140	1	POWER REGULATOR
10-37001	1	360° POP RIVETER
1245	1	12" FLEX RULER
17-3XSP	1	RIVET GUN
20-127-4S	1	90° ANGLE DRILL ATTACHMENT
53-211-4263	2	RIVET SQUEEZER
53-211-4264	2	PUNCH & DIE SET
53-420-2A	6	HAND SQUEEZER KIT
53-RBH-2	2	BEEHIVE & HANDI RETAINER SPRING
61-860	1	CENTER PUNCH & SCRIBE
62-54405	1	KIT BOX-PLASTIC & METAL
CP-785	1	AIR DRILL,REVERSABLE 3/8" CHUCK

MUSTANG KIT

This kit is designed especially for the assembly of the Mustang Kit aircraft. It is comprised of over 300 items, specifically required in the fabrication and assembly of this aircraft.

This 317 piece kit includes:

1 TP83(3x) or TP84(4x) Rivet Gun
1 TP91 Flush Rivet Set
1 SM10-4703 Rivet Set
1 SM10-4704 Rivet Set
1 SM10-4705 Rivet Set
1 A1007-234X QC Retainer Spring
1 TP346 Heavy Duty Rivet Cutter
1 TP61K Stop Countersink Kit
1 TP722 Fluting Pliers
130 TP75-1/8 Cleco Fasteners
25 TP75L-1/8 Cleco Fasteners
80 TP75-3/32 Cleco Fasteners
1 TP74 Cleco Pliers
1 TP44 Hand Seamer
1 TP227G Duckbill Pliers
1 TP266 Deburring Tool
1 TP888-3 Hand Rivet Squeezer
1 TP116A Squeezer Sets
1 TP751 Bucking Bar
1 TP670 Bucking Bar
1 SM181 Swivel Flush Rivet Set
5 TP641HC Handi-Clamp
25 TP75L-3/32 3/32 Cleco Fasteners
1 TP81 Hand Nibbler
4 TP49-30 Drill Bits
4 TP49-3/32 Drill Bits
4 TP49-40 Drill Bits
4 TP49-1/8 Drill Bits
2 TP49-12 Drill Bits
2 TP49-3/16 Drill Bits
1 TPA5611 Unibit Drill
1 TP294HD Auto Center Punch
1 TP735K Hand Pack Trial Kit
1 TPFS6 Flat File
1 TP4263 Dimple and Die Set
1 TP4264 Dimple and Die Set
1 TP216 Tool Box

Kit w/ TP83 gun (3x) ..... P/N 12-00347 ..... $835.00
Kit w/ TP84 gun (4x) ..... P/N 12-00498 ..... $718.00

TO

TOOL KITS – MALLETS

RV-12 BUILDERS TOOL KIT

The New RV-12 Tool kit is here! This new kit originated from the tool list in the RV-12 Plans, has recently been updated with additional tools from the kit manufacturer. This newer RV-12 tool kit includes a Molex connector crimper, more drill bits, more countersink cutters, more taps & a T-handle tap wrench, and a stick of Boelube lubricant. The ultimate RV-12 Tool Kit that is on the market today.

In the box:

- 9430 3" Avery hand rivet squeezer
- 3/32 dds sp 3/32" dimple die w/small dia. female
- 1/8 dds 1/8" dimple die set
- #8 dds #8 dimple die set
- 1621 1/8" flush set
- 1627 1/2" flush set
- 1602 sp 1/8"x 1/2" cupped set
- 1017 1/8" (30) Clecos (350 pcs.)
- 1016 3/32" (40) Clecos (50 pcs.)
- 1012 1/2"x1 side grips (5 pcs.)
- 1014 1/2"x1/2" side grips (5 pcs.)
- 200 cleco pliers
- #40 cobalt drills (4 pcs)
- #30 cobalt drills (3 pcs)
- #19 cobalt drills (2 pcs)
- #12 cobalt drills (2 pcs)
- #52 cobalt drills (4 pcs)
- #30 x 12" extension drill
- 1/4" cobalt drill (1 pc)
- #11 cobalt drill
- #16 cobalt drill (2 pcs)
- # 3 cobalt drills (2 pcs)
- 5/16 cobalt drill 1 each
- 11/32 cobalt drill 1 each
- 3/8 cobalt drill bit 1 each
- #27 cobalt drill (2 each)
- #36 cobalt drill (2 each)
- wht1921 molex wire crimper
- 1003 boelube - tube
- 500 fluting plier
- 575 hand seamer
- 1046 speed deburring tool
- 22022 royal multi-burr tool
- 1052 #30 c'sink cutter
- 1051 #40 c'sink cutter
- 1053 #27 c'sink cutter
- 1054 #20 c'sink cutter
- 1055 #12 c'sink cutter
- Special #30 x 120 cutter
- 19360 micro-stop c'sink cage
- 7891 pneumatic pop rivet puller
- p26a tight space pop riveter
- 4910 adjustable torque wrench
- unibit #3 1/4" to 3/4"
- 6510l offset snips - left
- 6510r offset snips - right
- 212 parker rolo-flair flaring
- 470-fm triple headed bender
- 7447 s/b gen. purpose hand pads
- 4510 small block for dies
- 6-32 tap
- 3/8-16 tap
- 3/8-24 tap
- 1/4-28 tap
- 5/16-24 tap
- 10/24 tap
- 21101 t-handle tap wrench
- 72758 6 pc. 4" smooth file set

P/N 12-03285 .....$2,215.00

DYNON SKYVIEW TOOL KIT

Pitot-Static / Angle of Attack Plumbing Kit for SkyView (or similar "ADAHRS-type") installations - Kit includes Color Coded Tubing (Pitot, Static, and Angle of Attack), Machined Static Ports, Quick-Disconnect Fittings, Snap Bushings, Grommets, Stainless hardware, and appropriate "AN" hardware for connecting to Dynon's AoA Pitot-Tube, and a detailed installation guide. Kit includes enough fittings to incorporate a backup ADAHRS unit or backup airspeed and altimeter.

P/N 12-03283 ..... $148.75

SOFT FACE DEAD BLOW BOSSING MALLET MODEL

Soft Face Dead Blow Bossing Mallet Model TCBM1.

Specifications:

- Weight: 1.5 lbs.
- Head Diameter: 2 5/16"
- Head Length: -
- Overall Length: 13"

P/N 12-03290 .....$35.85

SOFT FACE DEAD BLOW SLIMLINE HAMMER MODEL #S2

Soft Face Dead Blow Slimline Hammer Model #S2

Specifications:

- Weight: 1.375 lbs.
- Face Diameter: 1 1/2"
- Head Length: 4 1/4"
- Overall Length: 12 1/8"

P/N 12-03295 .....$20.85

SOFT FACE DEAD BLOW BOSSING MALLET MODEL

Soft Face Dead Blow Bossing Mallet Model TCBM3.

Specifications:

- Weight: 3 lbs.

Head Diameter: 2 11/16"
Head Length: -
Overall Length: 14"

P/N 12-03292 .....$48.50

SONEX BUILDERS TOOL KIT

This 367 piece Sonex Tool Kit has all of the recommended and most useful tools you will need to build a SONEX kit built aircraft.The first kit is the "standard" tools that every builder will need to build the Sonex.

The "optional solid riveting kit" is an addition for those builders that choose to use solid rivets. (Note: the optional kit is not required if standard Sonex riveting method is used).Compare our SONEX tool kit to the other SONEX tool kits on the market ---- our tool kit has the best quality tools, best value, and is the most complete SONEX tool kit available.

In the box:

- Hand seamer
- Cleco plier
- 3/32" clecos (100 pcs)
- 1/8" clecos (100 pcs)
- 5/32" clecos (100 pcs)
- 3/16" clecos (10 pcs)
- #30 pilot countersink cutter
- speed deburring tool
- 1/8" pop rivet dimpler
- #40 cobalt drills (12 pcs)
- #30 cobalt drills (12 pcs)
- #21 cobalt drills (3 ea)
- 1/4 cobalt drills (1 pc)
- #32 cobalt drills (3 ea)
- 6" swivel pad locking clamps (2)
- Vixen curved tooth file
- 4" file set (6 pcs)
- Swivel head pop rivet tool
- Fluting plier
- Rivet fan spacing tool
- 24" easy look flexible rule
- 6" s/brite cut & polish wheel
- Midwest offset snip - left
- Midwest offset snip - right
- Standard aircraft hand book
- Marker pens
- Double edge deburring tool
- Safety glasses

P/N 12-03286 .....$985.00

DYNON EFIS SYSTEMS TOOL KIT

Pitot-Static / Angle of Attack Plumbing Kit for Dynon EFIS (or similar) installations - Kit includes Color Coded Tubing (Pitot, Static, and Angle of Attack), Machined Static Ports, Quick-Disconnect Fittings, Snap Bushings, Grommets, Stainless hardware, and appropriate "AN" hardware for connecting to Dynon's AoA Pitot-Tube, and a detailed installation guide. Kit includes enough fittings to incorporate a backup EFIS or backup airspeed and altimeter. P/N 12-03284 ..... $133.80

ZENAIR HAND RIVETER

Hand Riveter with Custom Machined Heads. Riveter Heads (changeable Nose Bushing piece). ZENAIR blind (or pulled) rivets have been used to construct the all-metal Chris Heintz designs since the 1970s, and make riveting a quick and easy process! The ZENAIR riveting system forms the rivet head as the blind rivet is pulled, providing a low profile dome finish and high shear strength. Fast installation, simple tools and low cost make this a popular riveting system with homebuilders!

Note: The riveter is supplied with the custom machined heads, required for the Zenair blind rivets ((for use with Zenair blind rivets, sold separately) P/N 12-03713 .....$49.50

ZENAIR PNEUMATIC RIVETER

Pneumatic Riveter with Custom Machined Heads for use with Zenair blind rivets, sold separately ZENAIR blind (or pulled) rivets have been used to construct the all-metal Chris Heintz designs since the 1970s, and make riveting a quick and easy process! The ZENAIR riveting system forms the rivet head as the blind rivet is pulled, providing a low profile dome finish and high shear strength. Fast installation, simple tools and low cost make this a popular riveting system with homebuilders!

Note: The riveter is supplied with the custom machined heads, required for the Zenair blind rivets, for use with Zenair blind rivets, sold separately. P/N 12-03712 .....$99.85

ZENAIR BLIND RIVETS

These rivets are corrosion resistant, and the stem becomes locked in after being set. Also, not many different lengths are required for different diameters or thicknesses. In the Assembly Instructions, they are designated as A4 (1/8) and A5 (5/32).

Desc.	Length	Grip	Drill	Min. Single Shear Length	Part No.	Price
A4 Blind Rivet	1/8" / 3.2mm	1/4" / 6.4mm	#30	110 lbf / 50kg	12-03709	$11.65
A5 Blind Rivet	5/32" / 4mm	5/16" / 7.9mm	#20	180 lbf / 80kg	12-03711	$16.75

TO

RIVETING HAMMERS

US 3X

These high quality riveting hammers are excellent for all light aircraft metal riveting applications. They feature a convenient offset handle (except Model US3AA which is straight handle) and come complete with retainer spring and regulator. All models feature metered teasing trigger, made in U.S.A.

Part No.	Blows / Min.	Capacity		Stroke	Length	Weight (Lbs.)	Price
		Alum.	Bore				
US1X	3600	1/8"	9/16"	1-1/2"	5-11/16"	2	$243.95
US2X	2580	1/8"	1/2"	2-1/4"	6-11/16"	2-1/4	$199.95
US5X	1560	1/4"	3/4"	2-11/16"	6-11/16"	4-3/4	$347.00
US7X	900	3/8"	3/4"	5-13/16"	8-5/16"	6	$373.95

"RECOILLESS" RIVETING HAMMERS

US 3R

In the early stages of developing a truly recoilless/fatigueless riveting hammer, it was determined that the tools must meet certain goals. The main goal being a reduction in low-frequency vibration in accordance with ISO Standard #5349-1986. In this standard are guidelines for the measurement and assessment of human exposure to hand-transmitted vibration. As a result, the following has been achieved: •Ergonomic design: To maximize user comfort by achieving a relaxing, comfortable, lightweight and balanced tool •Compact tool size: Since aircraft riveting is never standard, a tool that will allow the best overall access • Retain user touch: A metered trigger which provides single or multiple blows per minute while maintaining the ability to set rivets in seconds • Further dampen noise output. • Least amount of parts: No similar tool is produced with fewer parts, thus enhancing reliability, but keeping it simple enough so that maintenance can be done by anyone.

Independent testing* has shown these tools will greatly lessen job-related effects of prolonged exposure to vibration & boost user productivity.

SPECIFICATIONS

Part No.	Capacity		Bore	Stroke	Blows per minute
	Alum.	Steel			
US3R	3/16"	5/32"	1/2"	3"	1900
US5R	1/4"	3/16"	1/2"	5"	1400

Part No.	Rivet Set dia	Overall Length	Weight	Air Inlet	Price
US3R	.401	7-7/8"	3 Lbs.	1/4 NPT	$379.95
US5R	.401	9-7/8"	3.5 Lbs.	1/4 NPT	$379.00

PNEUMATIC RIVET SQUEEZER

Heavy duty industrial tools are manufactured to exacting standards to insure long service life. All critical parts, including the yoke, are fabricated from 4130 steel and heat treated to Rc 42-46. These rivet squeezers have earned a reputation for durability and reliability through years of service on the production lines of major airframe manufacturers such as Grumman, Piper, Beech and Cessna. Easily operated by one hand. All replacement parts and other yoke designs available. Features feathering throttle.

SPECIFICATION	MODEL	
	3000	6000
Max. Force	3000	6000
Rivet Capacity Dural	3/16"	3/16"
Steel	5/32"	5/32"
Standard Yoke Reach	2"	2"
Air Hose Size	1/4"	1/4"
Set Travel	9/16"	9/16"
Recommended Line Pressure	90PSI	90PSI
Weight	6 LBS.	6 LBS.

3000..... P/N 12-03400 ..... $593.00
6000..... P/N 12-03500 ..... $688.00

RIVET CONVERSION KITS

Converts your conventional hand pop riveter into an economical RivNut installer tool.

Size	Part No.	Price
6-32.....	12-13680.....	$9.56
8-32.....	12-13681.....	$9.56
10-32.....	12-13682.....	$9.56

2X

AIRCRAFT RIVET GUNS

The standard tool used in aircraft manufacturing plants such as Boeing, Rockwell, Lockheed etc., is completely interchangeable with Chicago Pneumatic. These tools are slow hitting with excellent finger tip control. Accepts all .401 shank rivet sets and attachments. All guns are brand new and carry a full 1 year warranty.

Part No.	Blows / Min.	Capacity Alum.	Bore	Stroke	Weight (Lbs.)	Price
2X	2580	1/8"	1/2"	2-1/4"	2.7	$148.95
3X	2160	3/16"	1/2"	2-7/8"	3.4	$143.95
4X	1740	1/4"	1/2"	3-1/16"	3.6	$148.95

TP82 AND TP84 RIVET GUNS

This "X" type feathering trigger riveter is the only rivet gun that allows you to slowly begin riveting without damage to the skin. This is critical in performing riveting operations. This gun is used by aircraft mechanics worldwide. It's also the perfect tool for kit builders. NOTE: Long term exposure to low frequency vibration caused by riveting may be harmful to your hands and arms. We suggest you take frequent breaks when riveting to reduce this exposure. Features: * Takes .401 shank rivet sets * Lightweight aluminum handle * Price includes spring retainer & regulator (TP97) * Precision machined hardened and ground valve * "Sure Grip" powder coated finish * Teasing trigger * Precision machined and hardened cylinder for long life. • Made in the U.S.A.

2X Rivet Gun (1/8" Capacity)..... P/N 12-02004 ..... $148.95

3X RIVET GUN KIT

Virtually all the tools you need for riveting in kit form. Intended for professional sheet metal mechanics, serious home builder/students. Packed in a sturdy molded plastic case. #1 selling kit. Visit www.aircraftspruce.com for a complete list of kit contents.

P/N 12-00240..... $299.00

ATS ECONOMY RIVETING KIT (3X)

This cost-saving riveting kit features ATS's popular 2602A Rivet Gun , a selection of 4 Bucking Bars (141, 142, 148, and 149), plus a complete assortment of Rivet Sets to install Universal Head (AN470) or Flush (AN426) rivets in sizes 3/32" to 3/16". Comes to you in a stylish molded case to keep things neatly organized. This is the prefect "field" kit to take with you anywhere -- it has the riveting tools you need conveniently laid out in one handy ready-to-go package. P/N 12-03195..... $183.96

SPECIAL DIMPLING & RIVET SET
FOR RV4, RV6, RV8 AIRCRAFT

This 21-piece dimpling and riveting set was designed especially for use in the construction of the Vans RV aircraft series, and is ideal for a variety of other aircraft as well. All the riveting sets and dimple dies are made from heat treated stainless steel.

* Dimple dies size stainless steel – rivet set are steel. All are heat treated.

Special RV Dimpling and Riveting Kit includes: Set holder block, Cup sets, Flat sets, and Spring back dimple dies.

Dimple Dies –3/32", 1/8", 5/32" rivet size. 6-32, 8-32, 10-32 screw sizes.

Cup Sets – 3/32", 1/8", 5/32".

Flat Sets – 1/16", 1/8", 3/16", 1/4", 5/16", 3/8", 1/2". Polyethylene set.

21-piece kit..... P/N 12-00450 ..... $209.75

7-PC RIVET SET

Holder includes 3/32", 1/8", 5/32 and 3/16 cups for AN470 rivets, plus 3 flat sets for AN426 rivets. To be used with pneumatic or hand rivet squeezer.

P/N 12-00555..... $89.75

6-PC DIMPLE DIE SET
RIVET SIZE

Holder includes springback dimple dies for 3/32", 1/8" and 5/32" rivets. To be used with pneumatic or hand rivet squeezer.

P/N 12-00560..... $94.85

6-PC DIMPLE DIE SET
SCREW SIZE

Holder includes springback dimple dies for 6-32, 8-32 and 10-32 screw sizes. To be used with pneumatic or hand rivet squeezer.

P/N 12-00565..... $99.75

TO

RIVET SETS FOR RIVETING HAMMERS

RIVET SETS STRAIGHT .401 SHANK (AN470)

Length "L"	Part Numbers					
	Rivet Size 3/32"	Rivet Size 1/8"	Rivet Size 5/32"	Rivet Size 3/16"	Rivet Size 1/4"	Price
3-1/2"	SM10-4703	SM10-4704	SM10-4705	SM10-4706	SM10-4708	$6.50
5-1/2"	SM11-4703	SM11-4704	SM11-4705	SM11-4706	SM11-4708	$11.95
7-1/2"	SM12-4703	SM12-4704	SM12-4705	SM12-4706	SM12-4708	$12.50
10-1/2"	SM13-4703	SM13-4704	SM13-4705	SM13-4706	SM13-4708	$20.75

RIVET SETS STRAIGHT .498 SHANK (AN470)

Length "L"	Part Numbers					
	Rivet Size 3/32"	Rivet Size 1/8"	Rivet Size 5/32"	Rivet Size 3/16"	Rivet Size 1/4"	Price
3-1/2"	SM30-4703	SM30-4704	SM30-4705	SM30-4706	SM30-4708	$19.50
5-1/2"	SM31-4703	SM31-4704	SM31-4705	SM31-4706	SM31-4708	$29.85
7-1/2"	SM32-4703	SM32-4704	SM32-4705	SM32-4706	SM32-4708	$25.90

FLUSH SETS STRAIGHT .401 SHANK (AN426)

Dia.	Length	P/N	Price	Dia.	Length	P/N	Price
1"	2-1/2"	SM90	$11.50	1-1/2"	5-1/2"	SM95	$23.75
1"	3"	SM91	$11.95	1-1/2"	3-1/8"	SM96	$22.75
1"	5-1/2"	SM92	$15.90	1-3/4"	3-1/4"	SM97	$26.95
1"	7-1/2"	SM93	$23.85	1-1/8"	2-1/4"	SM98	$22.75
1-1/4"	3"	SM94	$22.95	1-1/4"	2-1/4"	SM99	$23.25

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

FLUSH SETS STRAIGHT .498 SHANK (AN426)

Dia.	Length	P/N	Price	Dia.	Length	P/N	Price
1"	2-1/2"	SM100	$15.95	1-1/2"	3-1/8"	SM106	$23.50
1"	3"	SM101	$24.25	1-3/4"	3-1/4"	SM107	$24.75
1"	5-1/2"	SM102	$22.25	1-1/8"	2-1/4"	SM108	$42.50
1"	7-1/2"	SM103	$36.90	1-1/4"	2-1/4"	SM109	$17.95

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

SETS FOR HIGH SHEAR RIVETS .401 SHANK

Length on all is 3-1/2"

Rivet Size	Part No.	Price
1/8"	SMHS10-4	$23.85
5/32"	SMHS10-5	$20.95
3/16"	SMHS10-6	$21.75
1/4"	SMHS10-8	$20.75

RIVET SETS OFFSET .401 SHANK (AN470)

Length "L"	Part Numbers					
	Rivet Size 3/32"	Rivet Size 1/8"	Rivet Size 5/32"	Rivet Size 3/16"	Rivet Size 1/4"	Price
3-1/2"	SM20-4703	SM20-4704	SM20-4705	SM20-4706	SM20-4708	$8.95
5-1/2"	SM21-4703	SM21-4704	SM21-4705	SM21-4706	SM21-4708	$13.50
7-1/2"	SM22-4703	SM22-4704	SM22-4705	SM22-4706	SM22-4708	$14.95
10-1/2"	SM23-4703	SM23-4704	SM23-4705	SM23-4706	SM23-4708	$23.50

FLUSH SETS OFFSET .401 SHANK (AN426)

DIA	Length	P/N	Price
1"	3-1/2"	SM140	$24.50
1"	7-1/2"	SM142	$18.90
1"	5-1/2"	SM141	$18.65

NOTE: These flush sets are universal for any diameter rivet. Order by part number referencing the length and diameter of the flush set required.

OFFSET FLUSH SET

Excellent for limited access areas. Shank: 0.401. Surface Face: 1" x 1 1/2".

P/N 12-02892 ..... $34.95

"T" FLUSH SET

T Flush Set. Surface: 1 1/2" x 1/2". Overall Length: 5 3/4". Weight: 0.50 lbs.. Shank: 0.401.

P/N 12-02894 ..... $14.95

BUCKING BLOCKS

Designed to be used with a riveting gun or by striking with a hammer. For aid with dimpling and/or riveting applications. Acts as a holding fixture for .187 shank dimple dies or rivet sets. Weight: 4 lbs. P/N 12-00805 ..... $36.50

SWIVEL DIMPLING TOOL .401 SHANK

*Can be used with TP93 Bucking Block

***Example: To order L = 3-1/2 - 1/8" Rivet specify: SM10SP-4264

Model #	"L"	Type	Price
SM10SP***	3-1/2"	Punch	$59.75
SM10SD	3-1/2"	Die	$39.30

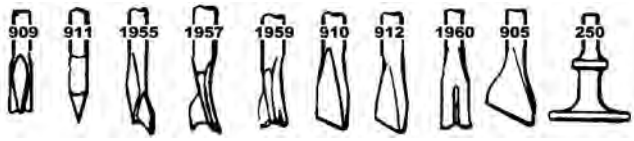
Cuppings	3/32	1/8	5/32	3/16
For 100° Rivets (AN426)	4263	4264	4265	4266

KNOCKOUT PUNCHES FOR HIGH SHEAR RIVETS

Knockout punches for high shear rivets .40 shank. Made in the U.S.A.

Description	Length	Rivet Size	Part No.	Price
SMHS401K-4	3-1/2"	1/8"	12-01116	$7.75
SMHS401K-5	3-1/2"	5/32"	12-01117	$19.85
SMHS401K-6	3-1/2"	3/16"	12-01118	$19.85
SMHS401K-8	3-1/2"	1/4"	12-01119	$7.75

.401 SHANK RIVETING HAMMER ACCESSORIES



Description	P/N	Price	Description	P/N	Price
Twin Blade Cutter	909	$18.75	Chisel	910	$13.25
Moil Point	911	$11.75	Rivet Buster	912	$65.25
Body Ripper	1955	$10.25	Spotweld Breaker	1960	$10.20
Panel Cutter	1957	$85.25	Scraper	905	$15.50
Metal Trimmer	1959	$15.90	Flush Set	SM97	$26.95

RETAINER SPRINGS

Retainer springs comes in two styles: Quick Change Type: Designed to make possible speedy changing of rivet set in rivet gun. Beehive Type: Designed as a fixed type to securely hold rivet set in rivet gun.

Rivet Hammer Model #	Beehive Type		Quick Change Type	
	Part No.	Price ea.	Part No.	Price ea.
1X-2X-3X-4X	A1006-234X	$6.50		
5X-7X-9X	A1006-579X	$7.50	A1007-234X	$4.65
E3-E5	A1006-234X	$6.50	A1007-234X	$4.65
100B-200B,E3,E5			A1007-234X	$4.65
AVC 10,11,12,13	A1006-AVC	$7.75		
3R-5R	A1006-234X	$6.50		

STUBBY MICROSTOP

Stubby Microstop 1/4"-28 Threaded Shank for use in angle motors. Adjustable in 0.001" increments. 1/4"-28 female threads. 1/2" cutter capacity. Rated for 3,000 RPM use.

P/N 12-02893 ..... $26.50

SPRING LOADED CENTER PUNCHES

Spring loaded center punch for 1/8" OR 3/32" and larger rivet heads. This spring loaded center punch works great with universal aluminum head rivets, oval head and round head rivets.

1/8" ..... P/N 12-02464 ..... $36.95

3/32" ..... P/N 12-02934 ..... $34.95

BACK RIVETING RIVET SET

For back riveting flush rivets on RV control surfaces and other homebuilts. Has a plastic Delrin sleeve with spring to hold multiple sheets of aluminum together while riveting. 0.401 shank x 4-1/8 inches long.

Back Rivet Set 3-1/2" long ..... P/N 12-07100-3 ..... $34.50 ea.

TO

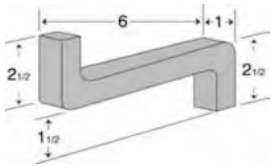
AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

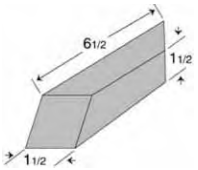
Prices Subject to Change Without Notice

BUCKING BARS

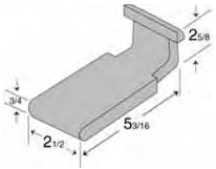
Our bucking bars are cast with ductile iron to insure non-porous finish which is very important in order to have a highly polished finished surface. They are heat treated to 38-42 RC and therefore can be repolished many times without changing hardness. This wide selection of sizes, shapes, and weights enables the aircraft builder to pick the proper bar for his job. Made in the U.S.A.



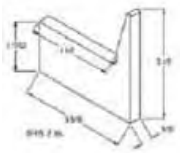
12-01302 2-3/4 Lbs. $33.75



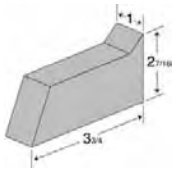
12-01303 3 Lbs. $16.85



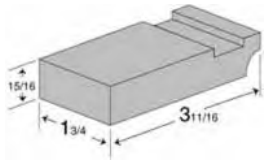
12-01305 3 Lbs. $16.85



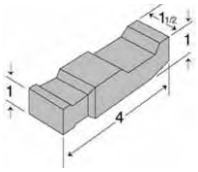
12-01306 2 Lbs. $98.75



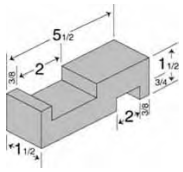
12-01307 1-3/4 Lbs. $16.85



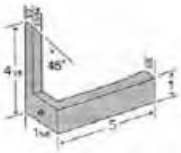
12-01308 1-1/2 Lbs $16.85



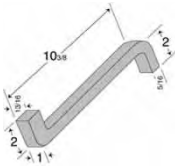
12-01309 1-1/4 Lbs. $16.60



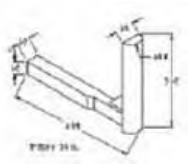
12-01310 2-3/8 Lbs. $15.90



12-01311 1-1/4 Lbs. $16.80

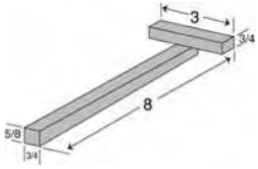


12-01312 3-5/16 Lbs. $27.50

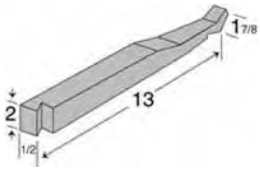


12-01313 1-1/4 Lbs. $16.85

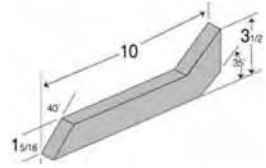
12-01314 1/2 Lbs. $16.50



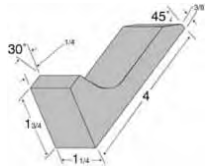
12-01315 1-1/2 Lbs. $60.75



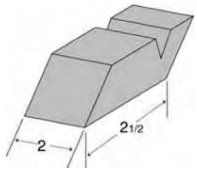
TP-683 3-1/4 Lbs. $16.85



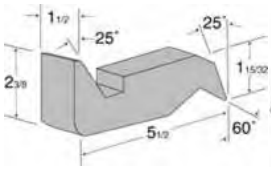
12-01319 1-3/4 Lbs. $52.85



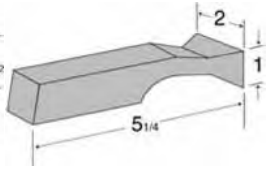
12-01320 2-1/2 Lbs. $36.70



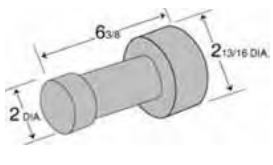
12-01280 1-3/8 Lbs. $16.85



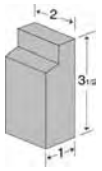
12-01281 3 Lbs. $15.90



12-01282 1-3/8 Lbs. $16.85

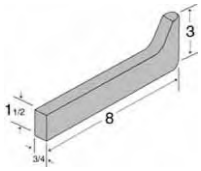


12-01284 6 Lbs. $36.75

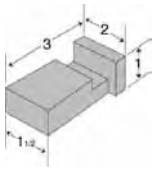


12-01285 1-1/2 Lbs. $16.85

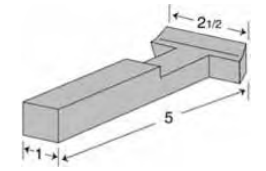
12-01286 3/4 Lb. $36.85



12-01287 2-3/4 Lbs. $53.65

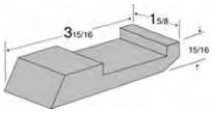


12-01288 1-1/4 Lbs. $17.50

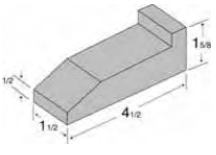


12-01289 1-1/4 Lbs. $16.75

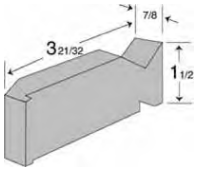
12-01290 1 Lb. $17.95



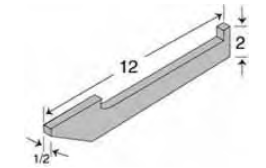
12-01291 1-1/4 Lbs. $24.70



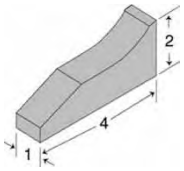
12-01292 2 Lbs. $16.85



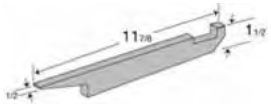
12-01293 1-1/4 Lbs. $19.75



12-00828 2-1/4 Lbs. $59.95

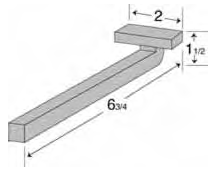


12-00841 1-1/2 Lbs. $17.95

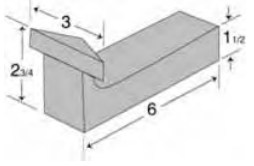


12-01294 2 Lbs. $27.50

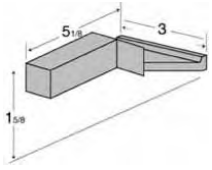
AT-618 2-1/4 Lbs. $39.70



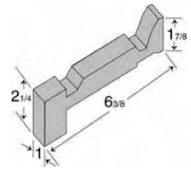
12-01295 1 Lb. $16.85



12-01296 4-1/4 Lbs. $25.95

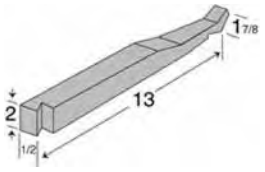


12-01297 1-3/8 Lbs. $16.85



12-01298 1-3/4 Lbs. $23.75

12-01299 2-1/4 Lbs. $40.00



12-01301 3-1/4 Lbs. $16.85

TO

BUCKING BARS – V-DRILL – V-TAP GUIDES

BUCKING BAR 601

5.25 lbs. ..... P/N 12-02907 ..... $19.95

BUCKING BAR 638

1.25 lbs. Style B ..... P/N 12-02899 ..... $15.95

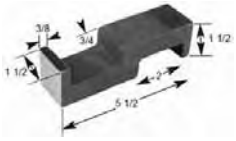
BUCKING BAR 670

2 lbs. Style A ..... P/N 12-02898 ..... $14.95

BUCKING BAR 692

2.9 lbs. ..... P/N 12-02909 ..... $16.95

BUCKING BAR 736



2.11 lbs. ..... P/N 12-02908 ..... $15.95

BUCKING BAR 750U-1

1.65 lbs. ..... P/N 12-02906 ..... $11.95

BUCKING BAR KIT

This starter kit contains the most commonly used bucking bars. Multi-finished surfaces for numerous applications. Heat treated for durability.

- 1 AT638 Bucking Bar
- 1 AT681 Bucking Bar
- 1 AT647 Bucking Bar
- 1 AT670 Bucking Bar

P/N 12-00840 ..... $156.95

V-DRILL PORTABLE GUIDES

The V-Drill Guide is like a portable drill press for precision alignment. V-groove along the bottom of the guide allows for perpendicular alignment with all drill sizes on round parts and corners. Bottom surface is precision ground to assure stability and accurate perpendicular alignment on flat surfaces. Drill guide is sized for drill bit sizes: 1/8" to 3/8", and made for 17 standard drill sizes (1/8 to 3/8 in 1/64 increments). Guides are made from special nickel alloyed steel that is heat treated for durability. Drill Straight - Every Time! Drill Guide comes with a handy plastic storage case and is 100% American Made Quality. Features: • Accurate - 90 degree V-groove along the bottom - automatically squares up the drill with the surface • Portable - Pocket size - Reusable plastic storage tube • Built to Last - Special nickel alloyed steel • High Quality - Natural steel finish - non-plated - Heat-treated for durability.

1/8" to 3/8" ..... P/N 12-02937 ..... $22.85
3/8" to 1/2" ..... P/N 12-03455 ..... $24.50

V-TAP GUIDES

The V-Tap Guides are for regular ground taps for hand tapping threads into pre-drilled holes. Works great on flat surfaces, round parts, and angled edges. Tap Straight - Every Time!

Standard: Guide holes are sized for ANSI Standard Ground Taps (0-80, 1-64, 1-72, 2-56, 2-64, 3-48, 3-56, 4-36, 4-40, 4-48, 5-40, 5-44, 6-32, 6-36, 6-40, 8-32, 8-36, 8-40, 10-24, 10-32, ¼-20, ¼-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, ½-13, ½-20, 5/8-11, 5/8-18). A protective plastic storage tube is included. P/N 12-02938 ..... $20.66

Metric: Guide holes are sized for ANSI Standard Ground Thread Metric Taps (1.6mm, 2mm, 2.5mm, 3mm, 3.5mm, 4mm, 5mm, 6mm, 8mm, 10mm, 12mm, 14mm, 16mm). A protective plastic storage case is included. P/N 12-02939 ..... $20.66

STI V-TAP GUIDES (SCREW THREAD INSERTS)

The STI (Screw Thread Insert) V-Tap Guides are for Helicoil type taps to repair striped out threads.

STI V-TAP Guide (Unified Course Threads): Can handle standard ground STI hand tap sizes: 9/16-12, 1/2-13, 7/16-14, 3/8-16, 5/16-18, 1/4-20, 12-24, 10-24, 8-32, 6-32.
P/N 12-02940 ..... $20.66

STI V-TAP Guide (Unified Fine Threads): Can handle standard ground STI hand tap sizes: 5/8-18, 9/16-18, 1/2-20, 7/16-20, 3/8-24, 5/16-24, 1/4-28, 10-32, 8-36.
P/N 12-02941 ..... $20.66

FLUSH RIVET SET WITH RUBBER RING

Features a rubber ring around the face to reduce slippage and to prevent damage to aircraft skin. Face Diameter: 1 1/4". Shank: 0.401.

Rivet Set ..... P/N 12-03361 ..... $16.50
Replacement Rubber Ring ..... P/N 12-03362 ..... $4.65

SNAP SOC RIVET SET CAPS

Insert these caps onto the ends of your rivet sets to provide a protective zone between the rivet set and the rivet. Helps to prevent against damage to the rivet or adjoining aircraft skin. Color coded for easy use. Each cap lasts for approximately 50-70 rivets. Note: Rivet Set pictured is not included.

Color	Size	Part No.	Price
White	3/32"	12-03363	$17.50
Orange	1/8"	12-03364	$17.50
Green	5/32"	12-03365	$17.50
Yellow	3/16"	12-03366	$18.95
Blue	1/4"	12-03367	$18.95

TO

RIVET REMOVAL TOOL

This quality tool enables the user to quickly and accurately remove rivets and blind fasteners. The tool comes complete with drill bits and guides, #40, #30, #21, and #10. Made in U.S.A.

P/N 12-00817 ..... $47.95

REPLACEMENT BITS

P/N 12-01128 - #10 ..... $3.35
P/N 12-01129 - #21 ..... $2.70
P/N 12-01130 - #30 ..... $2.85
P/N 12-01131 - #40 ..... $2.55

HAND RIVETING & DIMPLING TOOL

Used for hand dimpling of skins and small parts and for hand riveting of parts, assemblies, and spars. This tool maintains alignment of the dies to each other, and insures proper alignment to the work surface for superior dimpling results over either rivet gun or free-hand dimpling methods.

Features include: • 22" deep x 4" tall throat • Heavy wall 1" x 2" steel tube arm • Heavy wall aluminum channel base • Bronze 1/2" I.D. guide bushings for shafts • Heat treated and centerless ground stainless steel driver shaft (2)– one shaft has flat end for riveting with rivet gun & one shaft accepts 0.187" shanks for dimple dies & sets. •1.5" extension shaft for dies • Adjustable die holder block. Rivet Tool Return Spring Kit now included (Spring, collar and wrench). Great for one handed dimpling of skins and parts. Uses rivet, dimple and die sets with .187" shank. (Dies and sets sold separately)

P/N 12-00177 ..... $248.95

DRDT-2 RIVET DIMPLER

DRDT-2 (AKA Dash 2) is a welded steel c-frame rivet dimpler. Replaces the common impact c-frame rivet dimplers of the past. With its ample mechanical advantage, dimpling is fast, easy, less fatiguing and safe on the skins. With a fully adjustable set holder you can achieve consistent and accurate dimples. The DRDT-2 incorporates a new low force spring return system that prevents skin damage from the accidental release of the handle without increasing the force required to dimple. 22" throat depth allows dimpling of up to 44" wide sheets. The relief under the lower frame member provides dimpling access to spars, ribs, leading edge skins. Designed and analyzed using state of the art engineering tools the DRDT-2 can handle all your dimpling needs on your project. The DRDT-2 is painted with an industrial powder coat giving one of the toughest finishes available. Features: • Weight: 60 lbs • Size: 28"X16"X3" • Capacity: Up to 22" depth • Gap: 4" • Skin thickness: Up to 0.040" Aluminum. Dimple Dies: 3/16" shank Diameter.

Rivet Dimpler ..... P/N 12-00907 ..... $419.00
Dimple Die Rivet Set ..... P/N 12-00560 ..... $94.85
Dimple Die Screw Set ..... P/N 12-00565 ..... $99.75

LONG REACH PLIER KITS

(3) pieces for access into the most demanding applications. Each plier has a full 11" reach. Medium carbon steel, hardened, fully polished. Cushion PVC handles. Vinyl storage pouch. Model TP942..... P/N 12-00364 ..... $35.75

HOLE DUPLICATORS
(DRILL BUSHING TYPE)

Provide an accurate means of drilling duplicate matching holes in overlapping sheets. Hole to be duplicated is drilled though bushing when pilot is in place. ..... $14.70 ea

Part No.	Pilot & Drill Size	Part No.	Pilot & Drill Size
AT532-61 #40	(.098")	AT532-63 #21	(.159")
AT532-62 #30	(.129")	AT532-65 #10	(.194")

DRILL STOPS

Lock on drill with set screw. Regulate hole depth, cushion the breakthrough. Eliminate surface marks & reduce drill breakage.

#40 Drill P/N 12-08800 ..... $0.95
#30 Drill P/N 12-08900 ..... $0.95
#28 Drill P/N 12-09000 ..... $1.77
#21 Drill P/N 12-09100 ..... $1.15
#20 Drill ..... P/N 12-09200 ..... $0.96
#12 Drill ..... P/N 12-09300 ..... $1.47
#10 Drill ..... P/N 12-09400 ..... $0.95
1/4" Drill ..... P/N 12-09500 ..... $1.39

ANGLE DRILL

One of the smallest angle head designs for close-quarter drilling operations. Made in USA. Features: • 90° Angle - 1/4" Capacity, 1/4"-28 Thread - 0.3 hp (0.22 kW) • 3200 RPM • 90PSI (MAX) • Overall Length 8-1/4" (210 mm) • xWeight 1.25lbs P/N 12-00241 ..... $326.00

POWER SHEAR

This air-powered shear cuts straight lines or curves up to 180 inches/minute. An ideal shear for any aircraft builder. Cuts up to 18 gauge mild steel. Width of cut: 7/32". Length: 8-1/4". Wt. 2.14 Lbs.
P/N 12-01330 $375.00

ROUTER

This air-powered router is very light weight and features a straight handle and rear exhaust. Base is 1-1/2" and router guide is included. RPM: 20,000. Router shank: 1/4". Length: 6". Wt.: 1-1/2.12 Lbs. Made in U.S.A.

P/N 12-01321 ..... $289.00

CHIP CHASER

This handy, economical tool removes chips and burrs on metal between sheets after rivet holes have been drilled. A recommended tool for any aircraft builder involved with sheet metal work.Router

P/N 12-01304 ..... $6.75

WISS ANGLE SNIPS

The new M8R and M9R compound action snips possess the same outstanding durability as all the other products in the wide Wiss® compound action line, but feature a right-angle blade that allow greater reach in overhead and other awkward applications.

And like every other Wiss compound action snip, both the M8R and M9R have a unique blade edge, shaped to allow the material to set deeper and serrated to hold it tight during the cut.

M8R - Compound action right angle blade cuts straight to left
P/N 12-02007 ..... $24.85
M9R - Compound action right angle blade cuts straight to right.
P/N 12-02006 ..... $24.85

SMALL BODY RIGHT ANGLE DRILL

The ACAT 90 Degree Right Angle Drill is a high-precision, powerful, durable drill. 3200 RPM. Weight: 1.8 lbs. Length: 10 1/4". Accepts industry standard 1/4"- 28 threaded bits. P/N 12-02859 ..... $249.85

AIR DRILLS (PISTOL TYPE)

These air powered pistol drills feature ergonomic design and use .90 H.P. motors. Sound level is a low 84 db while production output remains high with these high quality drills. Made in U.S.A.

Part No.	RPM	Capacity	Length	Weight	Price
12-00816	4,500	1/4"	6"	2 lbs	$526.00
12-00815	1,800	3/8"	6-1/2"	2.6 lbs.	$165.95
12-00813	500	3/8"	7-1/2"	2.13 lbs.	$647.00

TO

SHEET METAL TOOLS

MARVEL AIR TOOL OIL

MARVEL brand oil - - especially engineered for care of piston-type and rotary air tools. Prevents rust formation while providing lubrication for longer tool life and smoother operation. Keeps your air tools in top shape. A "must" for all air tools. 4 oz. bottle with spout. P/N 12-00872 ..... $7.95

COUNTERBORE

A 10" thread extension is used for boring holes in hard-to-reach places. Primary use is in the installation of the landing gear on the LongEZ and Cozy aircraft. 3/4" bore does not have 1/4" pilot and must use the pilot received with the 5/8" boring tool. 5/8" dia. w/1/4" pilot .....P/N 12-00219 ..... $55.75
3/4" dia. w/o pilot .....P/N 12-00220 ..... $49.85

MICRO-STOP COUNTERSINK CAGES & NYLON FOOT PIECE

2 Models available-one with NEEDLE bearing and one with BRONZE bushings. .001" increment depth adjustment. Positive adjustment lock. 1/4" dia. shank. 9/32" shaft travel. 9/16" cutter capacity. For 1/4-28 threaded cutters. Comes with "NO-MAR" foot piece. Rated at 3,000 RPM. Made in USA.
With Bronze Bushings..... P/N 12-01412 ..... $36.50
With Needle Bearings ..... P/N 12-00940 ..... $46.50

SQUEEZER SET MIX

6 piece set of the most commonly used squeezer sets shown above: 3/32" & 1/8" cup sets; 1/8" modified cup set; 1/8" & 1/4" flush sets; & 1/16" by 3/8" dia. flush set; plus #4510 organizer block. P/N 12-00882 ..... $57.85

90° ANGLE DRILL KIT

This angle drill kit includes a drill attachment with quality ball bearing construction for long life. Kit includes 12 threaded drills in assorted sizes and lengths, a mini 3-jaw chuck with 1/16" to 1/4" diameter capacity, and a molded storage case. Made in the U.S.A.

Drill Sizes:	1 ea.	#2140	#40 stubby	1 ea.	#2130	#30 stubby
	2 ea.	#3140	#40 short	2 ea.	#3130	#30 short
	1 ea.	#3127	#27 short	1 ea.	#3121	#21 short
	1 ea.	#3112	#12 short	1 ea.	#3114	#1/4" short
	1 ea.	#4140	#40 long	1 ea.	#4130	#30 long
	1 ea.	#20379 Mini 3-jaw chuck				

P/N 12-00883 ..... $192.90

STOP COUNTERSINK CUTTERS - 100°

• Made in the U.S.A. • High Speed Steel • 1/4" -28 Threaded Shanks • 100° 3-Flute Precision Ground •For Use in Micro-Stop Countersink Units • 8 Sizes Available

Pilot Size	Decimal Equiv.	Body Dia.	Part No.	Price
#40 (3/32" rivet)	.0980"	3/8"	12-00879	$12.95
#40 (3/32" rivet)	.0980"	1/2"	12-00942	$12.95
#30 (1/8" rivet)	.1285"	3/8"	12-00880	$12.95
#30 (1/8" rivet)	.1285"	1/2"	12-03331	$13.50
#27 (#6 screw)	.1440"	1/2"	12-00943	$12.95
#20 (#8 screw)	.1610"	1/2"	12-00881	$12.95
#12 (#10 screw)	.1890"	1/2"	12-00944	$12.95
5/32" (5/32" rivet)	.1560"	1/2"	12-00945	$12.95
3/16" (3/16" rivet)	.1875"	1/2"	12-00946	$12.95
1/4" (1/4" rivet)	.2500"	1/2"	12-00947	$12.85

ECONOMY COUNTERSINK CUTTERS 100°

Economy High Speed Steel 3/8" and 1/2" dia in 8 different sizes • High Speed Steel • 1/4" -28 Threaded Shanks • 100° 3-Flute Precision Ground • For Use in Micro-Stop Countersink Units • 8 Sizes Available

Size	Decimal Equiv. (in.)	Body Dia. (in.)	Part No.	Price
#40 (3/32" rivet)	.0980	3/8	12-03249	$6.65
#40 (3/32" rivet)	.0980	1/2	12-03250	$6.95
#30 (1/8" rivet)	.1285	3/8	12-03251	$6.65
#30 (1/8" rivet)	.1285	1/2	12-03252	$6.95
#27 (#6 screw)	.14440	3/8	12-03253	$6.65
#27 (#6 screw)	.14440	1/2	12-03254	$6.95
#20 (#8 screw)	.1610	3/8	12-03255	$6.65
#20 (#8 screw)	.1610	1/2	12-03256	$6.95
#12 (#10 screw)	.1890	3/8	12-03257	$6.65
#12 (#10 screw)	.1890	1/2	12-03258	$6.95
5/32" (5/32" rivet)	.1560	3/8	12-03259	$6.65
5/32" (5/32" rivet)	.1560	1/2	12-03260	$6.95
3/16" (3/16" rivet)	.1875	3/8	12-03261	$6.65
3/16" (3/16" rivet)	.1875	1/2	12-03262	$6.95
1/4" (1/4" rivet)	.2500	3/8	12-03263	$6.65
1/4" (1/4" rivet)	.2500	1/2	12-03264	$6.95

360° SWIVEL HAND POP RIVET TOOL

Stanley brand professional hand pop rivet tool. Unique head design swivels 360° for riveting in any position, at any angle. Extended nose for hard to reach places. Built in handle latch. Die-Cast aluminum & hardened steel construction. Molded grips. Includes (4) interchangeable steel nose-pieces for: 3/32", 1/8", 5/32", & 3/16" P/N 12-00889..... $47.50

DELUXE DIMPLE DIE KIT W/ BLOCK

This deluxe dimple die kit has all the most commonly used dimple dies in one package--at a special price. This kit includes:

1- 3/32 Dimple Die Set
1- 1/8 Dimple Die Set
1- #6 Screw Dimple Die Set
1- #4520 Organizer Block for Dies
1- #14870 Female Die / 3/8" Dia.
1- #14871 1/8" Female Die / 3/8" Dia.
1- #8 Screw Dimple Die Set

P/N 12-00868..... $219.75

DOUBLE OFFSET RIVET SET

SET OF 4 RIVET SETS - 5-1/2" long sets. Used for hard to reach rivets in corners. High alloy steel and heat treated. Shanks are precision ground. Cuppings are polished.

3/32" Double Offset Rivet Set..... P/N 12-00936 ..... $30.85
AVERY 1/8" Dbl. Offset Rivet Set..... P/N 12-00873 ..... $29.50
5/32" Double Offset Rivet Set..... P/N 12-00937 ..... $29.75
3/16" Double Offset Rivet Set..... P/N 12-00938 ..... $30.55
4-PC Double Offset Rivet Set ..... P/N 12-00939 ..... $104.75

AVERY CUTTING & POLISHING WHEEL KIT

Avery cutting polishing wheels are a uniform blend of minerals and resins molded into wheel form with rugged, dense construction that provides aggressive polishing and blending action without removing excess base materials. These wheels generate uniform finishes and can remove minor surface imperfections. Use these wheels with a die grinder for deburring holes and edges. Small wheels are more versatile than large (6") wheels. Can be used on hand held parts or parts in the jig. These wheels are the same density, grade, and mineral type as the 7A MED 6" wheel.

Kit Contents: (1) #936 Mandrel + (2) 1" x 1" x 3/16" Wheels (1) #932 Mandrel + (2) 2" x 3/4" x 1/4" Wheels ..... P/N 12-00876..... $63.75
1" x 1" x 3/116" Hole Wheel..... P/N 12-01997..... $9.50
Mandrel for 3700..... P/N 12-01996..... $8.50
2" x 3/4" x 1/4" Hole Wheel ..... P/N 12-01999..... $8.50
Mandrel for 3719..... P/N 12-01998..... $9.75

3M™ SCOTCH-BRITE™ DEBURRING WHEEL

Two Styles Available: Cut & Polish/Unitized Wheel-7A Medium grade (harder) Use to radius and deburr edges of aluminum parts. These wheels give a uniform brushed satin finish to parts and deburr quicker and easier than hand finishing. These wheels are discs of Scotch-Brite web compressed and bonded to form a rugged, dense wheel. Wheel size: 6" dia. x 1" wide x 1/2" thru hole..... P/N 12-00875..... $76.95
Light Deburring Wheel-7S Fine Grade (Softer)
Light deburring 7S Fin 6 x 1 x 1. This wheel has a 1" thru hole. To fit 1/2" order P/N 12-01585. ..... P/N 12-00948..... $67.80
3M Flange Adapter 3 45035 1/2" ..... P/N 12-01585..... $4.60

DRIVE PIN PUNCHES

Drive Pin Punch 1/16"..... P/N 12-00949 ..... $10.50
Drive Pin Punch 3/32"..... P/N 12-00870 ..... $10.50
Drive Pin Punch 1/8"..... P/N 12-00871 ..... $10.50

4-PIECE DRILL STOP SET

Use when drilling in sheet metal to help eliminate drill breakage & surface marks. Safely keeps drill from going too far through the work. Drill stops have a coiled spring to cushion the drill breakthrough & prevents the drill chuck from marring the work surface. Color coded for easy identification.

P/N 12-00867 ..... $10.90

TO

SHEET METAL TOOLS

POLYETHYLENE DIMPLING MALLET

This custom made UHMW polyethylene plastic mallet is great for dimpling skins. Blows are more solid and much quieter than with steel hammers. Will outlast wood mallets. Hammer head measures 2.5" round x 4" long with 12" handle. Wt: 16oz. P/N 12-00605.....$42.50

PLASTIC FORMING MALLET

This custom made UHMW polyethylene plastic forming mallet is great for metal forming. Smooth radiused surfaces will not marr surface. Long life, split resistant. Mallet head measures 2.5" round X 5" long w/ 11" handle; Wt: 14 oz. Great combo to the shot bag.

P/N 12-00607 ..... $39.95

METAL FORMING SHOT BAG

For those builders that want to try their hand at metal forming this leather shot bag is a must have item. Leather shot bag made from 3/4 oz. top grain cowhide. The bag is double stitched and fills through a 1" opening sealed with Velcro. The bag is 12" round and 1-1/2" thick. Use lead shot #8 - #7.5; or sand - mortar quality type (shot can be purchased at local sporting goods or gun stores). P/N 12-00606 ..... $53.75

HAND SEAMER/3.5" JAW

Has VISE GRIP locking feature to aid clamping & holding work. Use for straightening and bending rib and bulkhead flanges. Made with 7" vise grip plier. Jaws are made from 3/16" X 1" X 3-1/2" stainless steel with machined radius. TIG welded & polished. P/N 12-00608 ..... $53.75

FLUTING PLIER

Make narrow & precise flutes for straightening ribs and bulkheads easier & better than pliers with molded jaws. Made with 7" VISE GRIP pliers. Pins are 3/16" dia. stainless steel. TIG welded & polished. P/N 12-00609 ..... $52.75

VISE GRIP DIMPLERS

Made for dimpling in restricted and hard to reach places where regular dimple dies won't fit. Made with 7" VISE GRIP plier. Machined tool steel dimple dies are T.I.G. welded to the VISE GRIP jaws then polished. 2 sizes available (3/32" and 1/8").

3/32"..... P/N 12-00611 ..... $52.75
1/8"..... P/N 12-00612 ..... $52.75

LEVER SNIPS

Offset cutting tool, leaves 2 clean, finished edges. 8.5" length, .75 lb.

Model TP133 - (Right hand snip, cuts left & straight).....P/N 12-00366.....$24.50
Model TP134 - (Left hand snip, cuts left & straight)
P/N 12-00367.....$24.50

ROBIN OFFSET HEAVY DUTY SNIP

This offset blade design allows the sheet to pass under your hand. The steel forged blades keeps metal from stretching and causing puckering marks along the cut edge. 16 gauge mild steel capacity. 1.63 lbs.

Model TP299.....P/N 12-00369.....$53.85

TEMPIL MARKERS

Marks easily on metal, ceramic, glass, plastic, wood and paper. Markings are fast drying, permanent, weatherproof. Won't rub off, run, fade, chip, peel or blister. The surface can be wet, dry, rough, smooth or oily. Efficient on any horizontal, vertical or inclined surface. Long-lasting 6" ball point tube with non-clogging paint.

Black..... P/N 12-11901 .....$13.75 Red.....P/N 12-11907.....$8.50
White..... P/N 12-11908 .....$9.50 Yellow.....P/N 12-11911.....$7.70

ADJUSTABLE SET HOLDER FOR PNEUMATIC SQUEEZERS

New improved design. Heat treated 4130 steel investment casting with rolled threads. This special set holder is made to replace the rigid (2-9/16") set holder standard to most CP214 style pneumatic squeezers. This adjustable set holder will eliminate the need to shim the dies and sets with shim washers. Adjustments are faster & easier.

P/N 12-00615 ..... $89.75

Note: Only for yokes with 1" thick base or less. Will not work in tandem units.

POP GRIP DIMPLERS AN-426 RIVETS

For dimpling in hard to reach places. Works with any hand pop rivet tool. Can be used over & over. Works for both 100 & 120 pop rivets. Extra nails included (Uses standard hardware store nails). 2 sizes available. 3/32"..... P/N 12-00613 ..... $25.85
1/8"..... P/N 12-00614 ..... $26.75

Note: The pop rivet dimplers show above are made with 100° angles, same as regular dimple dies. They will work with either solid flush rivets (AN-426 – 100°) or with pull type rivets such as a AVEX rivets (120°), etc. The dimple formed with these pop rivet dies will not be as 'sharp' as dimples formed with regular dimple dies. This is because you get more pressure with a squeezer or a hammer than with a pop rivet puller; however, the dimples formed with pop rivet dimplers are adequate for occasional use in tight or hard-to-use places.

FLUSH SWIVEL RIVET SET

U.S. MADE -- ATI Brand. New design flush rivet set with swivel action eliminates problem of rivet gun alignment with the work surface + rubber guard to reduce slippage while flush riveting. .401" shank X 1-1/4" dia. polished face. Built-in retaining spring.

P/N 12-00741 ..... 49.50

BACK RIVETING PLATE

Back riveting requires a hard flat surface to act as a bucking bar while you set the shop head of the rivet. Our plate is a perfect hard & flat surface for "Back Riveting". 3/8" thick X 4" wide X 15" long. Low carbon steel plate with flat ground surface. Weight 10 lbs. P/N 12-00618 ..... $68.75

HOLE FLANGING TOOL

For forming flanges around lightening holes. Made from 2024 aluminum and hard black anodized. Ball bearing style rollers. Comes with spare set of rollers. P/N 12-00619 .....$20.70

SPARE ROLLER-SET OF 2

Replacement rollers for our edge rolling & hole flanging tools (above).

P/N 12-00621 .....$2.97

WISS COMPOUND ACTION SNIPS

12-01155

12-01190

12-01189

Famous for cutting ease, keeping their edge and making clean, sharp cuts. Hardened molybdenum steel blades, serrated jaws and vinyl comfort grips. Capacity 18 gauge (.049") steel. Length 9-3/4". Wt. 14 oz.

P/N 12-01155- Cuts left, from tight curves to straight..... $18.75
P/N 12-01189- Cuts right, from tight curves to straight..... $19.85
P/N 12-01190- Cuts straight (or wide curves left or right in light stock)..... $18.75

IRWIN OFFSET SNIPS

Irwin offset snips handle virtually every cutting job in sheet metal - linoleum, carpet, tile and other materials. They are easier to use than conventional metal snips, and cut in 3 directions. Irwin snips feature forged steel blades, a unique curved handle for comfortable fit in the hand, and an exclusive pinchpoint wire cutter. They cut in three directions—straight, sharp angles in one direction, and 5" diameter circles in the opposite direction. Irwin offset snips make difficult cuts easy - they can make tight circular cuts, cut easily through corrugated metal, and cut solid and stranded wire. Available in right or left cutting models. IRWIN (Right Cutting) ..... P/N 12-00187 ..... $17.65
IRWIN (Left Cutting) ..... P/N 12-00186 ..... $17.55

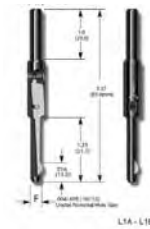
TO

SHEET METAL TOOLS

SPEED DEBURRING & C'SINKING TOOL

Swivel action - makes deburr & c'sink holes fast & easy. Molded handle with 2" long plated steel "Dog-leg" shaft with 1/4"-28 threaded holder. Includes (1) 3/8" X 100° 3-flute burring cutter (part #1050) + 8" extension shaft for deburring the inside of flanges & other hard to reach holes. ..... P/N 12-00622 ..... $36.90
Handle and Extension Shaft sold separately
Swivel handle only..... P/N 12-00623 ..... $17.75
Extension Shaft only ..... P/N 12-00624 ..... $8.50

E-Z BURR - HSS SERIES



E-Z Burr High Speed Steel (HSS) tools are the industry standard for quick, effective and consistent front and rear burr removal. No other HSS deburring tool is this durable. By designing the blade to operate independent from springs and plungers, E-Z Burr has created a deburring tool with a flexible blade and a solid shank for optimum performance for deburring metal or plastic components. In addition, the patented E-Z Burr HSS deburring tool allows you to change chamfer settings, from extreme low to extreme high, and cutting blades without removing it from the holder. Once the desired chamfer is set, it won't change, even from blade to blade. The result is less downtime, more production, and higher profits.
E-Z Burr Tool Specifications:
Series L1A and L1B tools have a working range of -0.0 + .006 inches and -.03 + .15mm.
Series L2A and L2B tools have a working range of -0.0 + .016 inches and -.10 + .40mm.
Series L3A and L3B tools have a working range of -0.004 + .015 inches and -.10 + .40mm.
Note: All tools (front and rear cutting blade with positive rake)
** METRIC SIZES NOT LISTED, MAY BE AVAILABLE UPON REQUEST AS SPECIAL ORDER ONLY - CALL FOR QUOTE ON SIZES NOT LISTED: 1-877-477-7823 **

Hole Dia.	Shank Dia.	Blade Series	Part No.	Price
3/32 in. / 2.38mm	.236 in. / 6.00mm	L1A	12-02949	$74.85
1/8 in. / 3.17mm	.236 in. / 6.00mm	L1B	12-02951	$74.75
5/32 in. / 3.96mm	.250 in. / 6.35mm	L2A	12-02952	$67.75
3/16 in. / 4.76mm	.250 in. / 6.35mm	L2B	12-02953	$69.75
1/4 in. / 6.35mm	.359 in. / 9.10mm	L3A	12-02955	$69.85
2.50mm	6.00mm	L1A	12-02959	$74.85
3.00mm	6.00mm	L1A	12-02960	$74.85
4.00mm	6.00mm	L2A	12-02961	$82.75

EZ-BURR RIVET HOLE BUNDLE

The Rivet Hole Deburring Tool bundle by E-Z Burr includes 5 high performance HSS deburring tools for front and rear cutting. Sizes: 1/8, 5/32, 3/16, 7/32, & 1/4.
P/N 12-02956 ..... $226.95

HSS THREE FLUTE BURRING CUTTER - 100°

US made. High speed steel, precision ground, three flute burring cutter. 3/8" diameter X 100° with 1/4-28 threaded shank. Same style as a countersink but without the pilot. P/N 12-00625 .....$18.95

SNAP RING PLIER KIT

Install or remove retaining rings of the Waldes Tru-Arc type with ease. Quality pliers made of heat-treated steel with vinyl covered handles. Kit includes two pair of pliers and two sets of four replacement tips to handle the most common sizes of both internal and external rings. Furnished in plastic box.
P/N 4440R..... $28.50

STRAP WRENCH

Heavy malleable iron body with latex-treated nylon webbing. For gripping and turning of round, hex or square parts without marring the surface.Indispensible tool for use in close quarters where ordinary pliers cannot be used. Tool is 11-1/2" long with 18" strap. Capacity 3". Wt. 1-1/2 lbs. P/N 3004 ..... $51.75

DOUBLE EDGE DEBURRING TOOL

Used to quickly deburr edges of sheets up to 1/8" thick. Save time and motion deburring edges of parts. Precision ground Carbide "V" shape blade with hex aluminum handle. Non-removable cutter style.
P/N 12-00629 ..... $23.65

EDGE MARKER BLOCK

This handy device holds a marking pen and has an adjustable stop for running along the edge of a part. The adjustable stop allows variable edge distance for rivet layout, etc. One thumbscrew holds the pen (pen sold separately) and the other thumbscrew holds the the adjustable stop. Made from delrin (plastic) material. Comes ready to use with (1) Pilot marking pen.
P/N 12-00630 ..... $19.90

SHOP HEAD RIVET GAUGE SET

Set of four gauges for -3, -4, -5, & -6 rivets. Each gauge measures MINIMUM height and MINIMUM diameter of shop heads AFTER setting. Eliminates guessing if your rivets are properly set. Works for measuring both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped on each gauge. Color coded anodized finish. Instructions included.
P/N 12-00631 ..... $22.75

EDGE ROLLING TOOL

For pre-bending skin edges on lap joints and butt joints before riveting. "Edge rolling" will prevent skin edges from curling up during riveting. Machined round body made from 2024 aluminum. Hard black anodized finish for wear resistance. Ball bearing style nylon rollers (non marking); + spare set of rollers and instructions included.
P/N 12-00632 ..... $23.85

RIVET LENGTH GAUGE

One gauge measures -3, -4, -5, & -6 rivets. Used to check for proper length of rivets BEFORE setting. Eliminates measuring and guessing of rivet lengths. Works for both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet sizes permanently stamped. Gold anodized finish. Instructions included.
P/N 12-00633..... $11.85

TEMPORARY ASSEMBLY PINS

Initial fitting of control surfaces require multiple installation and removals of the parts to fit, trim, and adjust everything. These temporary assembly pins make the task quicker and easier. Pins are 3/16" diameter with tapered points and angle bends for easy installation. The pins are threaded so the pin holder can be removed — this is necessary to prevent damage should you move the control surface too far during fitting. To remove pins just screw holder back on pin and remove pin. Packaged in sets: 6 pins / 2 holders. P/N 12-00627 ..... $18.99

INSTRUMENT HOLE PUNCH ATS-123C

Reversible cutter for both 2-1/4" and 3-1/8" instrument panel holes. Easy to use even with instrument panel installed in aircraft. Allows for close work with other instruments already installed. 4 lbs (2Kg) shipping weight.
P/N 12-02743.....$108.76

BOLT GRIP

This new tool lightly grips the heads of bolts and screws for easier insertion into tight or blind spots. No more dropped or lost parts. Tool has one end for -3 (3/16") fasteners and one for -4 (1/4") fasteners. 12" overall length.
P/N 12-00628 ..... $22.50

CHUCKING REAMERS

We stock straight shank and straight flute Chucking Reamers in a wide range of sizes.

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF OUR CHUCKING REAMERS.

BRASS PLUMB BOB

Precision machined brass with clear lacquer finish and hardened replaceable tip. Top unscrews for centered string installation.
Model : 6C235 Size : 8 oz, 4 7/8" L Finish : Clear Lacquer Characteristics : Replaceable Tip, Screw Top To Attach String (String Not Included) P/N 12-01711 ..... $16.95

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SHOT BAGS

These shot bags are made out of .070/.090 thick top grain cowhide for extended life and to produce a blemish-free metal surface. These bags have suede outer or forming surface and a tanned inner surface to resist abrasive wear from the media. Convenient media filter and reinforced flap with velcro seal is provided. All bags are approximately 1.5" to 2" thick when filled. Can be filled with buckshot or silica sand (not included) found at most sporting good stores.

Model No.	Size (inches)	Part No.	Price
SB8	8"	12-02310	$69.75
SB12	12"	12-00996	$41.75
SB18	18"	12-00997	$49.75
SBR18 (rectangular)	18"x12"	12-02310	$69.75

PANEL BEATER HAMMER & DOLLY KIT

The most widely used selection of panel beaters and dollies for most metal shaping needs, provessional grade in a molded plastic box. Each hammer is color-coded for either shrinking (blue) or stretching (red) forming tasks. The 3 panel beaters included are the dinging, shallow-domed face a nd pick hammer combo. The dollies included are the thin toe, utility, curved and heel shapes, providing the user with the best combination kit on the market. See the individual sections on panel beaters and dollies for more specifications on each item. 8-piece kit includes: • DT2566, DT2560 & DDT2537 panel beaters • CP548, CP552, CP553, & CP554 dollies •All tools made from medium carbon steel, forged, heat treated and mechanically polished for years of continuous service. Weight: 16.5 lbs.; size: 16.5"L x 14"W x 4"H. P/N 12-01011 .....$149.75

T-DOLLIES

Simple, but necessary forming tool allows you to create new flanges or straighten out damaged flanges. Can be used effectively by taking to an existing body panel or locked in bench vise and create an exact radius edge using any flat faced panel beater or wood slapper. T-dollies are fabricated out of carbon steel hardened and zinc plated to provide years of service life. Extra long flat handle. Heads have radius ends.

Model No.	Size (inches)	Part No.	Price
DCTD01	1"x 8"	12-01019	$16.50
DCTD02	3/4"x 6"	12-01020	$15.90
DCTD03	1"x 8"	12-01021	$17.85
DCTD 3-pc. kit (8lbs.)		12-01022	$46.50

ARC360 HOLE CUTTER

Panel knock put punches and hole saws work well for holes that are aren't too big but it gets harder and more expensive as the size of the hole increases.

You can cut holes with a router but cutting holes with a router is a cumbersome ordeal. The router is really just too big a tool to be swinging 360 degrees easily. You can set it to cut holes down to around 1.5 inches and up to around 10 inches. The tool's small size allows you to easily see your work as you are cutting. If you want an arc you can start and stop anywhere you want. It will cut any thickness of sheet aluminum.

The cutting speed in 032 thick 2024-T3 aluminum is around 40 inches per minute so you can cut a 4-inch diameter hole in less than 20 seconds. P/N 12-01977..... $149.75

HARDWOOD SLAPPER

These slappers are made from grade A select midwestern grown hard maple for toughness, stiffness and durability. With an ergonomically designed grip area, the hand and wrist are positioned in a neutral and natural condition. Finished with protective oil that resists staining and guards against moisture penetration. 4 different shapes: gentle, medium, flat, and radius face. The new thinner cross-section of 2-1/4" allows working a tighter radius in more confined areas. Each slapper comes with a leather face cover to eliminate marring of the metal.

Model No.	Shape Style	Overall Length	Surface Length	Face Width	Weight (Lbs.)	Part No.	Price
SP1	Gentle	14"	8.5"	2.25"	1.3	12-02311	$54.75
SP2	Medium	14"	8.5"	2.25"	1.3	12-02314	$54.75
SP3	Flat	14"	8"	2.25"	1.3	12-02315	$54.75
SP4*	Radius	14"	8.5"	2.25"	1.3	12-01003	$54.75
SLP-001L Replacement leather cover & hardware						12-01004	$7.50

HAND FORMING DOLLIES

These professional series hand dollies are a complete selection of shapes and weights for most forming needs. These dolies can be used with panel beaters or wood slappers. Dollies weight and shapeimpacts the flow of the metal. Choose weights according to sheet metal thickness. Medium carbon steel, forged, ground, heat treated and mechanically polished for years of continuous use.

Model No.	Weight (lbs)	Part No.	Price
CP548	2.02	12-01005	$28.50
CP552	2.85	12-01006	$29.50
CP553	2.55	12-01007	$29.50
CP554	1.97	12-01008	$29.90
CP555	3.94	12-01009	$39.85
CP556	3.40	12-01010	$39.75

PANEL BEATER HAMMERS

These professional series panel beater hammers are uniquely balanced acting as a natural extension to the users own hand. Creating excellent feel and feedback each an devery time you contact the metal. Each hamer style is color coded for easy recognition: MODELS: DT2537 & DT2566 are Stretching. MODELS: DT2560 & D2569 are Shrinking.

Model No.	Head Wt./lbs	Overall Length	"A"	"L"	"B"	Part No.	Price
DT2537	.67	13"	1.6"	5.5"	-	12-01027	$34.75
DT2566	.57	13"	1.5"	5.4"	-	12-01029	$34.50
DT2560	.70	13"	1.6"	3.8"	1.5"	12-01028	$34.65
DT2569	.70	13"	1.6"	3.8"	1.6"	12-01030	$34.70

BOSSING MALLETS EXTENDED REACH

These extended depth plastic mallets allow deeper reach and a more aggressive and fuller finished shape. The UHMW polyethylene heads are lightweight, resistant to wear and non-marring. Hickory handles with full round shafts. When paired with shot bags, very creative, roughed out forms can be accomplished.

Model No.	Small radius dia.	Large radius dia.	Overall head lgth	Head dia.	Weight (lbs.)	Part No.	Price
DBM01D	5/8"	2-1/4"	7-1/2"	2"	2.8	12-01031	$47.50
DBM02D	7/8"	1-3/8"	8-1/2"	2-1/2"	3.0	12-01032	$48.50
DBM03D	1-1/4"	3"	7-1/2"	3"	3.8	12-01033	$52.75

TO

MITTLER BROTHERS SHEET METAL TOOLS

POWER DRIVE BEAD ROLLER

The Industry Leading Power Drive Bead Roller Made In the U.S.A. Since 1984. Over 100 Bead Roll Profiles Available To Shape Or Strengthen Metal.

Max Capacity
16 Ga (.050") Aluminum
19 Ga (.040") Mild Steel
21 Ga (.035") Stainless Steel

Features Include:
0-9 FPM
Variable Speed Foot Pedal Control
Forward / Reverse Switch
Both Shafts Driven
Adjustable Depth Of Bead
& 1-1/8" Throat Height.

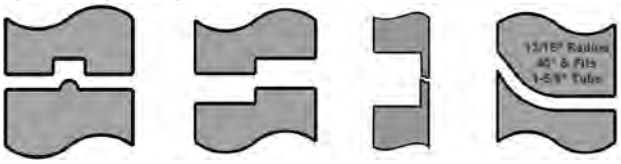
Used For Aircraft & Racecar, Construction & Repair.
Includes Choice of 1 Set of 2-1/2" OD ($65 value) Rolls
24" Power Drive Bead Roller Model 210-24..... P/N 12-02744.....$795.00
36" Power Drive Bead Roller Model 200-36..... P/N 12-02745.....$995.00

24" MANUAL BEAD ROLLER

Bead Rolls Sets Sold Separately
Model 210-24M
P/N 12-02746.....$596.00

BEAD ROLL SETS

Nylatron (High Strength Plastic) Roll for Thin Aircraft Aluminum.



Round Roll 1/8"-1"
Step Roll .062"-.250"
Art Pattern P/N 12-02764
Spoiler Roll P/N 12-02766

SEE WWW.AIRCRAFTSPRUCE.COM
FOR ROUND ROLL AND STEP ROLL PART NUMBERS.

Standard Tank P/N 12-02765
Full Radius Tank P/N 12-02768
Tipping Roll P/N 12-02767

Wire Bead Roll Step 1
Wire Bead Roll Step 2
Wire Bead Roll Step 3

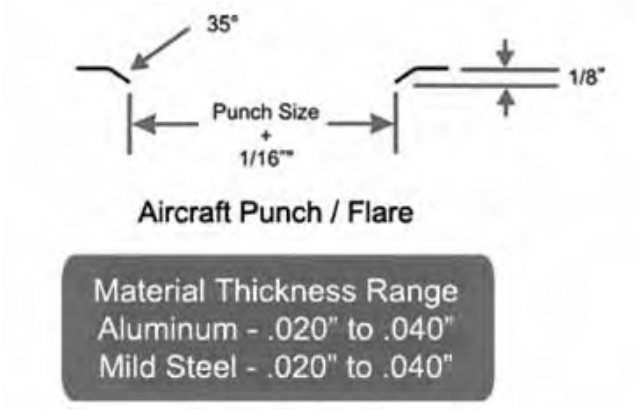
Above Bead Rolls = $69.75 Per Set

Model 201-125-WBS Wire Bead Roll (3pc. Set)
P/N 12-02769.....$240.95

See www.aircraftspruce.com for 100+ Bead Roll Selection

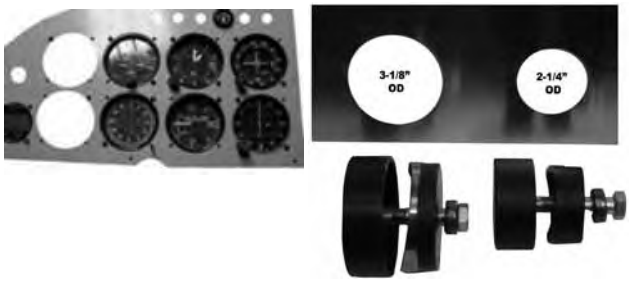
AIRCRAFT PUNCH & FLARES 1"- 6" OD

Just drill a pilot hole for the 1/2" draw bolt, apply the tool and tighten the bolt for a smooth, flared hole in one easy step. Punch hole only by removing female flare ring and use punch and die. Easily mounts in our Bench Presses.



OD	Part Number	Price
1"	12-02778	$120.00
1-1/4"	12-02779	$120.00
1-1/2"	12-02780	$134.85
1-3/4"	12-02781	$135.00
2"	12-02782	$145.00
2-1/4"	12-02783	$145.00
2-1/2"	12-02784	$145.75
2-3/4"	12-02785	$160.00
3"	12-02786	$160.00
3-1/8"	12-02787	$215.95
3-1/4"	12-02788	$215.95
3-1/2"	12-02789	$215.95
3-3/4"	12-02790	$230.95
4"	12-02791	$230.95
5"	12-02792	$285.95
6"	12-02793	$335.00
7pc Set 1"- 3" (MINUS 2-1/4" & 2-3/4")	12-02794	$885.00
9pc Set 1"- 3"	12-02796	$1,950.00
13pc Set 1"- 4"	12-02795	$1,067.00

INSTRUMENT HOLE PUNCH



OD	Part Number	Price
2-1/4"	12-02797	$110.00
3-1/8"	12-02798	$120.75

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE SELECTION OF MITTLER BROTHERS TOOLS.

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

MITTLER BROTHERS SHEET METAL TOOLS

MANUAL BENCH PRESS

Economical & versatile. Bench press accepts tooling for punching round, square & oblong holes; punching louvers; creating radius corners; & shrinking or stretching metal. Punch/flare tooling & instrument hole punches. Easily mounted with included adapters. Can also Be used as arbor press.

Model 2200-M
P/N 12-02770.....$595.00

LOUVER PUNCHES

LOUVER PUNCH START UP KITS WITH MOUNTING HARDWARE

Size	Part No.	Price
1"	12-02771	$775.00
2"	12-02772	$775.00
3"	12-02773	$775.00
4"	12-02774	$795.00
5"	12-02775	$795.00
3" Dome	12-02776	$795.00
4" Dome	12-02777	$795.00

ULTIMATE BOX & PAN BRAKE

The ultimate Box and Pan Brake has a unique 3-finger design. Incorporating moveable segmented bed fingers and apron fingers as well as upper radius fingers. Radius fingers allow forming aircraft and racecar panels using 3003 to 2024 T3 aluminum, .062 inch mild steel and .0375 inch stainless steel. Bend combinations easily that were extremely difficult if not impossible before.
Features include wrenchless upper set back adjustments, 3-1/2" depth of box, 2" down leg, 1" front to rear adjustment and 1/4" reverse bend capabilities. A complete set of upper radius fingers.

- Wrenchless upper set back adjustments
- 3-1/2 inch depth of box
- 2 inch down leg
- 1 inch front to rear adjustment
- 1/4 inch reverse bend capabilities

Along with the box and pan brake, you will receive a complete set of upper radius fingers (your choice), bed fingers, apron angle fingers, and counterweight(s). The total width of the upper radius finger kit will be 48". You will receive the following fingers: qty 7 of 6" and one each of 3", 2", and 1" fingers totalling to 48".

Model 2800-48-16.....P/N 12-02799..... $3,250.00
Upper Radius Finger Kits (radius is measured inside of bend)

BENCH TOP ENGLISH WHEEL

A Rugged, Robust Machine for the occasional metalworking project to the professional craftsmen. All wheels (anvil & top) are heat treated, hard turned & ground for accurate precision metal forming.

- 26-1/2" Deep Throat
- 2-1/2" OD - 2" Wide Anvils
- 7" OD - 2" Wide Top Wheel
- Cam Action Release on Top wheel For Easy Anvil Change
- Adjustable Anvil Wheel Angle
- 3" x 4" x 1/4" Tube Construction For Minimum Deflection
- Kick Wheel Manual Pressure Adjustment
- Anvil Wheels In Radius Of 2-3/8",3-1/4",5", 8-1/2",12" & Flat

Model 2900.....P/N 12-02812 ..... $1,425.00

PLANISHING HAMMER

Speed up fabrication time on complex multi form aluminum and steel panels for making those impossible to find replacement parts.

- 4600 Hits Per Minute @ 90 PSI
- Rear Adjuster Sets Load Force & simplifies Anvil Changes
- Foot Pedal Control for Hands Free Operation
- 9 Radius Anvil Heads Included: 3/4" , 1-1/2", 2", 3", 4", 6", 8", 12" & Flat

12" Model 2700.....P/N 12-02813 .....$850.00
24" Model 2700-24.....P/N 12-02814 ..... $1,000.00

AIRCRAFT SCALE SET

- 15 x 15" Cast Aluminum Pads
- 1500 Lbs Per Pad Capacity Lbs. or Kg
- Reads to 1 Lb. / 1/10% Accurate
- Displays All Information at Once
- Zero All Pads at Once or Individually
- 40 Hr. Battery Life (rechargeable)

Certification Available At Optional Cost.

Deluxe Aircraft Scales include custom length cables with Deluxe Stainless Steel connectors and software to calculate center of gravity height.
4500 lbs.
Model 50297 .....P/N 12-02816 ..... $1,091.00

TO

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE SELECTION OF MITTLER BROTHERS TOOLS.

JACKCLAMP PARALLEL BAR CLAMP

The 12" JackClamp is a multi-use clamp for a variety of different projects. The JackClamp features standard and metric rulers and is capable of clamping over, under, inside and through different configurations. This tool does what other clamps are mechanically unable to do including re-configuring to function as a hoist , jack, or spreader. Features: • The JackClamp can be totally disassembled and then reassembled inside of a project • The JackClamp module design enables it to mate to a second JackClamp creating a tool capable of clamping and spreading simultaneously • By utilizing the optional accessory, V-Jaws (not included), the user can securely hold round stock or irregular shapes • By utilizing the optional accessory, Spreader Jaws (not included), the user can spread materials with a gap as small as 1/4" • Weight: 3 lbs.

Parallel Bar Clamp ..... P/N 12-02846 ..... $59.75
Replacement Pads Set ..... P/N 12-02851 ..... $4.95
Storage Bag ..... P/N 12-02854 ..... $20.95

JACKCLAMP 2 CLAMP KIT

The JackClamp 2 Clamp Kit includes 2 JackClamps, 2 Spreader Jaw Accessories, 2 V-Jaw Accessories, 2 JackClamp Foot Accessories, and a convenient carry-all bag. The JackClamp is a multi-use clamp for a variety of different projects. The 12" JackClamp features standard and metric rulers and is capable of clamping over, under, inside and through different configurations. This tool does what other clamps are mechanically unable to do including re-configuring to function as a hoist , jack, or spreader. The Spreader Jaws allow even more flexibility with the JackClamp including spreading materials with a gap as small as 1/4". The V-Jaws secure clamping and can hold round stock or irregular shapes. The Foot accessory allows for hand free jacking and works great for cabinet installation.

Note: JackClamp 2 Clamp Kit includes 2 JackClamps, 2 Spreader Jaw Accessories, 2 V-Jaw Accessories, 2 JackClamp Foot Accessories, and a convenient carry-all bag..... P/N 12-02852 ..... $186.95

V-JAW JACKCLAMP ACCESSORY

The unique V-Jaw JackClamp accessory allows secure clamping including holding round stock and irregular shapes.

P/N 12-02848 ..... $14.75

SPREADER JAW JACK-CLAMP ACCESSORY

The Spreader Jaw JackClamp accessory allows more flexibility with your JackClamp including spreading materials with a gap as small as 1/4".

P/N 12-02849 ..... $14.75

JACKCLAMP FOOT ACCESSORY

The JackClamp durable Foot accessory allows hands free jacking.

P/N 12-02847 ..... $9.75

JACKCLAMP ACCESSORY KIT

The JackClamp Accessory Kit includes the Spreader Jaw, V-Jaw, and Foot accessories for the JackClamp. The Spreader Jaw allows even more flexibility with the JackClamp including spreading materials with a gap as small as 1/4". The V-Jaw secures clamping and can hold round stock or irregular shapes. The Foot accessory allows for hands free jacking and works great for cabinet installation.

Note: JackClamp Accessory Kit includes the Spreader Jaw (1 pair), V-Jaw (1 pair), and Foot (1) accessories for the JackClamp Parallel Bar Clamp. P/N 12-02853 ..... $41.95

EASY OUT SCREW EXTRACTORS

Black Max spiral screw extractor grips screw firmly with its tapered, left-handed spiralflutes. Intended to remove screw manually with T-handle tap wrench or equivalent. Features: • Black oxide coating for maximum corrosion protection and cutting performance • Black oxide coating combined with a tough carbon tool steel construction ensures longer life • Extractor size is permanently etched on the tool for quick and easy reference. Specifications • To remove Bolts/Screws: 3/32" to 5/32" • Use Drill Bit Size: 5/64" • Shank Diameter: 1/8" • Point Diameter: 0.060"

Description	Part No.	Price
3/32" TO 5/32"	12-02873	$2.45
5/32" TO 7/32"	12-02874	$2.45
7/32" TO 9/32"	12-02875	$2.29
9/32" TO 3/8"AND 1/8" PIPE	12-02876	$2.89
3/8" TO 5/8"AND 1/4" PIPE	12-02877	$3.45
5 PIECE SET	12-02882	$10.95

RYOBI PLANER

The Ryobi cordless Hand Planer has the power of a corded hand planer when powers through the toughest jobs. The rear mounted "kickstand" keeps blades from contacting surfaces when the unit is placed shoe down between operations. The pommel front handle and rear handle designed with overmold for added comfort. Dust ejection adjusts for left or right exhaust. All these great features are a part of the Ryobi ONE+™ system which has have 40 tools and batteries. Depth adjustment knob adjusts from 0-1/64". Dual carbide blades for smooth, accurate planning. Rear mounted "kickstand" keeps blades from contacting a surface when the planner is set down between aperations. Extended front for balance and accuracy. MFG Brand Name : Ryobi. MFG Model # : P610. MFG Part # : P610

18 V Planer ..... P/N 12-02824 ..... $100.00
BI P100 ONE+ Nickel-Cadium 18-V Rechargable Battery
P/N 12-02825 ..... $57.25
P131 ONE+ 18-V IN-Vehicle Charger ..... P/N 12-02826 ..... $57.25

RYOBI PLANER KIT

Kit includes:

(1) 18 Volt Planer - The Ryobi cordless Hand Planer has the power of a corded hand planer when powers through the toughest jobs. The rear mounted "kickstand" keeps blades from contacting surfaces when the unit is placed shoe down between operations. The pommel front handle and rear handle designed with overmold for added comfort. Dust ejection adjusts for left or right exhaust. All these great features are a part of the Ryobi ONE+™ system which has have 40 tools and batteries.

(1) P100 ONE+ Nickel-Cadmium 18-Volt Rechargable Battery - The Ryobi ONE+ Nickel-Cadmium 18-Volt Rechargeable Battery provides extended run-time and works with all present and past Ryobi 18-volt ONE+ tools and chargers.

(1) P131 ONE+ 18-Volt In-Vehicle Charger - The Ryobi ONE+ 18-Volt In-Vehicle Charger is compatible with all past and present Ryobi 18-volt ONE+ NiCd and lithium-ion batteries. It plugs conveniently into a vehicle's 12-volt DC outlet and takes less than an hour to charge the batteries fully..... P/N 12-02827 ..... $215.95

DECALPRO® KIT

DecalPRO® allows you to do what you have never been able to do before. It's now graphics and text "on demand" from your standard PC or Mac computer with any laser printer and do it all in under 10 minutes.

AIRCRAFT BUILDERS: ...freedom to stylize your main control panel any way you wish using any font, size and color right from your home computer before the panel is installed.

Also great for Avionics Shops and Upholstery Shops.

Description	Part No.	Price
Decalpro Kit	12-03204	$89.95
Accessories	Part No.	Price
Carrier TRF Packs	12-03209	$8.95
Toner Transfer Paper (TTP)Pack	12-03207	$14.95
Pigment Foils White	12-03210	$8.95
Pigment Foils Gray	12-03211	$8.95
Pigment Foils Black	12-03212	$8.95
Specialty Foils Clear Coat	12-03213	$8.95

TO

MICROMETERS

ELECTRONIC MICROMETER

Quick, accurate, easy-to-use and coolant, water and oil resistant to IP54 standards, Fowler's Electronic IP54 Outside Micrometers offer the same features as Fowler's standard electronic micrometers, but are robust enough to perform in situations where regular electronic micrometers fail. P/N 12-03414.....$106.40

ELECTRONIC MICROMETERS

P/N 12-03410 P/N 12-03411 P/N 12-03412

Quick, accurate, easy-to-use and coolant, water and oil resistant to IP54 standards, Fowler's Electronic IP54 Outside Micrometers offer the same features as Fowler's standard electronic micrometers, but are robust enough to perform in situations where regular electronic micrometers fail.

Description	Part No.	Price
2-3" Ip54 54-860-003-1	12-03410	$134.40
3-4" Ip54 54-860-004-1	12-03411	$156.80
1-2" Water Resistant 54-860-002-0	12-03412	$123.20

ELECTRONIC OUTSIDE MICROMETER SET

Quick, accurate, easy-to-use and coolant, water and oil resistant to IP54 standards, Fowler's Electronic IP54 Outside Micrometers offer the same features as Fowler's standard electronic micrometers, but are robust enough to perform in situations where regular electronic micrometers fail. P/N 12-03413.....$369.75

MARK VI ELECTRONIC INDICATOR

0-1"/25mm Mark VI Electronic Indicator.
P/N 12-03420.....$675.00

MARK VI ANALOG ELECTRONIC INDICATOR

0-.500"/12.5mm Mark VI Electronic Indicator with Analog Display. P/N 12-03424.....$595.00

MARK VI ELECTRONIC MICROMETER

0-.500"/12.5mm Mark VI Electronic Indicator, 8mm stem model. P/N 12-03425.....$648.32

ADJUSTABLE MICROMETER STAND

A compact, well-constructed, folding micrometer stand with a unique locking mechanism that positions the micrometer over a 180° range for perfect use and viewing.
P/N 12-03423..... $33.05

ELECTRONIC XTENDER

The industries two most popular bore gage ranges combined in one easy-to-use ELECTRONIC set! All the same benefits included in the X-Tender Dial Bore Gage are now available with an electronic indicator providing inch/metric reading capability, preset size of master for absolute reading and minimum hold feature to lock on the bore size as the gauge is rocked in the part to be measured.
P/N 12-03416.....$299.95

METRIC BORE GAUGE SETTING MASTER

Using the new Fowler Bore Gage Setting Master and the included gage blocks you can now quickly and easily set virtually any bore gage from 0 to 150mm in diameter with an accuracy of .003mm. Gone are the numerous masters formerly required to accurately set your bore gage for use. Now with one setting master kit and the included gage blocks you can set your bore gage with ease. Each Fowler Bore Gage Setting Master Kit includes a bore gage setting master, and a 36 piece gage block set. Both come packaged in a high quality aircraft-style, shop-hardened aluminum case! All packaged in a high quality, shop-hardened aircraft-style aluminum case! Bore Gage shown is not included.
P/N 12-03421.....$295.00

POLY-CAL ELECTRONIC CALIPER

Poly-Cal Electronic Caliper Inch/Metric/Fraction. Range: 6"/150mm. P/N 12-03426..... $24.60

ELECTRONIC CALIPERS

Description	Part No.	Price
Iv 6"/150mm 54-100-330-1	12-03417	$111.95
Iv 12"300mm 54-100-332-0	12-03418	$169.95
Iv 8"/200mm 54-100-331-0	12-03419	$132.50

XTRA-VALUE CAL AND DEPTH ATTACHMENT COMBO

Accuracy: .001"/.02mm. Range: 6"/150mm. Large east to read display. Resolution: .0005"/.01mm. Direct inch/metric conversion. Absolute/incremental measurement. 4-way measuring
P/N 12-03427..... $79.75

SHOCKPROOF DIAL CALIPER AND DEPTH ATTACHMENT COMBO

Tough shockproof design. 4-way measuring. Solid stainless steel construction. Silky-smooth movement throughout. 100" range per revolution. .001" reading dial face. P/N 12-03409.....$103.95

MASTER BORE GAGE SET

Setting Bore gages is a breeze with Fowler's new Bore Gage Setting Master Kit! Using the new Fowler Bore Gage Setting Master and the included gage blocks you can now quickly and easily set virtually any bore gage from 0 to 6" in diameter with an accuracy of .0001". Gone are the numerous masters formerly required to accurately set your bore gage for use. Now with one setting master kit and the included gage blocks you can set your bore gage with ease. Each Fowler Bore Gage Setting Master Kit includes a bore gage setting master, and a 36 piece gage block set. Both come packaged in a high quality aircraft-style, shop-hardened aluminum case! All packaged in a high quality, shop-hardened aircraft-style aluminum case! Bore Gage shown is not included.
P/N 12-03408.....$275.00

TO

AIRCRAFT BUILDER CALIPERS

Our Aircraft Builder's Calipers feature an easy-to-read dial, 6" length capacity, and measurement in 4 dimensions outer, inner, depth, and step. The dial has .001" graduations for case and bullet measurements. A chart that shows maximum and trim lengths for all popular calipers, plus a fitted case with instructions, are included. Ideal measurement tool for aircraft mechanics and homebuilders. Available in plastic or stainless steel. Plastic Calipers ..... P/N 12-30215 ..... $57.95
Stainless Steel Calipers ..... P/N 12-30220 ..... $61.75

DIGITAL FRACTION CALIPERS

The Digital Fractional Caliper brings you three universal systems of measurement, making it an equally practical choice for both professional and do-it-yourself projects. The high-contrast digital display easily switches between inches, millimeters and fractions, with guaranteed accuracy to 0.001". In addition, the rugged stainless steel design delivers accurate readings of inside, outside, step and depth measurements. The Fraction+ comes with a foam padded plastic case for safe storage when not in use. Features * Stainless Steel Caliper. * Tri-Mode digital display – inches, millimeters, and fractions. * For making inside, outside, depth and step measurements. * Resolution 0.0005" (0.01mm). * Accuracy 0.001" (0.02mm). * Auto on/off feature preserves battery life. * Bar scale is graduated in inches and millimeters. * Free-wheeling friction roller advances and retracts slide. * Extendable depth gage for use in slots and small holes. * Etched and filled black graduations. * Convenient foam-padded case for storage.

Digital Fraction Caliper - 6" ..... P/N 12-02012 ..... $39.50
Digital Fraction Caliper - 8" ..... P/N 12-02013 ..... $52.75
Digital Fraction Caliper - 12" ..... P/N 12-02014 ..... $79.95

FRACTIONAL DIGITAL CALIPER 3 INCH

Three universal systems of measurement-Guaranteed accuracy to 0.001". Delivers accurate readings of inside, outside, step and depth measurements. This 3" caliper fits conveniently into your pocket for working in the field. Range 0-3" (0-76mm) Resolution 0.0005" (0.01mm or 1/64"). Accuracy 0.001" (+/- 0.02mm). Auto on/off feature preserves battery life.Free-wheeling friction roller advances and retracts slide. Extendable depth gage for use in slots and small holes. Replacement Battery - SR54 or LR54 P/N 12-02307.....$16.75

DIGITAL CALIPER

0-6" Digital caliper with measuring resolution of .0005"; large LCD display and hardened stainless steel measuring faces and slide. Masures in inches or milimeters. Includes plastic case.
P/N 12-02708.....$29.95

DIAL INDICATOR

0-1" Dial indicator with measuring resolution of .001"; equipped with mounting lug on back of body for multiple mounting options. P/N 12-02709.....$24.95

STANDARD AND METRIC DIAL INDICATOR

AGD 2 series. Dial face reads in inch (black) or metric (red). Range: 1"/25mm. Graduation: .001"/.01mm. Reading: 0—100. Separated dial for Inch and Metric. Rotating bezel with clamp. Lugback included.
P/N 12-03659.....$79.95

PROFESSIONAL GRADE MICROMETER

0-1" Professional grade micrometer with measuring resolution of .0001"; carbide anvil faces for long life and durability. Includes plastic case.
P/N 12-02707.....$39.95

DIGITAL SLIDING T-BEVEL

Takes the guesswork out of angle duplication and eliminates the problems associated with analog readings and manual measurement transfer. This is the first and only digital T-bevel on the market. It is ideal for measuring, storing and transferring inside and outside angles when building cabinetry, furniture and picture frames; installing tile and more. This highly accurate tool offers easy-to-read measurements via a large LCD display and integrates an 8" stainless steel blade with a steel locking knob. Practical function buttons make it ultra-convenient for setting and transferring measurements instantly.
P/N 12-03226.....$29.75

OFFSET KNOCKOUT PUNCHES (WITCHES FINGER)

Can be used to knock out those hard to reach stubborn fasteners. Available in 1/8", 5/32", 3/16", and 1/4" tip diameter. Also available in a 4 piece set.

Size	Part No.	Price
1/8"	12-02927	$13.95
5/32"	12-02926	$13.95
3/16"	12-02928	$13.95
1/4"	12-02929	$13.95
Set of 4	12-02925	$55.95

"CENTER IT" HOLE DRILLING JIG

"Center It" is a jig used to drill holes in pipe or tube stock. To use the Center It, simply place it on your drill-press table, run the bit down (with the motor off) to hold the centered jig on the bit, then bolt the jig to the press table. No clamping of the tube is necessary; the angled flats of the jig hold it in a centered position. Your holes are automatically centered on the tube with no center-punching necessary. If the tube is too fat to drill in a single operation, simply turn it over. The device is useful to kitplane builders who have to drill several holes in a single tube or many tubes because no clamping or center-punching of the tube is required. It also makes short work of drilling. P/N 12-20815.....$13.85

DRILL RITE PRECISION DRILL GUIDE

Light and portable, this tool provides straight and true holes every time. Your electric hand drill will perform like a professional drill press. The easy, accurate way to drill any curved surface: Simply place the Drill Rite VGuide™ on any type of pipe or round stock, from 1/2" to 2 1/2" in diameter. Swing the gate closed and lock it down. Insert the proper drill bit in the guide bushing and drill a precisely accurate hole. Includes super hardened drill bushings for popular 3/16" and 1/4" holes for rivets and aircraft hardware. Precision made in the U.S.A. from high quality aircraft grade aluminum. P/N 12-00836. .....$59.75

PLATE NUT DRILL JIG

One piece heat treated tool steel jig. Use for accurate & fast drilling of rivet holes for plate nuts. Has flexible handle design. Use for both on lug (both holes on 1 side) & two lug (holes on both sides) style nut plates - K1000 & K1100 style nutplates.

#6 Plate Nut Drill Jig..... P/N 12-03041 ..... $46.55
#8 Plate Nut Drill Jig..... P/N 12-03042 ..... $46.50
#10 Plate Nut Drill Jig ..... P/N 12-03043 ..... $46.50

DIGITAL PRECISION PROTRACTOR

Displays absolute and relative angle measurements in a large, easy-to-read LCD window. This display offers a hold function and can be inverted 180° for easy reading when the tool is upside down. It features a 6" (150mm) stainless steel pivoting protractor arm with a knurled locking nut and one-button zero calibration, which ensures accurate readings every time. Take the guesswork out of measuring, marking and reading angles on your next woodworking or home improvement project. The UltraTECH Pro-ANGLE Digital Protractor displays absolute and relative angle measurements in a large, easy-to-read LCD window. For user convenience and comfort, the display offers a hold function and is easily inverted, or flipped, 180 degrees for reading upside down. Angles in any plane can be measured with accuracy to 0.1 degree and 0.05 degree resolution anywhere within a 0.00 to 180 degree range, making this tool useful for many applications. P/N 12-03224.....$24.85

DIGITAL ANGLE FINDERS

These new angle finders combine the ruggedness of analog rulers (standard and metric) together with the digital technology needed for complete accuracy when measuring inside, outside and reverse angles. Precise measurements prevent waste by facilitating exact miter cuts. One button activates the reverse angle function, a hold button digitally saves the measurement and the large ergonomic locking knob saves the angle manually. A big LCD readout makes measurements extremely easy to read while an innovative center check notch enables exact ruler placement marking. The Models 822 (Patent Pending) are ideal for framing, custom furniture-building, stair and patio construction, flooring, tiling basically all woodworking, carpentry and contractor needs in the shop or in the field.

5 inch ..... P/N 12-03223 ..... $24.90
10 inch..... P/N 12-03222 ..... $33.50

TO

HAND RIVET SQUEEZER

Features includes an all-steel construction, adjustable set holder (accepts all sets with 3/16" shank), and long handles for increased force. The yoke is made of the highest quality tool steel, and by simply removing 3 pins you can change the yoke to match your riveting or dimpling application. Each squeezer includes the yoke of the coordinating size

Description	Part No.	Price	Description	Part No.	Price
1" Squeezer	12-01460	$72.85	1" Yoke	12-01457	$23.50
2" Squeezer	12-01461	$74.75	2" Yoke	12-01458	$24.50
3" Squeezer	12-01462	$77.85	3" Yoke	12-01459	$26.60

STAINLESS STEEL HAND SQUEEZER

This stainless steel hand squeeze made of quality stainless steel construction. Features include an adjustable set holder (accepts all sets and dies with 3/16" shank) and a locking lever arm. Yokes are easily interchangeable by simply removing three roll pins and designed to accept yokes and parts made by other stainless steel hand squeeze manufacturers. Includes a 3" Yoke. 1.5" is sold separately.

S/S Hand Squeeser 3" ..... P/N 12-01464 ..... $129.00
1.5" Yoke ..... P/N 12-01547 ..... $49.85
3" Yoke ..... P/N 12-01548 ..... $61.75

QUICK CHANGE PINS

Quick Change Pin. Makes changing yokes quicker & easier 3/4" ..... P/N 12-01798 ..... $2.15

INTEGRAL WHOLE TYPE HAND SQUEEZER

A basic tool for all riveting operations. Quality steel construction with black oxide finish and all parts are heat treated. Adjustable set holder accepts dies and sets with 3/16" shank. 1-1/2" reach x 1-1/2" gap.

1-1/2" ..... P/N 12-01465 ..... $68.50

RIVET SET FOR SQUEEZER

(FLUSH & CUPPED) - Made of steel and heat-treated for long wear and tool life. .187" (3/16") shank. *2 Flush sets required for Flush Head Rivets. 1 Flush and 1 Cup required for Round Head Rivets. *Sold as individual items / not a pair

Description	Part No.	Price
Flush 1/8	12-01466	$2.35
Flush 3/16	12-01554	$1.95
Flush 5/16	12-01556	$1.95
Flush 3/8	12-01557	$1.95
Flush 7/16	12-01558	$1.71

Descriptipn	Part No.	Price
Flush 1/2	12-01559	$1.95
Cupped 1/8	12-01561	$2.53
Cupped 5/32	12-01562	$2.65
Cupped 3/16	12-01563	$2.65

1-1/2" AND 3 YOKES

• Holds 3/16" die sets • Adjustable set holder • Stainless steel construction.

1-1/2" ..... P/N 12-01547 ..... $49.85
3" ..... P/N 12-01548 ..... $61.75

DIMPLE DIES

For any .187 shank diameter squeezer.

3/32" ..... P/N 12-01468 ..... $12.55
1/8" ..... P/N 12-01564 ..... $12.65
5/32" ..... P/N 12-01565 ..... $12.65
3/16" ..... P/N 12-01566 ..... $12.70

Economy Dimple Die Set Includes: 3/32", 1/8", 5/32", 3/16"
P/N 12-01467 ..... $49.85

SCREW REMOVAL TOOL

*Useful in removing screws that are corroded or have stripped heads *401 Parker taper shank for use in rivet gun *3/8" square socket end *Use standard Phillips or Slotted insert bits *Rivet gun required *1/4" hex adapter not included

4" Tool ..... P/N 12-01567 ..... $18.95

MICRO-STOP

This tool permits you to set the desired cut depth to help eliminate mistakes and skin damage. • 1/4" Shaft travel • Depth adjustable in .001" increments • 1/4"-28 Female Threads • Rated for 3,000 RPM

P/N 12-01470 ..... $21.50

HEAVY DUTY RIVET CUTTER

This high quality, durable rivet cutter features all steel construction and cuts 1/16" to 1/4" diameter rivets. It is adjustable for 1/4" to 3/4" long rivets.

P/N 12-01471 ..... $41.90

ECONOMY RIVET SET

2.5" Straight & Offset Rivet. Made of steel and heat-treated for long tool life. The precision made cups are highly polished. • .401 shank • Length: 2.5" • Cup Sizes: 3/32", 1/8", 5/32" & 3/16" • For AN470 rivets

2.5" Straight 3/32" ..... P/N 12-02318 ..... $6.80
2.5" Straight 1/8" ..... P/N 12-02319 ..... $6.50
2.5" Straight 5/32" ..... P/N 12-02320 ..... $6.80
2.5" Straight 3/16" ..... P/N 12-02321 ..... $6.80

ALUMINUM BODY MINI AIR VACUUM

A handy air powered vacuum works off an air compressor and is simple to use. Attached 12" clear plasticflex tube can easily get into tiny spaces to clean. The canvas bag is easily removed for cleaning. P/N 12-01474 ..... $17.50

CHIP CHASER

Ideal for removing chips and burrs from between metal after drilling rivet holes. Each chaser features a plastic molded handle and flexible steel blade with hook on the end. Blades are 5.5"and 2.5" long.

2.5" ..... P/N 12-01597 ..... $2.85
5.5" ..... P/N 12-01476 ..... $3.25

DOGLEG DEBURRING TOOL

Swivel action of this tool makes deburring holes fast and easy. Shaft includes a 1/4"-28 threaded holder.

*Flute De-burring cutter sold separately - PN 12-00625 ..... P/N 12-01478 ..... $12.75

Accessories

Swivel Handle Only ..... P/N 12-00623 ..... $17.75
Extension Shaft only ..... P/N 12-00624 ..... $8.50
HSS 3 Flute De-burring cutter ..... P/N 12-00625 ..... $18.95

CLECO PLIERS

Used in limited access areas, requires less travel per activation. P/N 12-01480 ..... $5.95

SPRING TENSION CLAMPS

(ZINC ALLOY YOKE OR STEEL YOKE)

Spring tension clamps can be applied in a fraction of the time required for ordinary screw clamps. The clamp, with 2" throat depth, has a Zamak alloy yoke and a steel spring which provides a 70 lb. clamping pressure. Designed for use with sheet holder pliers.

Description	Part No.	Price
Zine Alloy	12-01481	$4.60
Steel 2"	12-01482	$6.30
Steel 3"	12-01483	$6.95

SIDE GRIP CLAMPS

Designed to hold two or more work pieces together where no holes exist. Clamping force is applied at edge of work. Spring loaded, plier actuated. The lack of a takeup screw makes it impossible to overtighten and damage the work surfaces or the clamp. There are 4 standard sizes : 1/2 x 1/2", 1/2 x 1", 3/4 x 1/2" , 3/4 x 1".

Description	Part No.	Price
1/2" x 1/2"	12-01484	$1.85
1/2" x 1"	12-01485	$1.95
3/4" x 1/2"	12-01486	$1.85
3/4" x 1"	12-01487	$1.95

DRILL STOPS

Use when drilling in sheet metal to help eliminate drill breakage & surface marks. Safely keeps drill from going too far through the work. Drill stops have a coiled spring to cushion the drill breakthrough & prevents the drill chuck from marring the work surface. Color coded for easy identification.

#10 ..... P/N 12-01488 ..... $0.95 #20 ..... P/N 12-01489 ..... $0.95
#30 ..... P/N 12-01490 ..... $0.95 #40 ..... P/N 12-01491 ..... $0.95
#1/4 ..... P/N 12-01492 ..... $1.15 #5/16 ..... P/N 12-01493 ..... $0.95

CYLINDER BASE NUT WRENCHES

Where torque application accuracy is critical these tools meet the requirement. They offer excellent rigidity and surpass other wrenches in overall quality and efficiency. Wrench Type A is for sizes 1/2", 9/16", 5/8", and 3/4" hex nuts. Also available in a kit.

Type A 1/2" ..... P/N 12-01525 ..... $14.85
Type A 9/16: ..... P/N 12-01568 ..... $14.85
Type A 5/8" ..... P/N 12-01569 ..... $14.85
Cylinder Base Nut Wrench Set ..... P/N 12-02302 ..... $44.50

TO

ECONOMY AIRCRAFT TOOLS

STRAP DUPLICATOR (BUSHING TYPE)

For drilling an accurate hole in overlapping sheets. The Bushing type duplicator is used by sliding the end with the pin between the sheets and locating the hole to be duplicated from inside. P/N 12-01498 is pictured.

Description	Part No.	Price	Description	Part No.	Price
#10 6-1/4"	12-01494	$6.85	#10 13-1/4"	12-01499	$7.75
#20 6-1/4"	12-01495	$6.85	#20 13-1/4	12-01501	$7.75
#30 6-1/4"	12-01496	$6.85	#30 13-1/4	12-01502	$7.75
#40 6-1/4"	12-01497	$6.85	#40 13-1/4	12-01503	$7.75
1/4" 6-1/4"	12-01498	$6.85	1/4" 13-1/4	12-01504	$7.75

STRAP DUPLICATOR (INVERTED TYPE)

For drilling an accurate hole in overlapping sheets. The inverted type duplicator allows you to locate a hole from the back of an overlaping sheet. #10 #21 #30 #40 1/4" drill sizes, 6-1/4" or 13-1/4". PN 12-01507 is pictured.

Description	Part No.	Price	Description	Part No.	Price
#10 6-1/4"	12-01505	$6.85	#10 13-1/4"	12-01510	$6.10
#20 6-1/4"	12-01506	$6.85	#20 13-1/4"	12-01511	$9.85
#30 6-1/4"	12-01507	$6.85	#30 13-1/4"	12-01512	$7.60
#40 6-1/4"	12-01508	$6.85	#40 13-1/4"	12-01513	$9.85
1/4" 6-1/4"	12-01509	$6.85	1/4" 13-1/4"	12-01514	$8.65

ECONOMY BLIND HOLE SPOTTERS

For inserting into drilled holes already bored and marking exact center for opposite hole. Available size: 5/16", 1/4", 3/16", 5/32" and 1/8"

Description	Part No.	Price
5/16"	12-01775	$1.35
1/4"	12-01774	$1.30
3/16"	12-01773	$1.30

Description	Part No.	Price
1/8"	12-01771	$1.30

EDGE BREAKER

This tool allows the quick removal of burrs and roughness from the edges of sheet metal. .25" or .187" in diameter grooved blade with safety shield. Safety-grip plastic handle. P/N 12-01527 .....$9.50

AIR SWIVELS & REGULATOR TOOLS

Air Swivel Connector W/ Regulator (Pictured to the left).....P/N 12-01530 .....$11.50
Air Swivel Connector .....P/N 12-01529 .....$9.95
Air Swivel Regulator.....P/N 12-01545 .....$6.36

BRASS RIVET SET

This rivet set has a soft face to prevent damage to the fastener when inserted or removed. Fits into any standard rivet gun or air hammer that supports .401" shank tooling, 3 1/8" overall length..... P/N 12-01543 .....$8.90

RIVET GUN SHAFT REDUCER

Rivet set adapter sleeve, .401 shank. Made of hardened steel (SKD11) and is open at both ends to allow maximum riveting power. P/N 12-01544..... $14.90

ECONOMY SAFETY WIRE TWISTERS

These top quality twisting lock pliers with automatic return are economically priced and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire. Length 6"& 9". Foreign made.
6".....P/N 12-01472 ..... $19.90
12".....P/N 12-01473 ..... $19.75

CAMLOC PLIERS

These Camloc Pliers are used to depress #2600, #2700 and #4000 series Camloc (C-LOCK) studs so they can be properly installed. Pliers are manufactured from forged steel and feature polished bearing surfaces to avoid scratching the stud as it 's being installed. The grips are rubber cushioned for extra comfort and to reduce slipping. P/N 12-01475.....$16.75

CANNON CONNECTOR PLIERS

The tool features serrated jaws for improved gripping and a slip joint for improved leverage. Ideal for all common cannon connector applications.
P/N 12-01531 .....$15.70

SHOP HEAD RIVET GAUGE SET

Set of four gauges for -3, -4, -5, -6 rivets. Each gauge measures Minimum height and Minimum diameter of shop heads AFTER setting. Eliminates guessing if your rivets are properly set. Works for measuring both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped on each gauge. Color coded anodized finish.
P/N 12-01533 .....$9.85

RIVET LENGTH GAUGE

One gauge measure -3, -4, -5, -6 rivets. Used to check for proper length of rivets Before setting. Eliminates measuring and guessing of rivets lengths. Works for both universal head and flush rivets. Precision machined to size from 2024 aluminum. Rivet size permanently stamped. Blue anodized finish. P/N 12-01534 .....$4.95

DRILL EXTENSION THREADED

These are used to extend a straight chuck drill to 1/4-28 female threads.
2".....P/N 12-01535.....$3.75
4".....P/N 12-01536.....$3.75
6".....P/N 12-01537.....$3.75

DRILL EXTENSION DUAL THREADED

Use these different length extensions in your 90°or 45° drills. 1/4"-28 male threads on one end and 1/4"-28 female threads on other.
2" .....P/N 12-01541 ..... $4.35
4" .....P/N 12-01542 ..... $3.85

SLIM MICRO-STOP

A slim design that's only 11/16" outside diameter. Used for those narrow areas that can't be reached with a standard micro-stop. • 1/4" Shaft • 1/4"-28 Female Threads • Adjustable in .001" increments • 1/2" Cutter Capacity • Rates for 3000 RPM use. P/N 12-01790.....$19.50

MICRO-STOP (LONG NOSE)

This micro-stop reaches into very confined areas. • 5/16" Quick-change Shaft or regular chuck • 1/4"-28 Female Threads • Adjustable in .001" increments • 3/8" Cutter Capacity • Rates for 3000 RPM use
P/N 12-01789.....$28.75

MICRO-STOP (NYLON FACE)

• 1/4" Shaft • 1/4" -28 Female Threads • Adjustable in .001" increments • 11/16" Cutter Capacity • Rates for 3000 RPM use P/N 12-01788.....$22.50

5.5" STRAIGHT & OFFSET RIVETS

Made of steel and heat-treated for long tool life. The precision made cups are highly polished. .401 shank. Length: 5.5". Cup Sizes: 3/32", 1/8", 5/32" & 3/16". For AN470 rivets

Size	Straight	Price	Offset	Price
3/32"	12-02326	$7.50	12-02330	$8.25
1/8"	12-02327	$7.50	12-02331	$8.25
5/32"	12-02328	$7.50	12-02332	$7.35
3/16"	12-02329	$7.50	12-02333	$7.35

ALUMINUM & NYLON RIVETS

Nylon

Aluminum

This rivet set has a soft face to prevent damage to the fastener when inserted or removed. Fits into any standard rivet gun or air hammer that supports .401" shank tooling. • Surface: 1" • Length: 3 1/8"
Nylon Rivet .....P/N 12-02342 ..... $8.35
Aluminum Rivet.....P/N 12-02343 ..... $8.75

RADIUS CHECK

Radius Check is a hand-held tool which can be used to check the radius of parts and panels used in the construction or restoration of aircraft. Also used extensively in the restoration of antique and classic automobiles. P/N 12-21595 .....$35.85

RADIUS OR FILLET GAUGES

16 leaves, especially for checking radius of inside and outside fillets and corners. Checks 1/32 to 17/64" by 64ths.
P/N 432A.....$26.50

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

ECONOMY AIRCRAFT TOOLS

ECONOMY RIVET GUNS

These popular 2X /3X /4X rivet guns used in aircraft manufacturing plants worldwide. "X" series rivet gun has an incomparable teasing triggers, allowing you to slowly begin riveting without damaging the skin. A lightweight aluminum handle with powder coat finish for comfort. Hardened & precision ground steel piston, cylinder, spool valve for long life. Includes spring retainer & brass air regulator.

Length	BPM	Capacity	Bore	Shank	Stroke	Weight (lbs)	Part No.	Price
6-11/16"	2580	1/8"	1/2"	.401"	2-1/4"	3.1	12-02034	$127.95
7-5/16"	2160	3/16"	1/2"	.401"	2-7/8"	3.2	12-02035	$136.95
8-1/2"	1740	1/4"	1/2"	.401"	3-1/16"	3.4	12-02036	$137.95

ECONOMY FLUTING PLIERS

Narrow type fluting pliers are used for straightening out or coaxing sheet metal into the correct shape. This tool makes narrow and precise flutes in sheet metal. P/N 12-01782 ..... $16.75

RIVET HOLDER

This tool holds your rivet, small bolt, or screw so you can get into those hard-to-reach areas. .....
P/N 12-01791 ..... $6.85

RIVET ECONOMY COLLAR CUTTER

se with your rivet gun to easily remove Huck and Hi-Lok type collars. Shank: 0.401 Size includes 1/8", 5/32", 3/16" & 1/4" Overall Length: 5 1/2"

1/8 ..... P/N 12-02275 ..... $15.95
5/32 ..... P/N 12-02276 ..... $15.95
3/16 ..... P/N 12-02277 ..... $15.95
1/4 ..... P/N 12-02278 ..... $15.95

ECONOMY FLUSH SET

5.5" & 7.5" Flush Set Made of steel and heat-treated for long tool life. Faces are polished to a high luster for smooth, precise riveting. .401 shank Surface: 1" Length: 5.5" & 7.5"

5.5:" ..... P/N 12-02273 ..... $12.85
7.5" ..... P/N 12-02274 ..... $15.75

JIFFY RIVET SETTERS

ECONOMY JIFFY STRAIGHT RIVET SETTER - For use with "Jiffy" style rivet gun. Made of steel and heat-treated for long tool life. The precision made cups and highly polished. 401 shank, Length: 1-3/16", Cup Sizes: 3/32", 1/8", 5/32" & 3/16", For AN470 rivets

3/32" x 1-3/16" ..... P/N 12-02381 ..... $5.95
1/8" x 1-3/16" ..... P/N 12-02382 ..... $5.95
5/32" x 1-3/16" ..... P/N 12-02383 ..... $5.95
3/16" x 1-3/16" ..... P/N 12-02385 ..... $5.95

ECONOMY JIFFY OFFET RIVET SETTER - For use with "Jiffy" style rivet guns. Made of steel and heat-treated for long tool life. The precision made cups are highly polished. 401 shank, Length: 1-3/4", Cup Sizes: 3/32", 1/8", 5/32" & 3/16", For AN470 rivets

3/32" x 1-3/4" ..... P/N 12-02387 ..... $6.45
1/8" x 1-3/4" ..... P/N 12-02388 ..... $6.45
5/32" x 1-3/4" ..... P/N 12-02389 ..... $6.45
3/16" x 1-3/4" ..... P/N 12-02390 ..... $6.45

ECONOMY RIVET GUN PUNCH - For use to remove rivet after collar is split. Made of steel and heat-treated for long tool life. 401 shank, Length: 3-1/2", Punch size includes: 3/32", 1/8", 5/32" & 3/16" & 1/4"

3-1/2" x 1/8" ..... P/N 12-02392 ..... $6.95
3-1/2" x 5/32" ..... P/N 12-02393 ..... $6.95
3-1/2" x 3/16" ..... P/N 12-02394 ..... $6.95
3-1/2" x 1/4" ..... P/N 12-02395 ..... $6.95

ECONOMY JIFFY FLUSH RIVET SETTER - For use with "Jiffy" style rivet gun, polished flush surface Length: 1-3/16", For AN470 Rivets
P/N 12-02386 ..... $5.85

QUICK-CHANGE CHUCK

Allows tool change in seconds. Designed for drilling bits, countersinks, etc. with quick-change ends. 3/8" x 24 thread. P/N 12-01778 ..... $15.00

C-SET

This C-Rivet Set bends around obstacles and allows you to reach into awkward areas for riveting. • 3/16" diameter hole for any squeezer sets or dimple dies with 3/16" shaft • 401 shaft P/N 12-01776 ..... $28.75

RED BOX RIVET GUN TOOL KITS

RED BOX RIVET GUN TOOL KITS

* 1pc Rivet Gun (Choose Size 2X, 3X or 4X) * 1pc Brass Regulator * 1pc Beehive Retainer * 1pc Handi Retainer * 4pcs 3.5" Straight Rivet Set (3/32", 1/8" 5/32", 3/16") * 1pc Standard Flush Set (size: surface diameter 1", length 2-1/2") * 1pc Marvel Air Tool Oil (Made in USA) * 1pc Thread Seal Tape * 1pc Air Tool Fitting

2X Rivet Gun Tool Kit ..... P/N 12-02047 ..... $196.00
3X Rivet Gun Tool Kit ..... P/N 12-02048 ..... $189.00
4X Rivet Gun Tool Kit ..... P/N 12-02049 ..... $189.00

RED BOX FLUSH RIVET SET

P/N 12-02050 ..... $7.70

RED BOX 3.5" RIVET SET

Size	Straight	Price	Offset	Price
3/32"	12-02051	$5.65	12-02322	$6.70
1/8"	12-02052	$6.50	12-02323	$6.50
5/32"	12-02053	$5.65	12-02324	$6.70
3/16"	12-02054	$5.65	12-02325	$5.85

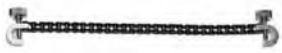
RED BOX 7.5" RIVET SET

Size	Straight	Price	Offset	Price
3/32"	12-02334	$7.90	12-02338	$8.85
1/8"	12-02335	$8.65	12-02339	$7.85
5/32"	12-02336	$8.50	12-02340	$7.85
3/16"	12-02337	$8.50	12-02341	$7.85

TURNBUCKLE WRENCH

2 inch diameter turnbuckle wrench easily rotates turnbuckle while chain tool holds the cable ends in precise alignment and prevents them from rotating.
P/N 12-01795 ..... $28.75

TURNBUCKLE CHAIN TOOL



This tool consists of two clamps joined by sprocket type (bicycle) chain. When clamped to cable and fittings at each side of the turnbuckle, anchor the cable to allow free adjustment of the turnbuckle. The adjustment becomes a two hand instead of three hand adjustment. P/N 12-01794 ..... $25.75

SPEED HANDLE 3/8"

Useful for quickly tightening and loosening a nut or bolt particularly where other types of wrenches will not reach. P/N 12-01797 ..... $7.70

PHENOLIC SCRAPER

Scraper Blade, 2" wide x 6.5" long x 3/8" thick. Designed for use with a rivet gun (.401 shank). Phenolic scrapers are perfect for safely removing sealant, adhesives, stickers, labels, grime, and more. P/N 12-01796 ..... $11.95

SKIN WEDGE

Made of 4130 steel and heat-treated to perfection. • 7" long x 1" wide • Body thickness 1/4"
P/N 12-01793 ..... $9.85

HEX KEYS

Designed to use when installing Hi-Lok style fasteners. Includes set screw and Allen key.

1/8" ..... P/N 12-01785 ..... $6.75
5/64" ..... P/N 12-01786 ..... $6.75
3/32" ..... P/N 12-01787 ..... $6.75

ECONOMY DRILL EXTENSION THREADED

Has a 5/16" quick change shaft on one hand and 1/4" -28 female threads on the other. Allows you to chuck threaded drill bits or countersinks into a quick-change chuck. .....P/N 12-01781 ..... $6.25

60° C-SET

Excellent for limited access areas. • 60° Angle • .401 shaft P/N 12-01777 ..... $28.75

FORD WRENCH

• General-purose adjustable wrench • Sliding Jaw • Forged from Crescent special Analysis Tool Steel • Chrome-plated • Precision Machined

11" Wrench ..... P/N 12-01784 ..... $25.50

SEALANT MIXER

Designed to quickly and efficiently mix all types of pre-filled Semkit® packages. Has a 1/4' shank. Chuck it up in your drill to mix Semkit® sealant tubes.
P/N 12-01792 ..... $16.85

TO

ATS AIR NIBBLER

ATS8300
• Cuts up to 16 ga (.060" / 15 mm) steel or aluminum
• Easily replaceable punch and die
• Weight 1.74 lbs (.79 kg)
P/N 12-01414 ..... $79.96

ATS PUNCH & FLANGING TOOLS

ATS8400
• Capacity 16ga (.060"/15mm) steel
• Punch Diameter 3/16" (5 mm)
• Flange width 1/2" (12 mm)
• Rubber comfort grip
• 9-3/4" (248 mm) Overall Length
• 2.75 lbs (1.25 kg)
P/N 12-01413. ..... $60.76

ATS AIR POWER RECIPROCATING SAW KIT

ATS8202K
• Cuts up to 16 ga (.060" / 15 mm) steel or aluminum
• .063" (16, mm) Stroke Length
• 10,000 Strokes Per Minute (SPM)
• Weight 2.1 lbs (1.35 kg)
P/N 12-01419 ..... $79.96

ATS 90 DEGREE ANGLE DRILL

ATS6132
• Spindle 1/4"-28 Thread
• Head Length 1.08" (2.7 mm)
• 2,800 RPM
• Head Width .65" (1.6 mm) .33 hp
• 10" (254 mm) Overall Length
• Variable speed control
1.6 lbs (.73 kg)
P/N 12-01422 ..... $207.96

ATS TOOLS

ATS MNI ANGLE DIE GRINDER

ATS5105
• 1/4" (6.4 mm) Collet Size
• 5-1/2" (140 mm) Overall Length
• 1.1 lbs (.5 kg)
• 20,000 RPM Free Speed)
P/N 12-01416. ..... $52.76

ATS MINI DIE GRINDER

ATS5101
• 1/4" (6.4 mm) Collet Size
• Front exhaust keeps work area cleanl
• Very light weight .79 lbs (.36 kg)
• 26,000 RPM Free Speed)
P/N 12-01417 ..... $47.96

ATS 3" CUT-OFF TOOL

ATS8502
• 3" (75 mm) disc capacity, 3/8" (15 mm) mount
• Free speed 20,000 RPM
• Weight 1.74 lbs (.79 kg)
P/N 12-01420 ..... $31.96

ATS AIR HYDRAULIC RIVETER

ATS8805
• Pulling Force 2,300 lbs (1,045 Kg)
• Rivet Capacity 3/16" aluminum or mild steel
• Stroke Length .63" (16 mm)
• Nosepieces: 3/32" (2.4 mm), 1/8" (3.2 mm), 5/32" (4.0 mm), 3/16" (4.8 mm)
• Weight 3.26 lbs (1.48 kg)
P/N 12-01423 ..... $76.76

ATS HEAVY DUTY AIR DRILL

ATS6101
• 3/8" (9.5 mm) Jacobs® Chuck
• Full Cage Gear
• 2,600 RPM
• Variable speed control
• .67 hp (.5 kw)
• Ergonomic Design for Maximum Comfort
• 7-1/2" (190 mm) Overall Length
• 2.07 lbs (.94 kg)
P/N 12-01418. ..... $52.76

ATS HD REVERSIBLE AIR DRILL

ATS6104
• 3/8" (9.5 mm) Jacobs® Chuck
• Full Cage Gear For Smooth Operation
• 2,400 RPM • Variable Speed Control
• Fully Reversible with Positive Stop
• 7-1/2" (190 mm) Overall Length
• .67 hp (.5 kw)
• 2.86 lbs (1.3 kg)
P/N 12-01421 ..... $60.76

ATS PALM DRILL

ATS6100
• 1/4" (6.4 mm) Jacobs® Chuck
• Two-stage (Low/High) Control Trigger
• 5-7/8" (150 mm) Overall Length
• 1.54 lbs (.7 kg)
• 2,800 RPM Free Speed
P/N 12-01424 ..... $79.96

TO

BOSCH POWER TOOLS

BOSCH 10.8V I-DRIVER

MODEL PS10-2A -Features: • 80 in. - lbs. of Torque — Drives 100 3-inch screws per battery charge • Ultra-Compact Head Length — 3.5" total head length - 3 times shorter than most popular competitor • 90-Degree Articulating Head • 7+1 Electronic Clutch • Forward/Reverse Button — Equally useful at driving or removing screws • Quick Change Chuck- pull to insert or release 1/4" hex shank bits • Storage Hanger — Convenient tool storage between uses • Variable Speed Trigger — Revolutionary design provides increased sensitivity and control P/N 12-01754 ..... $159.75

BOSCH 10.8V POCKET DRIVER

MODEL PS20-2 - Features: • 80 in. - lbs. of Torque — Drives 100 3-inch screws per battery charge • Ultra-Compact Power & Design — Almost half the size of a 12V compact drill/driver • LED Light — For tight spaces and applications • Forward/Reverse Button — Equally useful at driving or removing screws • Quick Change Chuck — Prevents bit loss in drill or drive mode - pull to insert or release 1/4" hex shank bits • 10+1 Clutch — Enables precision driving and eliminates over torque in soft base materials. Max mode allows pilot and other small bore holes • Variable Speed Trigger — For increased sensitivity and control P/N 12-01755 ..... $125.95

BOSCH 18V IMPACTOR CORDLESS IMPACT WRENCH

MODEL 22618 - Features: • Innovative Hammer & Anvil System delivers up to 1,950 in/lb of torque 1/2" Square Drive Anvil • Soft-grip handle, not the user, absorbs the impact during fastening applications — Reduces fatigue and stress, provides maximum cushioning and comfort • Cutting-edge, high-performance motor and all-metal gears — Super fast operating speed, delivering a category-best 3,200 BPM and 2,800 RPM • Optional Gear Box Cover — For Added Protection • Lightweight 4.6 pounds and 6.5 inches in length — Incredibly versatile for use in dozens of drilling, fastening and driving applications • Aluminum gear housing with protective rubber front Variable-speed trigger — For complete control • Externally accessible brushes — For easy brush replacement • Multi-purpose reversible tool hook • Multiple-position swivel LED lighting system — Increases visibility - great for dark or enclosed areas P/N 12-01757 ..... $317.95

BOSCH 18V IMPACTOR CORDLESS IMPACT WRENCH

MODEL 22618 - 12V Battery for medium-duty jobs. 14.4V Battery for heavy-duty jobs. The Most Powerful Impact Wrench In The Line Up! 18V Battery for heavy-duty jobs. Faster and more powerful than standard impact drivers. The most lightweight driver in the line up. 9.6V Battery for medium-duty jobs Includes (2) -- 2.4A-h Batteries - BAT181 (1) -- 30 Minute Charger - BC130 (1) -- Tool Hook - IMPKHOOK (1) -- Carrying Case - Included (1) -- Gear Box Cover P/N 12-01758 ..... $306.95

BOSCH 18V LITHIUM-ION JIG SAW

The Lithium-Ion Jig Saw (JSH180-01) is up to 30% lighter weight than the leading competitor and up to 10% smaller. The 1 handed blade insertion and ejection offers most convenience and ease of use while the small grip diameter reduces user fatigue during extended use applications. Includes: (2) 18V Lithium-Ion FatPack Batteries - BAT618, (1) 1-Hour Charger, (1) Carrying Bag. Specifications: Battery/Charger: 1 Hour Charger. Bevel Angle Range: 45 Degrees. Length: 10.24". Max. Capacity in Steel: 3/8". Max. Capacity in Wood: 3 1/2". No Load SPM: 0-2, 700. Stroke Length: 1". Voltage: 18V. Weight (lbs.): 5.3.
P/N 12-02958 ..... $423.00

BOSCH TOP HANDLE JIGSAW

Toolless Blade-Change System – Fast insertion, blade ejection lever eliminates need to touch hot blade. Most secure jigsaw clamping system.
Features: • Powerful 7.0-Amp Jigsaw – Top jigsaw amp rating. • Variable speed - Dial sets maximum speed and accelerator trigger controls operating speed. • Constant Response™ circuitry – Maintains desired speed for consistent performance and precision. • Aluminum gearbox with insulated cover • Toolless Blade-Change System – Fast insertion, blade ejection lever eliminates need to touch hot blade. Most secure jigsaw clamping system. • Internal Precision Control - Precision-machined plunging system and low-vibration design for enhanced accuracy and extremely smooth operation. • Large, sturdy die-cast foot with steel insert and onboard bevel wrench. • Exclusive multi-directional blade clamp provides superior grip of T-shank blades. (JS470E does not accept U-Shank blades) • Four orbital-action settings -Different blade strokes for smooth to aggressive cuts. • Adjustable dust blower keeps cutting line clear. • Ergonomic top handle with soft-grip areas for solid, comfortable grip. • Ambidextrous lock-on button – For steady long cuts and user comfort and control. P/N 12-03215 ..... $175.95

BOSCH TOP HANDLE JIG SAW
5 INCH RANDOM ORBIT SANDER

MODEL NO. ROS20VSK - Features: • Best all-around sanding performance and convenience. • Twist-off translucent dust canister shows dust level and detaches easily. Ant-spillback design prevents dust from spilling on removal. • Bosch Microfilter system traps dust particles as small as 1/2 micron. • Hook-Tight™ hook-and-loop disk attachment ensures firm grip of standard hook-and-loop sanding discs. • Comfortable, ergonomic soft-grip top and body • Integral pad dampening system prevents swirl marks • Soft microcellular backing pad ensures smooth, fine finish on flat or contoured surfaces. • Variable-speed dial allows matching of speed to work piece and task. P/N 12-01766 ..... $99.85

BOSCH 3-1/4 INCH PLANER

MODEL 3365 - Includes: (2) WoodrazorTM Blades, Guide Fence, Blade Wrench, Chip Bag. Features: •Powerful 5 Amp Motor, 18,000 RPM. • Electronically-Counterbalanced Single-Blade System automatically positions blade at ideal cutting angle. • Eliminates uneven planing caused by misaligned blades. • Equipped with Bosch Woodrazor™ micrograin carbide blades, which resist fractures from nail and staple strikes. • Ratcheting Depth Knob. • No need to re-zero the depth. • Chip Ejection Switch. • Edge Guide Fence. • Has a protective shield that covers the section of blade not in use. • Lock-off Release Button. • Park Rest Stand• Double insulated, UL listed, complies to OSHA. P/N 12-01767 ..... $109.95

18V COMPACT TOUGH™ 1/2" DRILL/DRIVER

This drill includes a new ergonomic design for outstanding comfort and durability. The 4-pole open frame motor provides more power in a smaller size and the durashield housing is constructed to withstand jobsite conditions.
Includes: (2) - 18V High Capacity Lithium-ion SlimPack Batteries (1) - Lithium-ion Battery Fast Charger (1) - Double-sided Philips Drive Bit (1) - Carrying Case
Features: • Optional Flexible Power System (FPS™) Provides Choice of Max Run Time or Minimum Weight • Ratcheting Single Sleeve ½ in. Chuck- For one handed bit changes • LED Light- Great for dark or enclosed areas • Soft-Grip Wrapped Housing - Fits comfortably in hand for extended working time • Variable Speed Trigger- Provides maximum control • Bosch Lithium-ion HC batteries - Provides up to 50% more runtime, cold weather performance in -4 deg temps, and fuel gauge • Bosch Advanced Lithium-ion Technology delivers optimized performance through Electronic Cell Protection (ECP™), Unique Pack Design which keeps the battery cooler, and Electronic Motor Protection (EMP™) which protects motor in heavy duty applications. P/N 12-02948 ..... $197.75

BOSCH 4-1/2 INCH ANGLE GRINDER

Features: 6 Amps, 11,000 RPM• Lock-on/off switch — for extended use applications • Service MinderTM brushes — Eliminates guesswork, stops the tool when preventative maintenance is required • Epoxy Coated Field Windings — Provides ultimate protection against abrasive dust and metal debris • 5/8" -11 Spindle — wide flexibility for mounting most popular accessories • Spindle Lock — For quick wheel changes • Double insulated, UL listed, complies to OSHA • 2-Position auxiliary handle — specifically designed and angled to a "natural" position for maximum comfort and control. P/N 12-02685 ..... $169.85

BOSCH 3-1/4 INCH PLANER 120V

Powerful 6.0 amp motor, 16,500 RPM for fast stock removal and a smooth finish. Electronically-counterbalanced, single-blade system automatically positions blade at ideal cutting angle. Reduces drag and provides fast operation and a smooth finish. Eliminates uneven planing caused by misaligned blades. Equipped with Bosch Woodrazor™ micrograin carbide blades. Ratcheting depth knob that allows for fool-proof setting of depth increments from 0" to 1/16" (1.5 mm). Also features an edge guide fence. A protective shield covers the section of blade not in use. Amperage: 6.0. Cord Length: 10'. Country of Origin: Malaysia. No Load RPM: 16,500. Planing Depth: 0 - 1/16" (1.5 mm). Planing Width: 0" to 3-1/4". Rabbet Depth: 5/16". Rating: 120V AC. Shoe Length: 11 - 1/8" P/N 12-02823 ..... $133.75

TO

SUNEX IMPACT WRENCH SX4335

3/8" Impact Wrench SX4335
P/N 12-02610 ..... $221.95

SUNEX IMPACT WRENCH SX4345

1/2" Impact Wrench. 750 ft.lbs. of quiet power. 1100 ft.lbs. of breakaway torque. One hand forward/reverse. Quiet Tech™ exhaust system delivers 82 dBA. Weighs only 4.3 lbs..
P/N 12-02611 ..... $229.95

SUNEX IMPACT WRENCH W/ ANVIL SX4345-2

1/2" Impact Wrench with 2" extended anvil. 750 ft.lbs. of quiet power. 1100 ft.lbs. of breakaway torque. One hand forward/reverse. Quiet Tech™ exhaust system delivers 82 dBA. Weighs only 4.3 lbs.
P/N 12-02612 ..... $239.95

SUNEX IMPACT WRENCH SX4355

3/4" Impact Wrench. 1400 ft.lbs. of quiet power. One hand forward/reverse. Quiet Tech™ exhaust system delivers 90 dBA. Weighs only 7.55 lbs. .....
P/N 12-02613 $515.00

SUNEX AIR RATCHET SX3825

1/4" Air Ratchet. 30 ft. lbs. of quiet power. 84 dBA makes it the quietest in it's class. Weighs only 1.45 lbs.....
P/N 12-02614 ..... $129.99

SUNEX SHORT AIR HAMMER

SX821A Specification	
Blows Per Minute	4,500
Bore (In.)	1-5/8
Stroke (In.)	1-5/8
Air Inlet (NPT)	1/4
Min. Hose Size (I.D.)	3/8
Recommended Air Pressure (PSI)	90
Average Air Consumption (CFM)	4
Sound Level (dBA)	105
Length (In.)	5.5

* Built-in regulator
* Accepts .401" Parker taper shank chisels
* Ideal for standard duty applications
* 3 pc. chisel set included
* Quick change retainer sprping

P/N 12-01934 ..... $50.80

SUNEX 2" ANGLE GRINDER

SXC606 Specification	
Wheel Size (In.)	2
Length (In.)	7.4
Maximum Speed (RPM)	15,000
Air Inlet (In.)	1/4
Minimum Hose Diameter (In.)	3/8
Avg. Air Consumption (CFM)	3
Weight (Lbs.)	1.6

* Durable comfort grip
* 90° angle head for restricted areas
* 360° adjustable rear exhaust directs air away from work
* Built-in speed regulator
* Locking throttle lever for safety
* High-torque motor for maximum efficiency

PN 12-01942 ..... $113.95

SUNEX AIR RATCHET SX3830

3/8" Air Ratchet. 50 ft. lbs. of quiet power. 80 dBA makes it the quietest in it's class. Weighs only 2.7 lbs.
P/N 12-02615 $136.90

SUNEX IMPACT RATCHET SX3835

3/8" Impact Ratchet Wrench. 300 ft. lbs. of quiet power. One hand forward/reverse. Quiet Tech™ exhaust system delivers 79 dBA. Weighs only 2.75 lbs. P/N 12-02616 ..... $230.95

SUNEX 1/4" 0.5HP DIE GRINDER

Sunex HD ®1/4" 0.5hp line of Die Grinders provides all of the durability, features, and power required for today's demanding applications. With the powerful 0.5hp motor, you are given the torque to get through even the toughest material and twice the horse power of the average die grinder. The speed control dial and soft composite handles enhances your ability to complete any job quickly and efficiently. With these top of the line products, you will find all of the features and speed you need to get the job done right the first time. 2 Year Limited Warranty. Weight lbs. (kg): 1.3 (6) P/N 12-03190 ..... $84.80

SUNEX 1/4" 0.5HP ANGLED DIE GRINDER

Sunex HD ®1/4" 0.5hp line of Die Grinders provides all of the durability, features, and power required for today's demanding applications. With the powerful 0.5hp motor, you are given the torque to get through even the toughest material and twice the horse power of the average die grinder. The speed control dial and soft composite handles enhances your ability to complete any job quickly and efficiently. With these top of the line products, you will find all of the features and speed you need to get the job done right the first time. 2 Year Limited Warranty. Weight lbs. (kg): 1.5 (0.7) P/N 12-03192 ..... $113.75

SUNEX 1/4" 0.5HP DIE GRINDER WITH 5" EXTENSION

Sunex HD ®1/4" 0.5hp line of Die Grinders provides all of the durability, features, and power required for today's demanding applications. With the powerful 0.5hp motor, you are given the torque to get through even the toughest material and twice the horse power of the average die grinder. The speed control dial and soft composite handles enhances your ability to complete any job quickly and efficiently. With these top of the line products, you will find all of the features and speed you need to get the job done right the first time. 2 Year Limited Warranty. Weight lbs. (kg): 1.8 (0.8) P/N 12-03191 ..... $103.75

SUNEX 1/4" 1.0HP SUPER DUTY DIE GRINDER

The new Sunex HD ® 1/4" 1.0hp Super Duty Die Grinder has all the durability, features, and power mechanics want in an industrial die grinder. With the powerful 1.0hp motor, you're provided with the torque needed to get through the toughest of materials. The no slip Erickson Industrial Collet, allows you to work efficiently, as it holds your accessories securely without slippage. You would normally pay twice as much for a tool of this caliber. 2 Year Limited Warranty. Weight lbs.(kg): 1.7 (0.77) P/N 12-03193 ..... $124.75

SUNEX STRAIGHT DIE GRINDER SX5201

1/4" Straight Die Grinder. 25,000 max. RPM of quiet speed. Only 85 dBA. Weighs only 0.9 lbs. P/N 12-02617 ..... $69.95

SUNEX ANGLE DIE GRINDER SX5203

1/4" Angle Die Grinder. 20,000 max. RPM of quiet speed. Only 82 dBA. Weighs only 1.1 lbs.
P/N 12-02618 ..... $117.75

SUNEX REVERSIBLE CUT OFF TOOL SX6210

3" Reversible Cut-Off Tool. Reversible spark direction with 18,000 max. RPM. Strong 0.9 horsepower motor. Only 83 dBA. Weighs only 3.6 lbs. P/N 12-02619 ..... $109.75

SUNEX SOCKET SETS

1/2" DRIVE STANDARD 13 PIECE SAE IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2650 Includes: 7/16" 1/2" 9/16" 5/8" 11/6" 3/4" 13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4"

P/N 12-01945 ..... $51.75

1/2" DRIVE DEEP 13 PIECE SAE IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2651 Includes: 7/16" 1/2" 9/16" 5/8" 11/6" 3/4" 13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4"

P/N 12-01946 ..... $83.95

1/2" DRIVE STANDARD 14 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2652 Includes ;10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm 27mm

P/N 12-01947 ..... $50.75

1/2" DRIVE DEEP 14 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2653 Includes: 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm 27mm

P/N 12-01948 ..... $85.75

1/2" DRIVE DEEP SPINDLE NUT 4 PIECE METRIC IMPACT SOCKET SET

* Deep design for GM & Chrysler spindle nut applications
* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2838 Includes: 30mm 32mm 34mm 36mm

P/N 12-01951 ..... $77.75

1/2" DRIVE WHEEL LOCK REMOVAL KIT

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

2840 Includes: GM Hubcap Lock Remover, GM Sprocket Hubcap Remover, Ford & Chrysler Hubcap Lock Remover, Large Univ. Locking Lug Nut Remover, Large Wheel Cover Lock Remover, Remover for Stripped 18mm Lug Nuts, Oversize Wheel Lock Remover, GM "M" & "F" Body Wheel Lock Remover, Lug Nut Remover Punch

P/N 12-01952 ..... $63.80

3/8" DRIVE DEEP 25 PIECE SAE IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy molded storage tray

3325 Includes: 12 Standard Sockets: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1"

12 Deep Sockets: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1" P/N 12-01954 ..... $119.50

3/8" DRIVE MASTER 29 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case

3329 Includes: 14 Standard Sockets:: 8mm 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 14 Deep Sockets:: 8mm 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm

P/N 12-01955 ..... $116.75

3/8" DRIVE MASTER DEEP 28 PIECE SAE & METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed (excludign adapter)
* Heavy duty blow mold case

3360DD Includes: 14 Deep SAE Sockets:: 5/16" 3/8" 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1" 14 Deep Metric Sockets:8mm 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 1/2" (F) x 3/8"(M) Adapter 3" Extension

P/N 12-01956 ..... $123.75

1/2" DRIVE DEEP MASTER 29 PIECE SAE & METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case

5153DD Includes: 13 Deep SAE Sockets: 7/16" 1/2" 9/16" 5/8" 11/16" 3/4" 13/16" 7/8" 15/16" 1" 1-1/16" 1-1/8" 1-1/4" 14 Deep Metric Sockets: 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 21mm 22mm 26mm 27mm 2 Deep Flip Sockets: 3/4" x 13/16 19mm x 21mm

P/N 12-01949 ..... $244.95

1/2" DRIVE MASTER 39 PIECE METRIC IMPACT SOCKET SET

* CR-MO alloy steel for long life
* Fully guaranteed
* Heavy duty blow mold case

2669 Includes 19 Standard Sockets: 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 20mm 21mm 22mm 23mm 24mm 26mm 27mm 30mm 19 Deep Sockets: 9mm 10mm 11mm 12mm 13mm 14mm 15mm 16mm 17mm 18mm 19mm 20mm 21mm 22mm 23mm 24mm 26mm 27mm 30mm

P/N 12-01950 ..... $198.50

1/2" DRIVE EXTRA THIN WALL 9 PIECE SAE & METRIC WHEEL PROTECTOR IMPACT SOCKET SET

* Durable outer sleeve and insert protects high polished wheels and lug nuts from damage
* Fully guaranteed
* Heavy duty blow mold case
* CR-MO alloy steel for long life

2849 Includes 6 SAE Sockets: 3/4" (light green) 13/16" (purple) 7/8" (green) 15/16" (brown) 1" (silver) 1-1/16" (black) 3 Metric Sockets: 17mm (blue) 19mm (yellow) 21mm (red) P/N 12-01953 ..... $107.75

SUNEX 1/2" SUPER DUTY IMPACT WRENCH

The Sunex HD® ½" Super Duty Impact Wrench has all of the durability, features, and power that mechanics have come to expect. From the powerful 7 vane motor to the composite blades, you have access to an unheard of breakaway torque of 1,300 ft.lbs. With an Easy Touch variable speed trigger, you can harness this power to complete any job quickly and efficiently. Top it off with the reliable twin hammer clutch, this product will last for years to come. 2 Year Limited Warranty. Weight lbs.(kg): 4.2 (1.9)

P/N 12-03188 ..... $259.95

SUNEX 5" REVERSIBLE HI-SPEED SANDER

The Sunex HD ® 5" Reversible High-Speed Sander has all of the durability, features, and power that customers have come to expect from the HD product line.

This product sets itself apart by being the only composite High-Speed Sander available that gives you light weight comfort and durability, as well as the added feature of a reversible direction control. If you are in a tight spot or need to control sparks or debris, this tool is exactly what you need. For paint removal, weld smoothing, shaping filler patches, to rust removal, there is no equal in the market. 2 Year Limited Warranty. Weight lbs.(kg): 2.2 (1.0)

P/N 12-03189 ..... $120.75

TO

SUNEX WRENCH SETS

7 PIECE JUMBO SAE COMBINATION WRENCH SET

* High density, dropped forged alloy steel for strength
* Raised panel design
* Comes with sturdy metal clip for storage

9707 Includes: 942-1-5/16", 956-1-3/4", 944-1-3/8", 960-1-7/8", 948-1-1/2", 964-2", 952-1-5/8"

P/N 12-01967 ..... $122.75

14 PIECE SAE COMBINATION WRENCH SET

* Canvas pouch included
* Raised panel design
* High density, dropped forged alloy steel for strength

9714 Includes: 712-3/8", 726-13/16, 714-7/16", 728-7/8", 716-1/2", 730-15/16", 718-9/16", 732-1", 720-5/8", 734-1-1/16", 722-11/16", 736-1-1/8", 724-3/4", 740-1-1/4"

P/N 12-01970 ..... $60.75

14 PIECE ANGLE HEAD SAE WRENCH SET

* Canvas pouch included
* Fully polished drop forged alloy steel
* 15° and 60° angled ends for added convenience

9914 Includes: 991401-3/8", 991408-13/16, 991402-7/16", 991409-7/8", 991403-1/2", 991410-15/16", 991404-9/16", 991411-1", 991405-5/8", 991412-1-1/16", 991406-11/16", 991413-1-1/8", 991407-3/4", 991414-1-1/4"

P/N 12-01975 ..... $74.95

14 PIECE ANGLE HEAD METRIC WRENCH SET

* Canvas pouch included
* Fully polished drop forged alloy steel
* 15° and 60° angled ends for added convenience

9914M Includes: 991404M-6mm, 991408M-13mm, 991403M-7mm, 991409M-14mm, 991402M-8mm, 991410M-15mm, 991401M-9mm, 991411M-16mm, 991405M-10mm, 991412M-17mm, 991406M-11mm, 991413M-18mm, 991407M-12mm, 991414M-19mm

P/N 12-01976 ..... $61.75

8 PIECE FLARE NUT CROWFOOT WRENCH SET

* 3/8" Drive
* Fully polished drop forged alloy steel
* Mounted on a convenient storage rail

9708 Includes: 970802-3/8", 970810-5/8", 970804-7/16", 970812-11/16", 970806-1/2", 970814-3/4", 970807-9/16", 970818-7/8"

P/N 12-01968 ..... $29.75

7 PIECE JUMBO STRAIGHT CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* 1/2" Drive
* Reusable blow mold storage tray

9720 Includes: 97732-1", 97734-1-1/16", 97736-1-1/8", 97738-1-3/16", 97740-1-1/4", 97760-1-3/8", 97744-1-1/2"

P/N 12-01971 ..... $66.75

6 PIECE JUMBO METRIC CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* 1/2" Drive
* Reusable blow mold storage tray

9722 Includes: 97746-1-5/8", 97752-2", 97748-1-3/4", 97754-2-1/8", 97750-1-7/8", 97756-2-1/4"

P/N 12-01972 ..... $92.75

10 PIECE METRIC FLARE NUT CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* 3/8" Drive
* Mounted on a convenient storage rail

9710M Includes: 971010-10mm, 971015-15mm, 971011-11mm, 971016-16mm, 971012-12mm, 971017-17mm, 971013-13mm, 971018-18mm, 971014-14mm, 971019-19mm

P/N 12-01969 ..... $35.50

8 PIECE JUMBO METRIC STRAIGHT CROWFOOT WRENCH SET

* Fully polished drop forged alloy steel
* Mounted on storage rail for convenience
* Reusable blow mold storage tray

9730 Includes: 97324-24mm, 97328-28mm, 97325-25mm, 97329-29mm, 97326-26mm, 97330-30mm, 97327-27mm, 97332-32mm

P/N 12-01973 ..... $57.75

SX-230A DIE GRINDER & ACCESSORIES

1/4" air die grinder. Built-in regulator. Exhaust directed away. Lever throttle for positive lever control.

Die Grinder ..... P/N 12-01124 ..... $61.75

X-227B HEAVY DUTY METAL SHEARS

Muffled handle exhaust. Heavy-duty, ball and needle construction. Pneumatic.

P/N 12-01122 ..... $117.75

SUNEX PNEUMATIC TOOLS

1/4" DRIVE MINI AIR RATCHET WRENCH

SX1068 Specification	
Free Speed(RPM) @90PSI	230
Torque (ft.lbs.) @90PSI	25
Square Drive	1/4
Min. Hose Size	2/8
Recommend Air Pressure (PSI)	90
Average Air Consumption (CFM)	3
Sound Level (dBA)	87
Length(In.)	8

* Lever throttle for positive speed control
* Ball detent socket retainer
* Rear exhaust
* Also available: 1/4" head kit

P/N 12-01932 ..... $87.75

3/8" DRIVE PISTOL GRIP IMPACT WRENCH

SX821A Specification	
Square Drive (In.)	3/8
Max. Torque (ft. lbs @90PSI)	75
Working Torque (ft.lbs.)	30-60
Free Speed (RPM@90PSI)	10,000
Air Inlet (NPT)	1/4
Recommended Air Pressure (PSI)	90
Average Air Consumption (CFM)	4
Sound Level (dBA)	84
Length (In.)	5

* Ring socket retainer for rapid socket changes
* Front bumper for added protection
* Built-in regulator for added protection
* Reliable dog clutch mechanism for dependable service
* Reliable dog clutch mechanism for dependable service

P/N 12-01937 ..... $87.75

MEDIUM DUTY AIR HAMMER

SX275B Specification	
Blows Per Minute	3,000
Bore (in.)	11/16
Stroke (In.)	2-5/8
Air Inlet (NPT)	1/4
Min. Hose Size (I.D.)	3/8
Recommended Air Pressure (PSI)	90
Average Air Consumption (CFM)	4
Sound Level (dBA)	105
Length (In.)	6.75

* Built-in regulator
* Accepts .401" Parker taper shank chisels
* An excellent general purpose hammer
* Quick change retainer spring

P/N 12-01935 ..... $44.95

SUNEX 20 TON CAPACITY AIR BOTTLE JACK

* Designed for operating either manually or pneumatically * Air hose can swivel in any direction * Fitted with safety valve to prevent overloading * Two piece handle allows for easy pumping * Extension screw gives added height when necessary * Minimum air pressure required is 90 PSI, 7 Bars * Double spring return 4920BAH Specifications: Capacity (Tons)-20, Power Lift (In.) -7, Closed Height (In.) -10.5, Raised Height (In.) -20.1, Add. Screw Adj. (In.)-3.5, Base Dimensions (In.)-6.5 x 8.9

P/N 12-01958 ..... $278.95

4 PIECE 3/8 INCH DRIVE UNIVERSAL SPARK PLUG SOCKET SET

* All four sized spark plug sockets in one convenient set * Fully polished chrome vanadium alloy steel for durability * Universal joint design for easy access in confined areas * Rubber inserts hold spark plug securely during installation and removal * Includes new 9/16" size * Convenient blow mold case * Fully guaranteed. 87602 Specifications: 8844-9/16, 8844-5/8, 8844- 3/4, 8844-13/16

P/N 12-01966 ..... $41.50

8 PIECE PROFESSIONAL SCREWDRIVER SET - ORANGE

* Includes 5 flat tip drivers and 3 Phillips tip drivers * Hardened chrome vanadium shafts * Vapor blasted magnetic tips * Packaged in heavy molded plastic tray for storage * Hex bolsters on most sizes for extra turning power. 87602 Specifications: 98061-3/8" x 8", 98062-5/16" x 6, 98063-1/4" x 4", 98064-3/16" x 3", 98065-1/4" x 1-1/2", 98066-#2 Phillips x 4", 98067-#1 Phillips x 3", 98068-#2 Phillips x 1-1/2"

P/N 12-01974 ..... $15.95

SUNEX DELUXE CREEPER

* 1" Rugged steel tube construction * Oversize frame for added comfort * Tapered frame and head reast for extra clearnace in tight areas * 3-1/2" Heavy duty chrome finished casters with rubber tread * 5-Position stick shift headrest adjustment sytem * Rear drop frame design for extra leg comfort

8515 Specifications: Length (In.)-45.5, Width (In.)-19, Height (Headrest Down)-5, Height (Headrest Up)-9.5, Shipping Weight (lbs)-29.0, Bed Size-30.625 x 16.5 x 2.5

P/N 12-01964 ..... $194.75

SUNEX SERVICE CART WITH LOCKING TOP & DRAWER

* 8016 - 3 Drawer Unit * 8011 - Large Locking Screwdriver/Pry Bar holder * 8004 - Side Work Bench * 8014 - Leg extension Drawer liner sold separately Note: This item is purchased as a complete unit with the accessories listed above.

8013ADLX Specifications: Load capacity (lbs.)-350, Shipping weight (lbs.)-115.5, Color: Blue-8013ABLDLX, 8844-13/16-13/16"

P/N 12-01962 ..... $470.00

SUNEX SOCKET DRIVES

Radius corner design causes the socket to grab the sturdy wall, or flat, of the fastener instead of grabbing the corners, resulting in less corner wear on the fastener. CR-MO alloy steel for long life.

Drive	Socket	Description	Part No.	Price
3/4"	41mm	Sunex 441MD	12-03448	$23.75
3/4"	46mm	Sunex 446MD	12-03450	$30.00
1"	46mm	Sunex 546MD	12-03451	$35.50

SUNEX REDUCING SOCKETS

CR-MO alloy steel for long life. Steel ball retainer on male end. Will meet a variety of needs. Lifetime warranty. Fully guaranteed.

Description	Part No.	Price
Sunex 2302 1/2"(f)x3/4"(m)	12-03452	$9.95
Sunex 4300 3/4"(f)x1"(m)	12-03453	$17.50

SUNEX SERVICE CART WITH LOCKING TOP & DRAWER

* This combination makes for the ultimate cart * The locking drawer and locking top are keyed the same, so the user only has one set of keys * Clip-on roller-bearing slides on drawer * Large, easy to maneuver 4" wheels: 2 locking and 2 standard, Chrome 16 gauge steel frame, Durable powder coated finish, 3" deep shelves, Available colors: red, blue, black & yellow

8013A Specifications: Load capacity (lbs.)-350, Shipping weight (lbs.)-69.5

P/N 12-01963 ..... $242.95

SUNEX 6 INCH VISE

* 2 locking mechanism for stability * Made from cast iron with steel handle threads

87602 Specifications: Base Swivel-.....360 deg.

P/N 12-01961 ..... $129.75

SUNEX 3/8 INCH CUTTING WHEEL - 5 PCS.

* For general purpose metal cutting 3" x 1-/16" double reinforced * Use with 3/8" arbor * Do not exceed 20,000 RPMs * Comply with ANSI B7.1/OSHA regulations. 87602 Specifications: Diameter (In.)-3, Qty. Included -5, Max RPM -25,000 P/N 12-01965 ..... $11.55

6 INCH BENCH GRINDER WITH LIGHT

* Bright, flexible work light * Has two 6" grit wheels: coarse 36 and medium 60 * Each wheel has protective spark guard and adjustable eye shield * Mounting holes and rubber feet make grinder easy to mount on a stand (optional - part #5003 or 5005) or use on an approved worktable or workbench * Conveniently placed, easy to use on/off switch * Long, 6-foot power cord * Cast iron base for durability * Ball bearing construction for smooth operation * 1/2" Arbor accepts standard 6" wheel * UL & CSA Listed * Includes: eye shields (RS500119B) & tool rests (RS500135B)

5001A Specifications: Power-1/2 HP Motor, No Load speed .....3450 RPM Motor -3.5 Amp, Voltage -115V/60Hz, Shipping Wt. (Lbs) -22

P/N 12-01959 ..... $167.75

5 TON CAPACITY 8-WAY, 2-3 JAW REVERSIBLE PULLER

* Can be assembled to make a two or three jaw puller when additional stability is needed * Reversible jaw design for added versatility and a broader range of pulling capability * Ideal for pulling gears, bearings, pulleys and other press fit parts

3908 Specifications: Maximum reach (in.)-5.5, Maximum spread (in.) -7

P/N 12-01957 ..... $37.50

3/16 INCH HEAVY DUTY RIVET GUN

* Sets all conventional, standard blind rivets and all structural blind rivets, mono bolts and t-rivets up to and including 3/16" diameter in all materials * Comes with nose pieces in 3/32", 1/8", 5/32", and 3/16" sizes * Features a pulling (traction) power of 1,983 lbF @90PSI * Forged aluminum handle * Nose pieces stored conveniently underneath base of gun * Minimum air pressure required is 90 PSI, 7 Bars * Includes blow molded storage case SX0918T Specifications: Air Pressure (PSI) -75-90, Stroke Length (In.) -11/16, Height (In.) -12-3/8, Weight (Lbs.) -3.70, Min. Hose Size (I.D.) -3/8, Air Inlet Size (NPT) -1/4. * Tips available on special request.

P/N 12-01933 ..... $265.95

SUNEX 3 PIECE PROFESSIONAL ANGLE BLADE PRY BAR SET

Includes angle blade pry bars in lengths of 12", 17" and 25" and boast a handle specifically designed to ensure a "no slip" grip allowing the user maximum leverage and control. Each pry bar also has hardened, tempered blades for unmatched strength and durability. Specifications • Weight: 4.1lbs • Length: 25.8" • Height: 1.9"

P/N 12-02451 ..... $54.75

SUNEX 3PC FLEXIBLE PICKUP TOOL

Helps to get you into those tight spots and help you with removal, fastening, and pick up of fasteners and parts. Features: Includes: 1/4" Magnetic Bit Driver, 1/4" Socket Driver, and a 2 in 1 Magnetic Claw Pick-Up Tool. Flexible ends bend to desired angles. Extra long 24" length shafts. 1/4" Bit Socket accepts all standard bits. 1/4" Socket Driver can be used with all 1/4" sockets and bit sockets.

P/N 12-02450 ..... $45.50

SUNEX CABLE SPRING CLAMP PLIERS

24" flexible neck cable for hard to reach areas. Clamps lock in open position. Removes plastic and metal self-tightening (11/16" - 2-1/2" diameter) hose clamps. Extended clamp on allows for added extension. Lifetime warranty (does not include cable and spring).

P/N 12-03454 ..... $63.75

TO

SUNEX TOOLS – METAL WORKING TOOLS

SUNEX 12 PIECE METRIC V-GROOVE COMBO RATCHETING WRENCH SETS

12 Piece Metric V-Groove Combination Ratcheting Wrench Sets Include: 8mm, 9mm, 10mm, 11mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, and 19mm.

12 pc. Wrench Set..... P/N 12-03333.....$129.99
12 pc. Wrench Set with Flex Head..... P/N 12-03341.....$182.85

SUNEX 4 PIECE SAE EXTRA LONG DOUBLE BOX RATCHETING WRENCH SETS

4 Piece SAE extra long sets include: 5/16" x 3/8", 9/16" x 5/8", 7/16" x 1/2", and 11/16" x 3/4"

4 pc. Wrench Set..... P/N 12-03336.....$134.75
4 pc. Wrench Set with Flex Head
P/N 12-03334.....$153.75

SUNEX 6 PIECE METRIC EXTRA LONG DOUBLE BOX RATCHETING WRENCH SETS

6 Piece Set Includes: 8mm x 9mm, 12mm x 13mm, 16mm x 18mm, 10mm x 11mm, 14mm x 15mm, and 17mm x 19mm.

6 pc. Wrench Set..... P/N 12-03337.....$192.85
6 pc. Wrench Set with Flex Head
P/N 12-03335.....$214.95

SUNEX 8 PIECE STUBBY FLEX HEAD V-GROOVE COMBINATION RATCHETING WRENCH SETS

8 Piece SAE set includes: 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4". P/N 12-03338.....$121.75

8 piece metric set includes: 10mm, 12mm, 13mm, 14mm, 15mm, 17mm, 18mm, 19mm. P/N 12-03339.....$130.75

SUNEX 13 PIECE SAE V-GROOVE FLEX HEAD COMBINATION RATCHETING WRENCH SET

13 Piece SAE set includes: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", and 1" P/N 12-03340.....$254.95

HAND SHEARS

Throatless design, adjustable work hold down, arched top blade allows for effortless cutting throughout the stroke and indexable bottom blade. Up to 3/16" steel, up to 3/8" round bar.

Description	Part No.	Price
Hand Shear 5" Model SPHS5	12-03459	$109.99
Hand Shear 8" Model SPHS8	12-03460	$119.99
Hand Shear 10" Model SPHS10	12-03457	$149.99
Hand Shear 12" Model SPHS12	12-03458	$169.99

TO

MANUAL SHEET METAL CORNER NOTCHER

Heavy cast iron frame, adjustable work stops, 4 x 4 blades adjustable blade gap, high chrome blades, adjustable gibs for long life. P/N 12-03461.....$1,295.00

52 INCH FOOT SHEAR

52" Blade length, cast iron frame, front arm supports, high carbon blade, adjustable blade gap, front squaring arm with scale, back gauge with inch and metric scale.

P/N 12-03462.....$2,195.99

ROTARY SHEAR

Shape cutter, easily cut any shape up to 1/8" thick, forged steel frame, ratcheting head, adjustable cutter, adjustable work stop.

P/N 12-03463.....$189.99

HAND SHEAR MULTI PURPOSE CUTTER

5" Top length, throatless design, adjustable work hold down, geared reduction handle makes cutting easy.

P/N 12-03464.....$239.99

3-IN-1 SHEET METAL ROLLER

This Sheet Metal Roller Press is 12" length with 5 adjustable hardened fingers, material hold-down, back gauge, 1-1/4" slip rolls with 1/16", 1/8" and 3/16" grooves for wire forming. Works up to 20 gauge sheet metal. P/N 12-03466.....$289.99

SQUARE NOTCHER

Foot operated, 3" x 3" blades, adjustable work stops, adjustable blade gap. 16 Gauge.

P/N 12-03465.....$599.00

3-IN-1 SHEET METAL ROLLERS

These Sheet Metal Roller Presses have 6 adjustable hardened fingers, spring loaded sheet hold-down, heavy cast iron frame, grooves for wire rolling, 1 1/4" slip rolls, adjustable back gauge. Works up to 20 gauge sheet metal. Stand not included but available for the 30" Roller only, see Accessories Tab. 20 Gauge.

Model	Size	Part No.	Price
SP3-1-3	30"	12-03467	$695.99
SP3-1-40	40"	12-03469	$995.99
SP3-1-52	52"	12-03470	$1,795.00

BEAD ROLLING MACHINE

Super heavy duty solid cast iron with no flex frame bead roller. Has a 20" throat depth, 1" diameter spindles, and includes floor stand with 6 sets of dies: 1/4" round bead die. 1/2" round bead die. 1/16" step die. 1/8" step die. 1/4" step die. 1 set of shearing dies. 18 Gauge Mild Steel, 1/16" Aluminum. P/N 12-03471.....$599.99

POWER BEAD ROLLER MACHING

Heavy Duty Power Bead Roller, works off 110v gear drive motor and has a 43" throat depth with an adjustable fence and includes floor stand, die rack, 2 step dies, 2 bead dies and a 45 degree tipping die.

P/N 12-03472.....$1,695.00

ENGLISH WHEEL THROAT DEPTH

Heavy Duty Construction, Quick Release Lower Anvil and Includes Floor Stand. * Part Number 12-03474 - Can Be Used For Rolling, Beading And Forming Foot Operated Height Adjustment.

Model	Description	Top Wheel	Ball Bearings	Includes	Part No.	Price
WFEW-2	English Wheel 28" Throat Depth With Stand	8"	Precision	5 Pieces Radius Anvils And One Flat Anvil	12-03473	$649.99
WFEW45T	English Wheel 43" Throat Depth	6"	Super Wide 3" Anvils Precision	4 Top Wheels And 10 Lower Anvils	12-03474	$1,695.00

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

METAL WORKING TOOLS

PLANISHING HAMMER

26" Throat depth, quick adjust anvil height. Includes floor stand with handy retractable wheels, industrial hammer at 4600 beats per minute, includes in line oiler, pressure regulator and foot pedal. Up to 1/16" steel.

P/N 12-03475.....$1,399.00

PLANISHING HAMMER

Uses shop air 50-100 psi 4 cfm, 19-5/8" throat depth, features quick adjust anvil height/pressure, includes floor stand, 3 anvil, air motor, foot pedal. 16 Gauge Mild Steel.

P/N 12-03476.....$295.99

SHRINKER / STRETCHER MACHINE

Ideal for creating repair panels for wheel openings, winshields, etc., Produce curves as tight as 3" radius, drilled bottom for bench mounting or clamp in a bench vise. Cast iron frame. 18 Gauge mild steel, 16 gauge aluminum.

P/N 12-03477.....$189.99

DEEP THROAT SHRINKER STRETCHERS

8" Throat Depth. 18 Gauge Mild Steel, 16 Gauge Aluminum. P/N 12-03478.....$479.99
Adjustable Stand..... P/N 12-03479.....$119.99

WOODWARD-FAB BOSS 16 BOX & PAN BRAKE

Maximum box depth 4", removable fingers - 2", 3", 4", bend angle stop 0 to 130 degrees, floor stand included, counterweight included, upper beam is adjustable for radius bending. 16 Gauge Mild Steel, 20 Gauge Stainless Steel.

P/N 12-03480.....$1,150.00

12 INCH 20 GA BOX & PAN BRAKE

12" Length, 5 hardened, removable fingers, cam lock handle. 20 Gauge. P/N 12-03481.....$249.99

24 INCH 20 GA BOX AND PAN BRAKE

Solid heavy duty construction, reinforced frame, hardened and ground fingers, finger to bend leaf gap can be adjusted, maximum box depth, 5 removable fingers. 20 Gauge. P/N 12-03482.....$349.99

EURO BRAKE

50" Box and Pan Brake, 14 Gauge Capacity Mild Steel, Air Cylinder Assist "No Need for Weights", Adjustable Hold Down Force, Adjustable Bend Gap, Foot Operated Locking Hold Down, Hardened and Ground Fingers plus removable lower fingers for custom bends. 14 Gauge. P/N 12-03483.....$2,995.00

MODEL S TURBO BURR

55,000 rpm, 1/4" air hose connection, 60 to 120 psi, 5 to 11 cfm, feed up to 2" per second. Ideal for deburring and edge finishing, puts a safety edge on sheet metal in one pass. .015" Minimum material thickness.

P/N 12-03484.....$479.00

WELD SHAVER

Removes both flat "butt" welds and inside 90 degree corner "fillet" welds. Uses carbide inserts , milling type cutter head. Remove weld beads up to 1/2".

P/N 12-03485.....$985.00

SLIP ROLL

12" Length, 1" diameter hardened rolls, 1/16", 1/8" 3/16" wire grooves. 20 Gauge.

P/N 12-03486.....$199.99

24 INCH 20 GAUGE SLIP ROLL

24" Length, 1-1/2" diameter rolls, solid precision ground rollers, heavy cast iron frame, quick release top roll, hardened steel gears, wire grooves for wire rolling. 20 Gauge.

P/N 12-03487.....$389.99

WOODWARD-FAB ELITE SHEET METAL / WIRE SLIP ROLLER 24 INCH

24" Length, 2-3/8" diameter drive rolls, 2-1/2" rear adjustable roll. Uses single front mounted hand wheel for adjusting the rear roll. Uses single hand wheel to adjust the bottom roll for material thickness, roll tapers up to 15 degrees, fully enclosed gear box, cast iron end plates, wire grooves for wire rolling. Floor stand included. 16 Gauge.

P/N 12-03488.....$995.00

WOODWARD-FAB ELITE SHEET METAL / WIRE SLIP ROLLER 50.5 INCH

50-1/2" Length, 2-3/8" diameter drive rolls, 2-1/2" rear adjustable roll. Uses single front mounted hand wheel for adjusting the rear roll. Uses single hand wheel to adjust the bottom roll for material thickness, roll tapers up to 15 degrees, fully enclosed gear box, cast iron end plates, wire grooves for wire rolling. Floor stand included. 16 Gauge.

P/N 12-03491.....$1,595.00

TON SHOP PRESSES

Hydraulic hand pump, press plates included 7" stroke, easy read gauge. 10 Ton - 14 1/2" inside clearance.

Model	Description	Stroke	Inside Clearance	Part No.	Price
PR102	10 Ton Shop Press	7"	10 Ton - 14 1/2"	12-03492	$249.00
PR103	12 Ton Shop Press	7"	12 Ton - 18 1/2"	12-03493	$295.00
PR104	20 Ton Shop Press	7 1/2"	20 Ton - 19 1/2"	12-03494	$399.00

2 INCH PIPE NOTCHER

Use with any hand held drill motor or drill press, create any angle saddle notch on pipe for weld fit up, uses standard hole saw blades up to 2 1/2", compound angle adjustment. Holds up to 2" pipe, uses up to 2 1/2" hole saws.

P/N 12-03495..... $79.99

PIPE / TUBE NOTCHER

Solid steel construction, use with any 1/2" hand drill, accepts standard hole saw cutters, hardened and ground spindle, superior needle bearing support, adjustable angle to 50 degrees mount to bench top or clamp in vise. 3/4 - 3" O.D. Pipe/tube.

P/N 12-03496.....$199.99

TRACE-A-PUNCH NIBBLER

1 1/2 Hp, 110 V, 6 3/4" Throat Depth, Cuts Any Shape Metal Or Plastic. 1/8" Maximum Thickness.

P/N 12-03497.....$1,985.00

TRACE-A-PUNCH NIBBLER

3 HP, 220/440 V, 3 phase, 16" throat depth, cuts any shape metal or plastic. 3/16" Maximum thickness.

P/N 12-03498.....$3,850.00

TRACE A PUNCH TUBING NIBBLER

1 1/2" HP, 110V, cuts any tubing up to 1/8" wall thickness, cut free hand or follow a template, ideal for odd angle weld fit ups, includes 1 anvil, 1 punch and die, work light, nibble lube and instructions. Up to 1/8" wall thickness. P/N 12-03499.....$2,495.00

TO

1/4 INCH AIR DIE GRINDER - VT3000

- 1/4" Air Die Grinder - VT3000
- Lightweight - powerful compact design
- VT3000- 25,000 RPM
- All ball bearing construction for longer tool life
- Self-locking safety throttle lever to prevent accidental starts
- Ergonomic positive grip
- Rear exhaust

P/N 12-02550 ..... $42.25

1/4 INCH AIR DIE GRINDER - VT3000A

- 1/4" Angle Type Air Die Grinder VT3000A
- Lightweight - powerful compact design
- All ball bearing construction for longer tool life
- Self-locking safety throttle lever to prevent accidental starts
- Ergonomic positive grip
- Rear exhaust

P/N 12-02551 ..... $92.25

1/4 INCH AIR DIE GRINDER - VT3001

- Industrial duty
- Durable precision machined and hardened steel gears
- Precision air motor with exceptionally high turning force
- High quality ball bearings for longer tool life
- Safety throttle lever
- Ergonomic square handle design for positive grip
- Rear exhaust

P/N 12-02552 ..... $89.50

1/4 INCH AIR DIE GRINDER - VT3001A

- 105° angle type head
- Direct drive - no bevel and pinon gears to maintain
- One piece casting
- Ergonomic design for operator convenience
- Safety throttle lever
- Rear exhaust

P/N 12-02553 ..... $96.75

1/4 INCH HEAVY DUTY MINI ANGLE GRINDER - VT3003A

- Heavy duty performance and power in a light weight grinder
- Ergonomic rubber grip for greater operator comfort and safety
- Precision machined and hardened steel gears
- Precision air motor with exceptionally high turning force
- High quality ball bearings for longer tool life
- Safety throttle lever
- Front exhaust

P/N 12-02554 ..... $192.95

7" ANGLE POLISHER

- Polisher is ergonomically form fitting, light weight and easy to use
- Ball bearing mounted motor
- Includes reversible side handle for left or right hand operation
- Built-in regulator for adjusting free speed range from 1,500 to 2,500 RPM
- RPM: 2,500
- CFM: 6
- Pad Size: 7"
- Noise dB: 93
- Air Inlet: 1/4"
- Max Pressure: 100
- Length: 13"
- Weight: 4.8lbs

P/N 12-02555 ..... $175.95

RIGHT ANGLE POLISHER

The V716P is ideal for polishing and buffing paint, metal, wood or plastic. It has an adjustable speed control and a unique muffler design. Side handle is standard equipment and fits either the left or right side of polisher.

- Free Speed: 0-4,000 RPM
- Motor: 1 HP
- Average Air Consumption: 8 CFM
- Air Inlet Size: 1/4" NPT
- Spindle Size: 5/8"-11
- Sanding Pad: 7"
- Weight: 6 lbs.

P/N 12-02556 ..... $359.95

3" AIR ANGLE POLISHER

- Mini-size and light weight for easy use in tight areas
- Designed for extended use
- Powerful high torque motor
- Lever throttle trigger
- Built-in air regulator for positive speed control
- Special high speed ball bearings for vibration-free performance
- Rubber grip for non-slip feel and insulates from cold air
- Muffling system with rear exhaust
- RPM: 2,500, CFM: 10.5, HP: .3, Pad Size: 3", Noise dB: 80, Air Inlet: 1/4", Max Pressure: 90, Length: 6.30", Weight: 1.8lbs, Warranty: 1 year

P/N 12-02557 ..... $209.95

1/4" BELT SANDER

- Rear exhaust directs air away from work surface
- Equipped with silencer to reduce noise
- Precision air motor with exceptionally high turning force
- Precision ball bearings for longer life
- Can be used for internal and external finishing
- Quick change belt replacement system
- Built-in speed regulator
- Reaches normally inaccessible areas
- Light weight ergonomic handle design for control and comfort
- Rubber grip for non-slip feel and insulates from cold air
- Grind off contact wheel or platen
- 360° head rotation provides versatility for every job
- RPM: 16,000, CFM: 14.2, HP: .37, Noise dB: 80, Air Inlet: 1/4, Max Pressure: 85, Vibration: 3.8, Length: 10-7/16, Weight: 2, Warranty: 1 yr.

P/N 12-02558 ..... $249.95

3/8" REVERSIBLE ANGLE DRILL

- Compact, low profile angle head enables easy access to tight areas
- Light weight and powerful
- Comfortable lever throttle
- One hand quick reverse lever
- Ergonomic design with elastomer handle grip for improved comfort
- Heavy duty ball and needle bearing construction
- Planetary gear reduction balances the drilling load and maximizes performance
- Precision air motor with exceptionally high turning force

P/N 12-02559 ..... $148.95

TO

BAILEIGH METAL TOOLS

BAILEIGH MANUAL BENDER FB-4

Baileigh's FB-4 form bender is a useful tool for press bending ornamental iron, mild steel, aluminum and other metals. This flat bar bender is a manual press brake and can create 90 degree bends by simply turning a hand lever until the desired angle is accomplished.

This metal bender is perfect for hobbyists, ornamental iron artists, and much more. Of course this is not a production bender, but is perfect for small runs or those one off applications.

• Capacity: 3/16" • Shipping Dimensions (L/W/H): 17"/7"/8" • Shipping Weight: 19 lbs

P/N 13-08987 .....$235.00

BAILEIGH MANUAL ROLL BENDER R-M3

Baileigh The R-M3 metal ring roller is perfect for any typical sheet metal shop for bending small rod up to ¼". Metal artists, technical schools, and home shops can find hundreds of uses to keep this well built angle roll in use.

This single pinch metal ring roller can be bench or pedestal mounted. It has fine adjustment for the top roll and to power this machine there is a manual hand crank.

• Capacity Solid Round: .25" • Capacity Flat Bar: 1" (.1875 • Minimum Diameter: 3" • Handle Length: 13.5" • Power Requirement: Manual • Shipping Dimensions (L/W/H): 15" / 7" / 8" • Shipping Weight: 18 lbs

P/N 13-08975 .....$145.00

BAILEIGH MANUAL ROLL BENDER R-M7

Baileigh Industrial's Roll Bender R-M7's small size makes it highly portable and versatile. Although not for rolling complete circles, it makes quick work of large radius bends. Many different tooling options are available as well.

Capacity / Size / Diameter: • Pipe - 1.5" / 20" dia • Round Tube - 1.25"(.078") / 31.5" dia • Square Tube - 2" / 70" dia • Rectangle Tube - 1x2" / 30" dia • Flat bar - Easy Way / 10" dia

Specifications: • Roll adjustment: Manual • Pinch: Single • Shaft Center Distance (lower rolls): Adjustable • Driven Rolls: 1 • Speeds: N/A • Motor: N/A • Power Requirements: Manual •Shipping Weight: 150 lbs

P/N 13-08976 .....$675.00

BAILEIGH MANUAL ROLL BENDER R-M10

Baileigh's R-M10 tube roller has a powerful manual drive system that has a maximum capacity of 1-1/4" (.078" wall) round tubing capacity (mild steel). It comes standard with segment rolls that allows for many different types of flat bar, some angle iron and some square to be rolled. This roll bender has optional rolls for round tube and pipe, as well as other profiles.

This tube roller is typically in stock for fast deliveries. For further information on the R-M10 roll bender, please contact your Baileigh representative.

Capacity / Size / Diameter: • Pipe - 1 " (Sch.40) / 28" dia • Round Tube - 1.25"(.078") / 31.5" dia • Square Tube - 1.2" (.078") / 35" dia • Angle Iron - 1.25" (.157") / 30" dia • Solid Square - .75" / 20" dia • Solid Round - .875" / 20" dia • Flat Bar Easy Way - 2" / 15.75" dia • Flat Bar Hard Way - .75" / 6.5" dia

All Specs based on 60,000 PSI (42 kg/mm2) Tensile Strength - Mild Steel. Specs are to be used as a base line for purchase purposes only. Baileigh Industrial cannot control Variations in Material.

Technical Specifications and Standard Equipment: • Two rolls are manually powered • Special cast frame • Shafts are hardened with special steel material • Rolls are special steel material hardened and ground • Gears milled with full material • Standard rolls, guide rollers, manual working • Users manual.

P/N 13-08977 .....$1,549.00

BAILEIGH MANUAL TUBE BENDER RDB-10

The RDB-10 manual hand tube bender is the perfect bending machine for bending air lines, brake lines, fuel lines, and general hydraulic lines. Thus, if you're into building or repairing race cars, auto and airplane repair or restoration, an automated machinery builder, or much more, the RDB-10 manual bender will save you time and money from the moment you use it.

This manual tube bender comes standard with 10 different size combinations from 1/4" to 5/8" OD in either 3 or 5 times the diameter radiuses. This manual tube bender works great with mild steel, certain coppers and aluminums, as well as stainless steel. It comes standard with a heavy pedestal, tooling rack, and bending machine.

The RDB-10 hand bender is easy to use and can bend tubing up to 180 degrees. Because of the design, this bending machine can do serpentine bends with ease at very tight radiuses depending on the OD, material and wall thickness.

P/N 13-08971 .....$679.00

BAILEIGH MANUAL TUBE BENDER RDB-25

This manual tubing bender comes standard with the following round tube die sets: 3/8" OD x 2" CLR; 1/2" OD x 2.25" CLR; 9/16" OD x 2.5" CLR; 5/8" OD x 3" CLR; 3/4" OD x 3.5" CLR; and 7/8" OD x 4.25" CLR. It also includes a 3/4" Square x 3.75" CLR and 1" Square x 4.25" die sets.

Sturdy cast iron frame that can be bench or pedestal mounted for ease of use. Even though this tube bending machine is very powerful, it has been designed to take up little shop floor space. This is the perfect manual tubing bender for the home hobbyist, metal artist, or small fabrication shop with low run requirements.

Specifications: • Capacities Round Tube(OD): 7/8" max • Capacities Square Tube: 1" max • Wall Thickness: .047" max • Bend Angle: Up to 180 deg • Power: Manual • Shipping Dimensions (L/W/H): 25"/15"/6.5" • Shipping Weight: 61 lbs

P/N 13-08972 .....$189.95

BAILEIGH MANUAL TUBE BENDER RDB-050

This bending machine is extremely powerful and can bend up to 2-1/2" OD mild steel with a wall thickness of .120" and 2" OD chromoly with a wall thickness of .120". Also has three unique speeds. The proper speed for each application depends on the material type, OD and wall thickness. Speed one (4 degrees per pull) has the most torque and would be used for bending 2" OD Chromoly or 2-1/2" OD mild steel. Speed two produces 8 degrees (for intermediate materials), while speed three produces 12 degrees (for lighter gauge materials) with each pull. Operator can bend to 200 degrees without re-pinning. It ships via UPS in four separate boxes to keep freight rates reasonable. Some assembly is required.

P/N 13-08973 .....$949.00

BAILEIGH MANUAL TUBE BENDER RDB-100

This bending machine can be fitted with hundreds of round and square tubing die sets as well as round pipe dies sets with a maximum center line radius up to 7". This manual tube bender uses a large diameter indexing plate that allows the fabricator to bend up to 206 degrees (180 degrees plus spring back) in one shot without having to re-index and re-pin common on most other manual pipe benders on the market. Each pull of the handle bends the material approximately 8 degrees. When requirements are for lighter gauge materials this tube bending machines indexing unit can be shut off and the handle can be put into a manual override housing that allows the operator to simply walk around the manual bender and bend without the power of the indexing unit. Includes the stand, degree dial, and handle.

P/N 13-08974 .....$2,235.00

BAILEIGH ENGLISH WHEEL EW-28

This quality English wheel is a heavily built floor stand unit that can handle smoothing compound curves into mild steel and aluminum sheet metal for restoration or bodywork on autos, planes, cycles and much more. This machine has an 18-gauge mild steel capacity and has an ample 28" throat depth. The EW-28 English wheel comes standard with an 8" X 2" upper roll and includes six lower anvil rolls with varying crowns. The radius included for the six lower rolls are 2", 3", 4", 6", 8", and 12". Like other Baileigh English wheels, the machine comes intact with only minor assembly required (no welding required). The frame members are constructed of heavy walled square tubing that is electro welded to a truss system offering little flex at maximum capacity.

Specifications: • Capacity (Mild Steel): 18 ga • Throat Depth: 28" • Shipping Dimensions(L/W/H): 36"/34"/15" • Shipping Weight: 191 lbs

P/N 13-09001 .....$679.95

BAILEIGH ENGLISH WHEEL MANUALLY OPERATED EW-40

Baileigh's quality English Wheels have a generous 40" throat depth, and ship complete with five bottom anvils and one 7" upper wheel. It has a rugged electro welded frame and stand for ease of use and years of quality shaping and forming metal. The EW-40 English wheel has an 18 gauge mild steel capacity and a 13 gauge aluminum capacity. Like all Baileigh metal forming machines the EW-40 is a quality machine for a reasonable price. This machine is in stock for quick deliveries.

Specifications: • Capacity (Mild Steel): 18 ga • Throat Depth: 40" • Shipping Dimensions(L/W/H): 72"/36"/15" • Shipping Weight: 388 lbs

P/N 13-09003 .....$1,459.00

TO

BAILEIGH METAL TOOLS

BAILEIGH MANUAL MULTI-PURPOSE BENDER MCB-650

Baileigh's MCB-650 flat bar benders are ruggedly built to bend up to 5/16" X 1-1/4" mild steel or ¼" X 2" mild steel as the maximum capacity. This is a fantastic ornamental bender to have for railings, fences, gates and for hundreds of additional applications. This flat bar bender comes standard with 7 die sets from 1" up to 3" for flat metal. Other solid applications such as wire, rod, and bar can be bent as well up to 200 degrees.
Specifications: • Bend Capacity: 2" x .236" • Angle Capacity: 0 - 200 deg • Shipping Dimensions (L/W/H): 35"/10.5"/10.5" • Shipping Weight: 53 lbs
P/N 13-08988 .....$189.95

BAILEIGH MANUAL HOLE SAW NOTCHER TN-200H

This coping machine can be vertically mounted in a drill press, or for larger pieces it can be horizontally mounted on a weld bench and powered by a portable drill.
This hole saw tube notcher is made of thick 3/8 inch aluminum with a heavy bronze bushing that is replaceable if ever need be. The spindle is made of a ½" hardened shaft for longevity and less vibration. This coping machine can notch at angles up to 45 degrees in less than 30 seconds and has a capacity of up to 2" round tube.
Specifications: • Notch Capacity (OD): 2" • Spindle Size: 1/2" • Spindle Adapter: 1/2" – 5/8" • Shipping Size (L/W/H): 12" / 7" / 5" • Shipping Weight: 10 lbs
P/N 13-08978 .....$195.00

BAILEIGH MANUAL HOLE SAW NOTCHER TN-250

This is the most revolutionary hole saw pipe notcher on the market and is perfect for chassis, roll cages, and much more. This is the only hole saw tubing notcher that is always centered left to right and up and down. This coping machine is constructed of heavy steel plate to reduce vibration, uses a 1-1/4" Thompson® shaft that rides in a sealed needle bearing for longevity of the machine and hole saw. The TN-250 tube notchers vise has a powerful screw with a built in hand wheel that opens and closes the unique six radial clamping jaws. Can notch up to 2-1/2" OD and allows for steep angles as the hole saw can pivot up to 230 degrees making it the most versatile notching machine on the market. This tubing notcher can easily offset in seconds for off center notches and does not require crazy shims or spacers common on inferior models.
P/N 13-08981 .....$579.95

BAILEIGH MANUAL HOLE SAW NOTCHER TN-300

This tubing notcher can notch from 1/2" to 3" tube and 1/2" to 2-1/2" Schedule 40 Pipe in materials such as aluminum, mild steel, chromoly, and stainless steel. The tube notchers vise has a quick release so different notch angles can be set up in a second or two and locked in with a solid taper lock. Can notch up to 60 degrees as standard, but with extended hole saws and the right size OD, notches up to 75 degrees can be attained. The vise is a self centering that is on an acme screw for quick tightening and releasing of the material. An offset adjustment is standard for those jobs where more strength is needed like on some hand railing or chassis frame applications. The drive carriage on the TN-300 pipe notcher houses an industrial grade motor tied to a direct drive gear reducer that turns the hole saw with ease, even at full capacity. This tube notchers carriage rides on a solid V-block roller assembly that is coupled to a large drive wheel for pushing the hole saw into the material with limited vibration and ease. This simple unique design on this tube notcher makes notching tube and pipe a breeze.
P/N 13-08983 .....$2,625.00

BAILEIGH MSS-18 MANUAL 18GA SHRINKER STRETCHER

Baileigh's MSS-18 sheet metal shrinker stretcher has one complete shrinker and one complete stretcher both in their own cast iron housings. The heavy casting assures a quality function at full capacity, which is 18-gauge in mild steel and 16-gauge in aluminum. Both units are foot operated and come with a heavy steel stand as standard.
Specifications: • Capacity Mild Steel: 18 ga • Capacity Aluminum: 16 ga • Minimum Forming Diameter: 4.5" • Stand: Included
P/N 13-08984 .....$485.00

BAILEIGH MSS-16 MANUAL 16GA SHRINKER STRETCHER

Baileigh's MSS-16 sheet metal shrinker stretcher has a heavy cast iron frame with a deep 8" throat. It comes standard with two sets of jaws, one for shrinking and one for stretching. This is a manually operated machine that has a heavy engagement lever that allows perfect control of the function at hand. This sheet metal shrinker stretcher has a mild steel capacity of 16 gauge and an aluminum capacity of 14 gauge. No other sheet metal stretcher shrinker on the market has such a generous throat depth with a heavy maximum capacity for such a good price.
Specifications: • Capacity Mild Steel: 16 ga •Capacity Aluminum: 14 ga • Throat Depth: 8"
P/N 13-08985 .....$579.95

BAILEIGH MSS-16F SHRINKER STRETCHER

This model is a heavy duty foot operated shrinker stretcher for shrinking or stretching mild steel sheet metal down to 16-gauge (14-gauge aluminum) in thickness. This is the perfect machine for working metal for auto, cycle or airplane body work. This machine is ruggedly built and can shrink or stretch metal with ease at full capacity.
Our MSS-16F metal shrinker stretcher has a rugged floor stand with foot pedal control to actuate the jaws allowing the hands to be free to properly work the material. An ample 6" throat depth allows for hundreds of applications to be worked on compared to smaller throat depth models. The rugged base has wheels allowing for mobility in any cramped shop environment.
This metal stretcher shrinker has quick jaw change over features built in so changing from shrinking metal to stretching metal takes only a couple seconds. This machine comes standard with jaws to stretch metal and shrink metal (note: optional aluminum jaws are available).
Specifications: • Capacity Mild Steel: 16 ga • Throat Depth: 6" • Weight: 78 lbs
P/N 13-08986 .....$1,068.00

BAILEIGH VARIABLE SPEED POWER HAMMER

The Baileigh Industrial PH-19 power hammer is the little brother to the MH-19 Power Hammer . The PH-19 can do many of the same functions as the MH-19, shrink, stretch, dome, edge turn, bead, offset, but at a price that fits any budget. The PH-19 also accepts all readily available MH-19 tooling.
Specifications: • Capacity Mild Steel: 16 ga • Capacity Aluminum: 12 ga • Throat Depth: 19" • Tooling Height Adjustment: 5" • Speed: 0 - 1700 beats/minute • Power Requirement: 120V
P/N 12-02646 .....$8,707.00

BAILEIGH ONE PHASE POWER HAMMER

MH-19 power hammer is the most revolutionary metal forming machine on the market. In summary you can achieve stretching, shrinking, planishing, and doming with critical adjustments on the fly while in operation. This is the ultimate metal shaping and forming power hammer on the market. No other machine is as versatile as the MH-19. The MH-19 includes the following tooling to get you up and running quickly at no extra charge: (1) set of thumbnail shrink dies, (1) flat top die, and (1) Lower planishing die.
Specifications: • Capacity Mid Steel: 16 ga • Capacity Aluminum: 12 ga • Throat Depth: 19" • Length of Stroke: .177 - .550 (adjustable) • Tooling Height Adjustment: 2" • Speed (variable): 0 - 1500 beats/minute • Power Requirement: 220v / 1 phase • Shipping Dimensions: (L/W/H)60"/60"/84" • Shipping Weight: 1600 lbs
P/N 12-02645 .....$20,879.00

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

DE-ICE EQUIPMENT – DIGITAL THERMOMETERS

HANDHELD ANTI-ICING AND DEICING SPRAYERS

Handheld Deicing Sprayers are aircraft-portable pressure sprayers appropriate for defrosting and light deicing operations. They are commercial grade, polyurethane, controlled-pressure sprayers designed to spray hot SAE Type I deicing fluid directly on your aircraft to remove frost, and light snow & ice. They are equipped with a 2 piece brass wand, flat-fan spray pattern, high-capacity, interchangeable nozzle tip that sprays 1.2 gpm of deicing fluid at 20 psi. They will also accept our optional 120-volt, 1100 to 1700 watt electrical immersion heaters to quickly heat the fluid within the sprayer tank to 160. Following are the specifications on the Handheld Deicing Sprayers:

Description	Dimensions	Part No.	Price
1 Gal Sprayer	7" Dia. x 17" H	12-21605	$89.95
2 Gal Sprayer	8.5" Dia. x 19.5 " H	12-21610	$112.95
3 Gal Sprayer	9.5" Dia. x 21" H	12-00499	$139.95

To heat Deicing fluid you need to purchase a heater below.

Heaters					
Voltage	Watts	Amps	Application	Part No.	Price
120	1,100	9.2	12-21605 Sprayer	12-02087	$580.00
120	1,400	11.7	12-21610 Sprayer	12-02088	$679.00
120	1,700	14.2	12-00499 Sprayer	12-02089	$598.00

DEICING CARTS

Aircraft Deicing Gasoline Engine Powered Carts are designed for outdoor deicing operations . These carts use either a 5.0 or a 5.5 hp air-cooled gasoline engine, providing adjustable fluid flow rates and pressures of up to 6.0 gpm/150 psi and 10.0 gpm/300 psi respectively -- sufficient to deice all general aviation, corporate & charter aircraft. The standard carts range in capacity from 40 to 110 gallons, and all can be equipped with an electric immersion heater to heat the deicing fluid to a maximum of 160° F to help melt frost, snow & ice from your aircraft's surfaces. All carts are supplied complete, including steel frame, straight pin hitch, mainwheels, power source, pump, tank, adjustable pressure valve, pressure gauge, high-pressure hose, pistol-grip handgun w/ extension, and adjustable brass nozzle.

Gas powered engines		
Description	Part No.	Price
40 Gallon 3.5 Hp gas Engine with 2500 watt heater and pintel ring.	12-02083	$3,867.00
60 Gallon 3.5 HP gas engine with 2500 watt heater and pintel ring.	12-02084	$3,967.00
Electric powered engine		
Description	Part No.	Price
25 Gallon 12 volt Electric Cart with self Containment kit and pintel ring.	12-02085	$1,599.00
60 Gallon 12 volt Electric Cart with self Containment kit and pintel ring.	12-02086	$2,189.00

NYLON FLANGES IN BATTERY BOX MODIFICATION KIT

-Improve Starting Performance. -Easier Removal & Installation of Battery. -May prolong life of battery and starter. -Less expensive to modify existing box than to replace. -Compatible with our famous "Low Loss" Cable Kits! -Eliminate extra connection on outside of the battery box. -Do away with the troublesome braided negative strap.

Experimental ..... P/N 11-02892 ..... $31.50
STC'd/PMA'd ..... P/N 11-02893 ..... $64.75

BATTERY TERMINAL TOOL

The Right Tool for the Job. * Prevents damage to battery posts. * Steel frame, fits battery wing nuts securely. * Insulated to eliminate shorting, sparks or possible explosions. * Foam grip handle eliminates slipping. * Great gift for pilot or mechanic. P/N 12-16200 ..... $16.50

NICHOLSON HACKSAW BLADES

Nicholson Bi-Metaloy hacksaw blades last twice as long as high-speed steel and 10 times longer than carbon steel. Can operate 20%-50% faster. Practically unbreakable.

GENERAL RECOMMENDATIONS FOR BLADE SELECTION

14 TOOTH – For cutting heavy cross section and for soft materials where maximum chip clearance is needed. P/N 12-19514 ..... $1.94

18 TOOTH – For general shop use, where blade is used on several jobs. P/N 12-19518 ..... $2.45

24 TOOTH – For cross sections of 1/16" to 1/4", such as pipe, angles, small drill rod. P/N 12-19524 ..... $2.45

32 TOOTH – For cutting stock up to 1/16" thick, such as 4130 tubing, sheet metal, BX. P/N 12-19532 ..... $2.45

MICROTEMP DIGITAL INFARED THERMOMETERS

MT-250

MT-100

Digital, non-contact infared thermometers are used for hundreds of practical applications and are essential tools for professional automotive and aviation technicians.

Infared Thermometers (IRTs) are great automotive and race tuning diagnostic tools-and are great for countless diagnostic tasks. Check track surface temperatures, tire temps, brake rotors, header and exhaust temps, air intake temp, heating and A/C vents.

Model	Description	Part No.	Price
MT-250	-67°F - 482°F (-55°C - 250°C) 5:1 distance to sight (D:S) ratio. Super compact size: 2.94" x 1.65" x 0.8"	12-01656	$39.75
MT-100	Temp Range: -27°F - 230°F; Distance to Spot Ratio (D:S) 1:1, Accuracy +/-2°F, Response Time: 1 Second, Dimensions: .75" x 3.25", Battery Type 2 LR44	12-01994	$26.35

WIDE RANGE DUAL PORT DIGITAL THERMOMETER

Features: • Jumbo Display with four digit LCD • Dual Channel K type ports T1/T2 • Accepts K/J thermocouples • Fast response • Hi/Lo temperature alarm • Temperarture hold • Min./Max./Avg. • Clock setting • Relative temperature mode • Low Battery and Overload indicators • Auto Power off • Protective rubber housing • Instrument displays in °F/°C/Kelvin-absolute temperature

P/N 12-01893 ..... $109.95

THE THERMO SEEKER

Ideal for isolating overheated electrical components and hot spots, trouble-shooting HVAC/R and automotive systems, and performance-testing motors and boilers. The Thermo Seeker is a high end infrared thermometer for professional use. With 12 to 1 DS ratio, a wide temperature range of -58° to 1202°F, an user adjustable emissivity, and an included K type probe, this is a good partner for any maintenance and inspection professional. P/N 12-03371 ..... $79.95

MINITEMP PORTABLE INFRARED THERMOMETER

Diagnose problems faster and more easily with the Raytek MiniTemp MT6 infrared (IR) thermometer. The laser point sighting on the MT6 unit helps to direct measurements toward the target, and the large backlit display shows both the current and maximum readings simultaneously. With a protective boot for added durability, award winning ergonomic design and Raytek quality and accuracy, the MT6 model is the perfect introduction to infrared temperature measurements in automotive diagnostics. P/N 12-03153 ..... $98.85

HEAVY-DUTY IR DUAL-LASER THERMOMETER

Features of the IR Long Range Professional Thermometer include a bright, built-in dual laser which provides easy aiming and defines target area, amber back-light LCD display, programmable HI and LOW audible temperature alarms, and high intensity white LED flashlight. Uses 2 x AAA batteries (incl) to provide 180 hours of use. Weight and Dimensions: 16 ounces (with batteries,magnets); 8 x 8 x 2.8 inches. Temp Range: -76° to 1832°F. P/N 12-03152 ..... $259.00

INFRARED THERMOMETER WITH STAR BURST LASER TARGETING

Ideal for isolating overheated electrical components and hot spots, trouble-shooting HVAC/R and automotive systems, and performance-testing motors and boilers. Features: • 12:1 distance-to-spot (D:S) ratio • IRT measurement range -58° to 1202°F (-50° to 650°C) • "K" type thermocouple measurement range: -146° to 2498°F (-99° to 1370°C) • Includes "K" type thermocouple with 0° to 500°F (-18° to 260°C) range • Automatically stores last 10 readings for recall • Automatically holds measurements and displays Min/Max/Avg/Dif session values • Settable high and low temperature alarms • Adjustable emissivity from 0.1 to 1.0 (in 0.01 steps) • Auto Power Off • Power Source: 1 "9V" battery (included) P/N 12-03355 ..... $79.85

TO

VALVE WOBBLE TEST FIXTURES

The Valve Wobble Test Fixture for parallel valve Lycoming engines is used to comply with LycomingSB–388a. Quality made of aluminum and alloy steel, it is easy to use with no set screws or feeler gauges required. Allows direct reading of wobble from dial indicator. Note: Will work on a angle valve engine.

Fixture without indicator ..... P/N 12-21500 ..... $137.95
Fixture with indicator..... P/N 12-21505 ..... $205.95

DISTRIBUTOR BLOCK SPRING INSTALLATION TOOL

This tool facilitates the proper installation of contact springs on Bendix magnetos. The O–ring locator ring assures proper location of the tool in the contact tower. Features knurled body grip and ball plunger grip. Made of alloy steel

P/N 12-21510 ..... $84.75

VALVE SPRING COMPRESSOR

This tool is used to compress valve springs during valve removal and installation. It is ergonomically designed for shop and field use and comes with special pivot pin. Features alloy steel construction with nickel plating. P/N 12-00202 ..... $76.75

VALVE LASH ADJUSTING TOOL

This tool greatly reduces the time required to adjust valves and improves the accuracy of the adjusting operation. Used on Lycoming O 235 and O 290 series engines. Quality constructed of alloy and toolsteel.

P/N 12-21550 ..... $196.75

ROCKER ARM SHAFT REMOVAL TOOL

These simply bolt to the head and the knurled knob screws down to compress the valve spring allowing the shaft to be slid out with no spring pressure.

P/N 12-03227 ..... $39.95

PUSH ROD FLARING TOOL

Expanding ball type tool produces a flare every time. Balls rotate inside housing, expanding it into aluminum boss. 1 lbs (0.5Kg) shipping weight.

P/N 12-03372 ..... $89.75

ELECTRODE SPREADING TOOL

This tool is used to increase the electrode gap on all massive electrode spark plugs. It is constructed from heat treated alloy steel and is nickel plated.

P/N 12-51520 ..... $19.50

SPARK PLUG SERVICE KIT

Our spark plug service kit includes the Precision Gap gapping tool which is easy to use, features fine thread adjuster and ball pressure tips, and works on all massive electrode plugs. Also includes the 18mm Thread Cleanout Tool with spring loaded jaws which offer maximum thread penetration & control carbon build–up in threads. Completing the Kit is a double–end Gap Plug Gauge which features an aluminum handle and is easy to use. Kit comes complete with durable birchwood storage case. P/N 12-21525 ..... $99.85

THROTTLE SHAFT BUTTERFLY SCREW STAKING TOOL

This quality made alloy steel tool facilitates the proper staking of throttle shaft butterfly screws and eliminates the possibility of damaging the carburetor during staking. The tool can easily be operated by one person on the bench without chisels, special fixturing or hammers. All wear components are easily replaceable for long service life.

P/N 12-21528 .....$129.50/ea.

BENDIX MAG LOCK

This Bendix Mag Lock works on S4 and S6 and other Bendix Mags. To use simple place a cotter pin loosely into lower plunger hole. Screw sleeve into magneto case. Align red slot in plunger parallel to mag tooth gear. Remove cotter pin to engage gear tooth. Dimension: 2-3/4" x 1/2" x 3/4" ....

P/N 12-02243 .....$53.75

SAFETY MAGNETO LOCK TOOL

This handy tool fits most Bendix magnetos and prevents damage to distributor gear teeth brought about by accidental turning of the engine during magneto installation. Use for E gap or engine timing. Body taper locks into timing window. Polyurethane rubber throughout.

P/N 12-21535 ..... $9.95

LYCOMING TIMING POINTER

This tool is used to align timing numbers and marks to the crankcase parting line on Lycoming engines. It permits timing from the marks on the aft side of the flywheel. A spring clip holds the tool to the flywheel.

P/N 12-21540 ..... $47.75

CONTINENTAL O–200 TIMING POINTER

This tool is used to align timing numbers and marks to the crankcase parting line on the Continental O–200 engine. It is held to the propeller flange with magnets, and eliminates the need for all other timing angle devices and TDC indicators. Quality made from delrin and tool steel. Greatly simplifies the timing of new magnetos and periodic timing checks. P/N 12-21545 ..... $42.75

SIDEWINDER SPEED WRENCH

The Sidewinder Speedwrench specialty tool was developed to counter the frustrations of using standard socket wrenches especially in applications where excessive repetitions are required to install or remove long bolts; or where there is not enough resistance involved to allow the ratchet to function; or where there is not enough working space for efficient use of the standard ratchet wrench. The sidewinder can cut work time in half for professional mechanics and aircraft builders. Now being used by major racing teams, the Sidewinder is a revolutionary addition to every tool box.

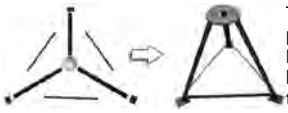
1/4" ..... P/N 12-21109 ..... $38.90
3/8" ..... P/N 12-21100 ..... $38.90
1/2" ..... P/N 12-21110 ..... $38.90

ENGINE OVERHAUL STAND

This inexpensive engine overhaul stand is ideal for actual overhaul and for storage of engines. Constructed of heavy duty steel, it features three legs which allow it to sit level on uneven floors and comes complete with an adapter spacer block. The stand is 24" tall with made for user installed casters and comes predrilled for Continental A–65 through O–520 series engines and Lycoming 65 through O–720 engines. A quality engine stand at an affordable price.

Overhaul Stand ..... P/N 12-21555 ..... $238.00
Wheel Set for Stand..... P/N 12-00919 ..... $44.50

ENGINE OVERHAUL STAND KIT



The engine stand kit has all of the components to construct an engine stand. Beginning at the top; the engine stand kit includes (1)The top plate. Designed to bolt down the engine flange to the stand. (2) Three legs that are pre-cut to the proper angle. (3)Three spreader bars to hold the base of the stand from spreading apart. (4) Three feet to stabilize the base and allow installation of casters. The kit is ready to weld. 24" tall when finished..

P/N 12-01364.....$189.75

CONTINENTAL ENGINE MAG TIMING TOOL

Aluminum CNC tool manufactured in Alaska for simple and perfect magneto timing. Simply position engine on #1 TDC compression stroke. Lube grommets. Put this tool on the top two propeller nuts and sight down top case halves to see exact mag timing. Now there's no need for propeller protractor cones! P/N 12-02817.....$39.95

15-IN-1 STANDARD SCREWDRIVERS

This standard driver is loaded with 7 double end Professional quality bits. This assortment provides the 14 most popular tips for driving screws. The shaft opening also serves as 1/4" hex driver. Retractable bit cartridge™, Palm Saver Cap™, EZ-Guide™ Collar.

Standard .....P/N 12-03693.....$17.75
Tamper Proof .....P/N 12-03694.....$23.50

TO

LYCOMING BAFFLE SPRING COMPRESSOR

Our top quality Lycoming Baffle Spring Compressor speeds up the removal & installation of cylinder baffle springs. It eliminates the danger of broken or bent cylinder fins caused by use of screwdrivers and punches. This tool is easy to use and features 2 pivot locations for parallel and angle valve cylinders.

P/N 12-30200.....$79.75

VALVE SPRING COMPRESSOR TOOL

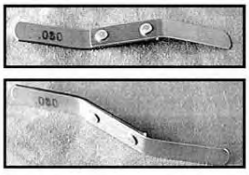
This unit will work on Continental 65 thru 0300, and some 0-470's. Lycoming 0320 & 0360, and most any cylinder with a vertical valve constructed head.

It is extremely simple to use. Place Spring Compressor in drill press, and a length of wood in cylinder (to keep valve seated). Depress and remove valve stem clips, and spring. Removes valves in a minute. P/N 12-02072.....$54.75

LYCOMING VALVE SPRING COMPRESSOR

This cast aluminum alloy valve spring compressor fits Lycoming parallel valve and angle valve horizontally opposed engines. An excellent tool at an economical price. P/N 12-21520.....$59.95

LYCOMING TAPPET GAUGE



Similar to Lycoming Gauge ST23, this tappet gauge is Rockwell hardened to 48-52 and precision ground to .028 and .080. This gauge is a must for professional aircraft mechanics.

P/N 12-00918.....$42.75

EAR ISLAND REMOVAL TOOL

When substantial quantities of material have to be removed from the exhaust port, it may be necessary to also remove the island around the exhaust stud area. The ear island removal tool and pilot can be used to accomplish this without the use of power tools.

P/N 12-17608..... $103.95

ECONOMIZER VALVE SETTING TOOL

The economizer valve adjusting tool is a simple, functional gage that eliminates the hassle of using a depth mic. The tool is precision made to assure required accuracy.

P/N 12-17500..... $189.95

DRILL PILOT SLEEVE & BOLT HOLE BULLET

BOLT HOLE BULLET - Every tool box should have a set. Simply tap bullet into bolt hole requiring alignment, and tap bullet on through with proper AN Bolt Set of 5 (1/4, 5/16, 3/8 7/16 and 1/2inch)

P/N 12-02093.....$19.90

HANDY BEARING PACKER

Quickly Flushes Out Old Grease and Repacks Bearings with Less Mess.

The Handy Packer works on bearings up to 3 1/2" O.D. The grease stays in the tool cavity, not on your hands. To pack a bearing, place the bearing on the piston. Press down on the cap until the old grease is forced out and the new grease shows on top of the bearing. P/N 12-02578 .....$25.95

LINK® TOOLS LOCKING SOCKET SETS

7-PC LINK 1/4 & 3/8 INCH PROFESSIONAL UPGRADE AND DELUXE PROFESSIONAL SET - LINK Tools are available as professional upgrade sets for customers that wish to upgrade their tool chests with just a few LINK Tools, Additionally, a variety of sets with sockets and bits are available in convenient mobile cases. Adding a few LINK Tools upgrades your entire tool chest! The revolutionary LINK Tools are forged from solid steel, with a distinctive chrome finish for outstanding durability and strength. LINK Professional Upgrade Sets are available and work with all detent sockets. Increase the productivity of every tool in your chest! Comes with:• Locking Ratchet • Locking Unidriver® tool • Locking U-Joint • Locking Palm Wrench • 2" Locking Extendor™ Bar • 3" Locking Extendor™ Bar (1/4" Drive Only) • 6" Locking Extendor™ Bar • 9" Locking Extendor™ Bar *available in deluxe set with Ratcheting Unidriver

Description	Part No.	Price
3/8" (38007) Up-grade Set	12-01702	$111.95
3/8" (38009) (with Ratcheting Unidriver) Deluxe Up-grade Set	12-01703	$144.95
1/4" (25007) Up-grade Set	12-01704	$94.00
1/4" (25009) (with Ratcheting Unidriver) Deluxe Up-grade Set	12-01705	$117.95
Electric Tool Adapter 3"L	12-01706	$23.50

41-PC. LINK® 3/8" DRIVE SYSTEM SET - The revolutionary 3/8" Drive LINK® System tools are forged from solid steel, with a distinctive chrome finish. The set includes: [1] Universal Joint, [1] Unique UniDriverTM Drive, [1] LINK Automatic-Locking Ratchet, [2] ExtendorsTM (2 and 6-inch), [2] Spark Plug Sockets (5/8 and 13/16-inch), [9] SAE 6-Point Sockets (5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, and 13/16-inch), [11] Metric 6 Point Sockets (8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18-mm), [5] Socket Mounted Hex Bits (3/16, 5/16, and 3/8-inch, and 6 and 10-mm), [5] Socket Mounted Torx or Star Bits (T- 25, T-30, T40, T45, and T-50), [4] Socket Mounted Screwdriver Bits (5-mm slotted, 9/3" slotted, #1 Phillips and #2 Phillips), and a Case.

P/N 12-00807 .....$59.75

41-PC. LINK® 1/4" DRIVE SYSTEM SET - LINK® extensions and sockets will not pull apart until you unlock them. A small pull on the locking device lets the socket or extension fall free. The new 1/4" Drive Quick- Lock™ Set comes with 12 pt. sockets in a new custom-fitted carrying case that floats and contains storage space. The set includes the following 6 Link-Lock™ Drive Tools: [1] Universal joint, [1] All-metal UniDriver® [1] 36-tooth Slide Button Quick Release Positive Locking Ratchet, [3] ExtendorTM Extensions (1.5, 3, 6-inch); 16 12-point Sockets: [8] SAE (5/32, 3/16, 7/32, 1/4, 9/32, 5/16, 11/32, and 3/8 inch), and [8] Metric (4, 5, 6, 7, 8, 9, 10, 11 mm); 19 dingle piece machined steel socket bits: [6] Torx (T-8, T-10, T-15, T-20, T-25, T-27), [9] Hex (5/32, 3/16, 7/32, and 1/4 inch, 3, 4, 5, 6, and 7mm), [4] Screwdriver (#0 and #1 Phillips, 5.5 and 6.5 mm slotted); and a custom-fitted Case with storage space..... P/N 12-02840 .....$125.95

LINK® TOOLS PALM WRENCH & SPEEDER - LINK® extensions and sockets will not pull apart until you unlock them. A small pull on the locking device lets the socket or extension fall free. The locking device is similar to those found on air hose co plings, but is a lot easier to lock and unlock. Hand spin, then attach your ratchet to torque down. Not with old fashioned ball bearings, but a space age case-hardened nickel plated steel pin. Or, leave the Palm Wrench on your ratchet and use it as a handy spinner! Exceeds 130% of ANSI standards.

2" Palm Wrench/Speeder 3/8-in.Drive .....P/N 12-00808..... $14.75

1-1/2" Palm Wrench/Speeder 1/4" Drive.....P/N 12-00809..... $13.75

LINK® BRACE STYLE SPEEDER 16.5 INCH - Just the accessory for tight places where there's not much room to turn. Hand spin, then attach your ratchet to torque down. Made of aluminum and steel. Highly polished and nickel chome-plated for durability, rust resistance, and beauty. Exceeds 130% of ANSI standards. 1/4" Drive, 16.5" Speeder #25557.

P/N 12-01701..... $34.50

LINK®1/4"DR.LOCKINGELECTRIC-TOOLADAPTER - For use with your battery-operated electric drill or screwdriver to always get secure locking and quick speed on your sockets and attachments. One end goes into the chuck of your power tool and the other clicks into a socket, socket-mounted accessory, or other LINK drive tool with the same Quick-Lock technology that gives you Hand-To-Work locking.

P/N 12-00933 ..... $12.95

TO

ENGINE TOOLS

PRECISE-GAP SPARK PLUG GAPPING TOOL

Precise Gap is a simple tool to gap two-, three- or four electrode 18 mm sparkplugs. Only 2" overall - comfortably handheld. Precision made of stainless steel. "T" handle adjusters move the ground electrodes closer to the center electrode until wire feeler identifies proper gap. Adjusters have fine thread with ball tips for precise movement. Don't buy an inferior imitation at a higher price! P/N 12-11600 .....$21.50

GAP PLUG GAUGE .014 TO .018

Many customers have indicated that they have had difficulty obtaining setting wires for gaging the plug gap. We now provide a handy tool at reasonable cost. No need to buy extra gauge sizes that you don't need. Furnished with protective end caps. P/N 12-17100.....$10.90

SPARK ON

The annual and 100-hour inspections are tedious, dirty and time-consuming jobs. To make your life easier, we introduced the Spark-On DC resistance tester for shielded plugs. Before installing or re-installing a spark plug its internal resister should be checked to be between about 500 and 5,000 Ohms. Spark-On will perform these checks quickly and easily for years to come. This small, lightweight, handheld unit is simple and makes the test a breeze.

P/N 12-03526 .....$49.95

THREAD CLEANOUT TOOL

In servicing spark plugs, a common problem is carbon accumulation in the jug threads. Cleaning these threads regularly can save big money by preventing thread damage and the need to pull the jug and install thread inserts. This specially designed tool works very well to limit this problem. It provides maximum depth penetration and its unique spring action assures that there will be no enlargement of the existing thread pitch diameter. P/N 12-17200 .....$36.85

COMPASS ADJUSTING TOOL

The compass screwdriver is a great little tool that is totally non-magnetic, but also overcomes the shortcomings of solid brass or aluminum tools. This tool has a nice hex aluminum handle and a stainless steel driver insert. No need to worry about damaging the tip on a frozen compensator screw, and you can also remove the cover plate screws with the same tool

P/N 12-17300 .....$11.50

DIGITAL ELECTRONIC TORQUE WRENCHES

These torque wrenches track both torque and angle measurements eliminating the need for angle gauges and protractors. Backlit screen, and teardrop sealed pivot head ratchet will. Angle measurement not affected by ratcheting. Shock resistant housing. Includes storage case. 3/8 drive range 10-100 Ft/Lbs, length 17.75 inches. 1/2 drive range 25-250 Ft/lbs, length 26.5 inches. Torque accuracy +/- 2% CW, +/- 3% CCW from 20% to 100% full scale. Angle accuracy +/- 1% of reading.

3/8 Inch Drive ..... P/N 12-03241 ..... $286.95
1/2 Inch Drive ..... P/N 12-03242 ..... $325.00

TEMPEST AA472 OIL FILTER TORQUE WRENCH

The Tempest AA472 oil filter torque wrench is a great addition to any toolbox. Its 1" hex allows easy installation or removal of all oil filters. The torque wrench also comes present to 17 foot pounds and is easily recalibrated

P/N 08-07023 ..... $58.75

TEMPEST AA473 OIL DRAIN TOOL

Tired of messy oil filter changes? Tempest oil drain tool with a twist of the knob drills a hole in the filter and allows the oil to drain out of the filter into your container. No mess, easy to do and inexpensive. Tempest improved the popular AA473 Oil Filter Drain Tool by redesigning the swivel fitting to a smaller, more compact design. The new fitting also allows for easier use of the tool because of its "true" swivel characteristics. If you want to upgrade your previously purchased AA473 Oil Filter Drain Tool you can purchase the fitting individually.
Can only be used on Tempest Oil Filters.

Oil Drain Tool.....P/N 12-02248 .....$24.70
Replacement fitting.....P/N 12-02577 ..... $4.35

S4-1 RACE REMOVAL TOOL

A & P mechanics will find this S4 outer bearing race removal tool to be very effective and well priced. Hemispheres held together by the "O" ring are inserted together behind the bearing race. The pilot is then inserted to expand and lock the halves & push out the race. You'll like its simplicity and ease of use.

P/N 12-17601 .....$95.75

S4-2 RACE REMOVAL TOOL

The S4 magneto drive end inner race removal tool works in conjunction with a standard bearing puller. The split gripper ring fits behind and around the race and is captured in the puller ring by 2 opposing set screws. A groove on the puller ring provides the point of attachment for the puller arms. P/N 12-17602 ..... $127.95

S4-3 RACE REMOVAL TOOL

The S4 magneto seal installation, inner and outer race installation tool is three tools in one and is proportioned in such a way that it is easily accommodated by most small bench arbor presses.

P/N 12-17603 .....$89.75

TIMING JUMPERS

The timing jumpers are easily used for timing magnetos without removing the breaker box cover. Simply remove the "P" lead and replace with timing jumper. Then hook up timing light leads. These handy devices have proven to be a real time saver and, in some cases, an outright necessity. SOLD IN PAIRS

Bendix S4/S6..... P/N 12-17700 ..... $45.50/pr.
Bendix D2200, D3000, D3200
P/N 12-17710 ..... $45.50/pr.

MAGNETO ROTOR BEARING SETTING GAUGE

Determines condition of excess bearing clearance and allows for precise adjustment of new bearings to prevent over or under preload. Available with or without dial indicator. Choice of 3/8-16 or 3/8- 24 threaded shaft fittings.

Kit Description	Thread	Part No.	Price
Setting Gauge & Ind.	3/8-16	12-17801	$149.65
Setting Gauge & Ind.	3/8-24	12-17802	$150.95
Setting Gauge & Ind.	Both	12-17803	$178.50
Setting Gauge, No Ind.	3/8-16	12-17901	$98.75
Setting Gauge, No Ind.	3/8-24	12-17902	$69.85
Setting Gauge, No Ind.	Both	12-17903	$108.50

STRUT LIFT JACK

In many instances, simple tire changing, bearing packing, etc., can be a real problem unless the wheel can be lifted in a safe, secure manner. The strut lift shown accomplishes this easily. A specially designed lift pad securely captures the strut elbow or gear leg. The compact jack can be stored in your toolbox.

P/N 12-18000 ..... $126.95

THROTTLE SHAFTBUSHING KNOCKOUT

The throttle shaft bushing removal tool is very competitively priced and will help you avoid a jury-rigged operation that could damage an expensive carburetor body. Now there is no reason not to have one. They are available and affordable.

P/N 12-17400 ..... $149.50

SPRING TOOL

Get a handle on those springs! The "C" shaped tip fit the bend in spring end and won't slip. Can be used to install and remove springs on anything!

P/N 12-16945.....$12.95

TO

ENGINE TOOLS

ATS PISTON RING COMPRESSOR KIT

The ATS Piston Ring Compressor features a quick-change design to speed up piston ring installation. It includes the famous Hastings Ring-O-Matic® pliers and bands that operate in all positions: not just vertically or horizontally. The pliers incorporate a precision locking action for exact holding and quick release. The complete kit includes the Ring-O-Matic® pliers and one of each of the following size bands: 3-7/8" to 4-1/8", 4-1/8" to 4-1/2", 4-1/2" to 4-3/4", 4-3/4" to 5", 5" to 5-1/4", & 5-1/4" to 5-3/4"

Description	Part No.	Price
Kit	12-03154	**$119.96**
Compressor Pliers	12-03155	**$28.76**
Piston Ring Compressor Band 3-7/8"TO 4-1/8"	12-03156	**$15.96**
Piston Ring Compressor Band 4-1/8"TO 4-1/2"	12-03157	**$15.96**
Piston Ring Compressor Band 4-1/2"TO 4-3/4"	12-03158	**$17.56**
Piston Ring Compressor Band 4-3/4"TO 5"	12-03159	**$17.56**
Piston Ring Compressor Band 5"TO 5-1/4"	12-03160	**$17.56**
Piston Ring Compressor Band 5-1/4"TO 5-3/4"	12-03161	**$23.96**

PISTON RING COMPRESSOR SET

The most efficient, versatile and dependable tool of its kind on the market. Designed to operate both vertically and horizontally. Fine-tooth ratcheting lock permits bands to be contracted in extremely small increments. Positive lock insures a free hand. Eliminates broken rings during installation. Set includes compressor pliers and the two bands (1123, 1125).

P/N	Size	Engine Application
1123	3-7/8" to 4-1/8"	Cont. A-65, C-85, C-90, 0-200, 0-300
1125	4-3/8" to 4-5/8"	Cont. E-225, IO-470

Set .....P/N 12-10900 ..... **$79.95**
Piston Ring Pliers #1114.....P/N 1114 ..... **$42.50**
Individual band # 1123 for 3-7/8 .....P/N 1123 ..... **$18.65**
Individual Band # 1125 for 4-3/8 .....P/N 1125 ..... **$19.95**

CYLINDER BASE NUT WRENCHES *(CONTINENTAL)*

Made of top quality tool steel. 12 Point with 1/2" square drive, 13" long.
Set of 4..... P/N 12-11200 ..... **$68.75**
or order individual wrenches below.

LYCOMING & CONTINENTAL CYLINDER BASE NUT WRENCHES

Wrench Part #	Size	Engine Application	Price
2882	9/16"Hex	C-85, 0-200, 0-300, G0-300, E-185, E-225, 0 & IO-470, IO-360, IO-520	**$18.95**
2882-2	1/2" Hex	A-65, C-85, 0-200, 0-300, G0-300, E-185, E-225, IO-360	**$18.95**
2882-3	5/8" Hex	A-65, 0-470, IO-520	**$18.95**
2882-4	3/4" Hex	No longer used on Cont.; Used on Lyc. 0-390D, D2 and all wide deck Lyc engines	**$18.95**

CYLINDER BASE NUT WRENCHES

1/2" Allen Head Hex...P/N 64942 . **$48.50**

3/8" Allen Head Hex...P/N 64943 . **$48.50**

ATS SPARK PLUG GAPPER

Sure-Gap is designed for use on all massive electrode aircraft spark plugs. Saves time and money, eliminates guessing of plug gap, prolongs plug life and ensures peak performance. 18mm. 1lbs shipping weight.
P/N 12-01682..... **$9.95**

ATS SPARK PLUG GAP GAUGE

Convenient Gap Gauge for all Champion and Tempest massive electrode spark plugs. Slider design keep gauge wires stowed away when not in use.
- Retractable slider design
- Includes wires for .015", .019", .018", and .022"
- Works with all Champion and Tempest Massive Electrode Spark Plugs
- Replacement Wire Gauges are available. 1lbs shipping weight.

P/N 12-01692..... **$15.96**

ATS SPARK PLUG GAPPER & GAUGE 415K

A low-cost efficent gap setting tool for closing gaps on massive-electrode Aviation Spark Plugs. Great design allows it to clamp on to your workbench for easy gapping.
Features
- Manufacturued from 4160 Tool Grade Steel
- CNC Machined surfaces for exact alignment
- Includes ATS450 Feeler Gauge
- Clamps to workbench for easy one-handed operation
- Compatible with all Champion, and AutoLite Massive Electrode Spark Plugs
- 2lbs shipping weight. P/N 12-01691 ..... **$47.96**

ATS SPARK PLUG THREAD CHASER

Chaser cleans threads in spark plug hole of dirt, carbon build-up, and metal particles. Double ended for both 14mm and 18mm threads. Neoprene band on hex drive holds tool securely in any 13/16" deep-well spark plug socket. 1lbs shipping weight. P/N 12-01683 ..... **$7.95**

ATS MAGNETIC SPARK PLUG SOCKET

The new Spark Plug Socket features a thin-walled design to get into to the tightest confines. Magnetic interior guarantees that you won't accidentally drop the plug during installation or removal. Works with all Champion and Tempest Aviation Spark Plugs.
- Works with all Champion and Tempest Aviation massive electrode Spark Plugs
- Thin-Walled design to get to the tightly spaced plugs.
- Magnetic interior holds spark plugs and keeps them from falling out
- 7/8" Socket
- 3/8" Drive
- 3-1/2" Overall Length
- Made of Chrome Vanadium Steel
- 1lbs shipping weight.

P/N 12-01693..... **$23.96**

3/8-INCH DRIVE SPARK PLUG SOCKET

Chrome Socket, Deep Length, SAE. Drive Size: 3/8". Number of Points: 6. Size: 7/8". Overall Length" 2-3/4".
P/N 12-00710..... **$22.60**

ATS SPARK PLUG CLEANER

Cleans any size plug without changing grommet. Has 2-way valve (blast or air) and comes complete with abrasive powder. Ready to use.
P/N 12-01684..... **$25.95**

AIRCRAFT SPRUCE PLUG MAINTENANCE KIT

The Aircraft Spark Plug Maintenance Kit includes an aircraft spark plug tray, air-powered spark plug cleaner, feeler gauge, spark plug gap setting tool, aircraft spark plug socket, a set of 8 spark plug gaskets and a bottle of spark plug thread lubricant and anti-seize compound.
P/N 12-02250.....**$120.95**

HEAVY DUTY SPARK PLUG GAPPER

This professional heavy-duty spark plug gap setting tool is completely portable for field use, yet precise enough to set gaps to within 0.001". The precision screw drive with its comfortable knurled knob gaps any type of Massive Electrode Aviation Spark Plug reliably and without any danger of damaging the spark plug. Simply screw the spark plug into the base of the tool and turn the knob to the required gap width. Very easy to use. Sets gaps to within 0.001". Precision CNC Machined from 4160 Tool Grade Steel. Attractive Nickel-Cadmium finish resists rusting . Knurled palm grip keep the tool from slipping in hands. Compatible with all Champion, and AutoLite Massive Electrode Spark Plugs.
Gapper..... P/N 12-03389..... **$27.96**
Gapper with Gauge ..... P/N 12-03390..... **$23.96**

TO

SPARK PLUG & FILTER TOOLS

CT-415AV GAP SETTING TOOL

A low-cost efficient gap setting tool for closing gaps on massive electrode type aviation spark plugs. May be used as a hand tool, mounted on a bench or held in a vise. Furnished with one adapter for 18mm spark plugs. (P/N GT-204) and one CT-450 gap gauge. Wt. 1-1/2 lbs., 7-1/2" high.

P/N 12-00796 ..... $198.75

CT-450 RETRACTABLE GAP GAUGE

High-impact red plastic case contains four sets of accurate, retractable "go" and "no go" wire gauges: 2 sets .015-.019 (.016 Nom.) 2 sets .018-.022 (.019 Nom.) Length: 3-1/2". Wt. 1-1/4 oz

P/N 12-00797..... $19.85

CT-457 FINE WIRE GAP SETTING TOOL

Designed exclusively for adjusting fine wire electrode spark plug gaps. Slot fits iridium ground electrodes for quick, safe adjustment. Size: 2-1/4" x 2" x 1/4" (5.7 x 5.0 x 0.63 cm) Weight: 1/2 oz. (14 g). Packed individually.

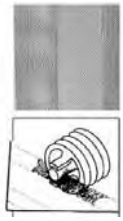
P/N 12-00798..... $36.50

LEAD-MASTER WRENCH SETS

Reduce time to remove and install sparkplug ignition leads. Permit shortarc turning due to 12-point grip head.

CT911 3/4" "T" Handle Box Wrench.....P/N12-00799 ..... $106.75
CT912 7/8" "T" Handle Box Wrench.....P/N12-00801 ..... $108.85
3/4" & 7/8" Open End Box.....P/N12-00802 ..... $109.75

SCREEN CLEAN SPARK PLUG CLEANER



The new Screen Clean tool works great for field cleaning of spark plugs. It is non-abrasive and can be used for several cleanings. Simple to use—just work the bi-fold edge through the gap with several strokes before setting the gap. Actually removes deposits blasting cannot reach.

P/N 12-15610 ..... $5.90

SPARK PLUG TRAY

This unique spark plug tray is quality made of PVC plastic. Each holding position has 18 mm thread so that plugs screw in for positive holding. This tray permits simultaneous inspection of either the electrode or barrel end of plugs, protects plugs from damage, and can be stored in any position. Optional carrying strap attaches to ends.

P/N 12-30185.....$39.70

PLUG-A-LONG SPARK PLUG TRAY

Holds 12 spark plugs each hole stamped with cylinder number also marked top and bottom so each plug can be identified easily, no mix-ups. Plugs can be serviced and returned back to where they were removed. a must for aircraft mechanics. Made from 18 gauge steel. Blue powder coat finish. Dimensions: W=4.0", L=8.0", H=2.6. P/N 12-00974..... $27.50

RADIAL ENGINE SPARK PLUG HOLDER

18 plug holder is made out of steel. Powder coated federal yellow.

P/N 13-11617 ..... $34.95

HEAVY DUTY SPARK PLUG GAPPER KIT

A complete spark plug gapping solution for field or bench use includes the Heavy Duty Spark Plug Gapping Tool to accurately set your spark plug gaps to within 0.001". You also get a set of wire feeler gauges to verify gap size. If you should happen to accidentally over-gap the plug, then the included Gap Expansion Tool will get you back on track. And finally, included in the Kit is an Electrode Erosion Gauge to make sure that your gapped plugs are still in serviceable condition. P/N 12-03359 ..... $47.96

SLICK T150 GAP GAUGE

Tool Gauge Gap. Will work on Lycoming and Continental engines.

P/N 12-00302 ..... $14.50

OIL FILTER DRAIN TOOL

This oil filter drain tool permits draining spinon oil filter prior to removal from the engine. Just clamp on to rear of filter with cutter, punch small air bleed at the top of the housing with anice pick, remove cutter and oil will drain freely in-can or hose-extended funnel.

P/N 08-04200 ..... $46.85

MODEL 2500 GAP SETTING TOOL

Complete with accessories, gauges and instructions for use. A precision gap setting tool for all massive electrode sparkplugs. Permits simultaneous adjustment of 2 opposite prongs without removing the spacing gauge. P/N 12-15500 ..... $399.00

CT-446 SPARK PLUG TRAY

Steel tray holds up to 12 plugs. Speeds handling of used or new plugs. Holes numbered to correspond with engine cylinders. Protects against shielding barrel contamination. Dims: 5"H x 8"L x 3.5"W. Wt. 1 lb.

(12 plug tray).....P/N 12-00795.....$59.85
(18 plug tray).....P/N 12-00162..... $148.75

TEMPEST AA446 SPARK PLUG TRAY

Constructed of high quality metal protecting the spark plugs from damage. Tray design is sturdy and balanced. Rubber feet on the bottom of the tray help keep the tray in place. Numbered spark plug slots.

P/N 07-02510.....$52.75

SPARK PLUG CLEANER TESTER DUAL-VOLTAGE

Works with both 120V and 220V sources, and has advanced circuitry to prevent thermal overload during heavy use. Uses a powerful blast of air and abrasive to thoroughly remove carbon deposits from plugs. Manufactured to the rigorous ISO 9002 standard and carries a full one-year warranty. Specifications: • Operating voltage: 115V or 220V AC Single-phase 50/60Hz • Dimensions: 19.3" (49cm) x 11" (28cm) x 10.4" (26cm) • Weight: 22.5 lbs (10.2kg) • Accessories included: 12mm, 14mm and 18mm spark plug adapters (2pcs each); 12mm, 14mm and 18mm cleaner gaskets (1 each); Adapter case (1pcs); Aviation Massive Electrode adapter plug (1pcs), Abrasive 2 lbs (900g) P/N 12-03184 ..... $579.95
Replacement Abrasive Bag..... P/N 12-03329 ..... $37.90

MODEL 2600A VIBRATOR/CLEANER

Champion now makes it easier than ever to clean heavily lead-fouled spark plugs with this new, improved Vibrator/Cleaner. Each unit is shipped with all accessories required for cleaning fine-wire and 2-prong massive electrode aviation spark plugs. This unit features quick-change cleaning head assemblies, easy and inexpensive replacement of single cutter blades, improved heavy duty top-mounted switch and improved vibrator motor for faster cleaning and maximum durability.

Model 2600A.....P/N 12-15600.....$1,089.00

NO. 91893 ABRASIVE COMPOUND

For use in CT-475AV Dry Abrasive Cleaner/Tester. Contains 1 full charge (15oz.). Note: This main item no longer ships with a tip unless it is ordered separately.

P/N 91893.....$7.70

622 CHAMPION RUBBER TIP

P/N 12-94023 ..... $3.95

TEMPEST SPARK PLUG RESISTANCE TESTER

Tempest has developed an easy-to-use tester that makes it very efficient for IA/AP's to test the resistance in all aviation spark plugs. The IA/AP simply places the spark plug, barrel side down over the contact post and touches the other lead end to the firing end of the center electrode. If the light is green, the spark plug resistance is below 4kÙ (thousand ohms). If both the green and red lights are on, then the plug is between 4 - 5kÙ. This is acceptable for serviceable plugs. If the red light is on alone, this indicates a resistance value in excess of 5kÙ and the plug must be discarded and replaced.

P/N 08-07462..... $129.75

SPARK PLUG GAP EXPANSION TOOL

Expands the spark gap of any massive electrode aviation plug safely and efficently.

P/N 12-03391 ..... $13.56

TO

ULLMAN UNIVERSAL SPARK PLUG GAP GAUGE

This gap gauge provides easy accurate spark plug adjustment. Features flanged edge for electrode bending and beveled round hole for opening gap. 1-1/2" diameter. Wt.: 0.8 oz. Scaled from .020" to .100". Pewter plating makes the inches more legible for user to read. Also available in metric scale (0.5 mm to 2.4 mm).Gap gauge (inches)

P/N 12-21375 ..... $1.65

CHAMPION CT-482 SPARK PLUG EROSION GAUGE

Champion CT-482 spark plug erosion gauge provides an easy, accurate method of determining whether your plugs have reached their maximum wear limit. Calibrated to reject plugs after their electrodes have eroded to at least one-half their original thickness. .

P/N 12-00791 ..... $7.60

SPARK PLUG EROSION GAUGE

Makes it easy to determine if you plugs have reached the end of their useful life. Simply gap your plug per manufacturer's recommentation and then check to see if the electrodes fit through the hole of the gauge. If they enter the hole, then your plug is too worn and must be replaced.

P/N 12-03392 ..... $6.95

SPARK PLUG VIBRATOR CLEANER

Anyone that cleans a lot of spark plugs knows that a spark plug vibrator cleaner is the only way to go to break up and clean out stubborn lead deposits. A spark plug abrasive cleaner is great for the finish cleaning, but it just won't take care of the lead deposits found down around the plug porcelain. Aircraft Spruce now offers an inexpensive way to professionally clean spark plugs. This 115V vibrator cleaner is small, light weight, easy to use. It is great for the pilot or mechanic that wants to carry one along — just in case. 90 day guarantee.

Cleaner ..... P/N 12-21355 ..... $29.50/ea.
Extra Cutter Blades ..... P/N 12-01147 ..... $5.75/ea.

SPARK PLUG CLEANER

This economical spark plug cleaner cleans any size spark plug without changing the grommet. Features a 2-way valve and comes complete with abrasive powder and bag.

Cleaning Kit-2.2 lbs. ..... P/N 12-00786 ..... $24.50
Extra Powder-1.8 lbs. ..... P/N 12-00787 ..... $2.95
Extra Bag-0.06 lbs. ..... P/N 12-00788 ..... $6.65

CT-709 OIL FILTER ADAPTER WRENCH

The CT- 709 tool, designed by a professional aircraft mechanic makes the job easier. Manufactured from tool quality steel, the wrench features both 3/8" and 1/2" drives, as well as "flip over" reversibility. For Cessna adapter for 150 Series through 300 Series Aircraft.

P/N 12-00792 ..... $99.85

CHALLENGER OIL FILTER TORQUE WRENCH

Challenger CP102 Oil Filter Wrench Torque Wrench Adapter 1" L
P/N 12-01674 ..... $16.85
Challenger CP103 Oil Filter Wrench Torque Wrench Adapter 30 MMS
P/N 12-01675 ..... $13.95
Challenger CP102 Oil Filter Wrench Torque Wrench Adapter 1" ST
P/N 12-01676 ..... $13.95

OIL EASY WRENCH

The "Oil Easy Wrench" is specifically designed to remove the oil filter on any aircraft using the Teledyne Continental IO-520 or IO-550 engine. In fact, it is a universal oil filter wrench that works great on any piston engine airplane! Recommended at the Malibu Mirage Owners and Pilots Association (MMOPA) maintence seminar!!! On IO-520's & IO-550's engines, it's the only wrench that can get between the top of the oil filter and the pressure pump and still provide enough leverage to remove the old (usually stuck) oil filter by hand. And because you are able to remove the old filter without any damage, your inspections of the old filter are more accurate, without any contamination from more extreme filter removal methods.

P/N 12-01552 ..... $42.65

ACS OIL CAN CUTTER

This unit has the capacity of both P/N AFC-470 & 12-21395. It also uses the same replacement blade as the 12-21395. Anodized "Red" for corrosion resistance. Base can be clamped in a bench vise if desired. s black anodized.

P/N 12-01048 ..... $59.85

TEMPEST AA474 OIL FILTER WRENCH EXTENSION

Some aircraft applications create an environment that does not allow adequate clearance to get a torque wrench or even an open-end wrench around the install nut on oil filters. Even though Tempest has recently introduced the Dash II filter, which is the shortest oil filter on the market, the clearance is still not enough on some applications, such as Beech Barons and Bonanzas. To eliminate this problem Tempest producs the AA474 oil filter wrench extension. Features: Chrome-plated steel provides a high quality tool.Easy to use torque conversation label on back of tool. P/N 10-03929 ..... $33.85

TEMPEST OIL FILTER CAN CUTTER

This universal cutter from Tempest is easy to use and is a great addition to any toolbox. It's made from high quality aircraft aluminum, making it lightweight and very durable. Works on all aircraft spin-on oil filters. Adapter pin easily removed for 'male' filters.

P/N 12-01392 ..... $94.75
Tempest Oil Can Cutter Blades. ..... P/N 12-01393 ..... $10.65

AIRWOLF AFC-470 OIL CAN CUTTER

Every A&P knows the importance of cutting every single oil filter open after an oil change. The problem up to now was oil filters were difficult to open and the tools to open them were expensive. This is no longer the case with the Airwolf AFC-470 oil filter cutter. The AFC-470 is the easiest and quickest way to determine the current health of your engine. The Airwolf AFC-470 oil filter cutter is constructed out of a solid 6" billet of super strong 6061-T6 aluminum, hard anodized to resist scratches and wear. Stainless steel rollers allow the oil filter to spin effortlessly during cutting. And finally, our specially designed razor sharp cutter wheel hardened to 60 Rockwell, will make quick work of opening any oil filter. This filter is designed to last a lifetime. Fits new style oil filters.

All Champion/Tempest/Kelly Filters ..... P/N 12-00789-1 ..... $87.95
Rotax Filters ..... P/N 12-02295 ..... $87.95
Large Fram Filters ..... P/N 08-07191 ..... $129.50
Replacement Cutting Wheel ..... P/N 13-03958 ..... $7.99

HAND CRANK OIL FILTER CUTTING TOOL

This tool was designed to eliminate much of the mess that occurs with small handheld oil filter cutting tools. Very simple to operate, it is excellent for individual aircraft owners as well as FBO's and maintenance shops where a lot of filters need to be cut. Simply clamp in a vise, screw on the filter, turn the cutter into the filter and hand crank to open the filter. The rugged construction enables this tool to operate trouble free for years. P/N 12-00122 ..... $107.95
Replacement Cutting Wheel ..... P/N 12-01685 ..... $6.75

AVIATION OIL FILTER CUTTER

This aviation oil filter cutter will open any size oil filter canisters for your inspection. To use the tool, place the filter in a vice, attach the tool to the top of the filter, and rotate 4 to 6 turns to open the canister. The cutting wheel will stay sharp for about 50 uses, and is easily replaced when dull. The tool is made from 6061 aluminum with a purple anodized finish. The tool is ready to use on any oil filter with a male or female thread. Oil filter cutter P/N 12-21395 ..... $59.85
Replacement cutting wheel ..... P/N 12-21396 ..... $9.50

TEMPEST AA471 OIL FILTER MEDIA CUTTER

Tempest's new AA471 provides a low cost, efficient and safe tool that every mechanic will want to put in their tool box. Strong guard and non-retractable blade to secure the media and ensure an accurate cut.

P/N 12-01854 ..... $34.50

TO

AUTOLITE SPARK PLUG TOOLS

T-554 AUTOLITE SPARK PLUG FEELER GAUGE - Sliding tabs check spark plug gap in decimals of an inch. P/N 12-00707 ..... $15.96

SPARK PLUG DEEP SOCKETS - T-558 1/2" drive w/o magnet P/N 12-00712 ..... $30.50

ATS VIBRATOR CLEANER PA01 - It will clean heavy deposits in and around the electrodes with absolutely no risk of damage to the plug. 1 lbs (0.5Kg) shipping weight.
P/N 12-00714 ..... $28.76

SPARK PLUG SERVICE KIT

Kit Contains: 1 TP12 cleaner, 1 TP164 extra bag, 1 TP163 extra powder, 1 TP298 Go &No Go wire gauge, 1 TP339 spark plug tray, 1 TP340 gapper
P/N 12-02351 ..... $139.50

ATS DELUXE SPARK PLUG KIT

Kit Includes: • SPCT100A Spark Plug Cleaner Tester Unit (120V/240V) • ATS415 Bench Gapping Tool with Gap Gauge • #12 Spark Plug Cleaner • PA01 Spark Plug Vibrator Cleaner to remove lead deposits • Spark Plug Tray • 10X Inspection Magnifier • A 4oz Bottle of ATS Anti-Seize Lubricant • 100ea Copper Gaskets • Spark Plug Thread Chaser • ATS950 Magnetic Spark Plug Socket P/N 12-02410 ..... $559.96

BB PRODUCTS FC-2000 OIL FILTER CAN CUTTER

Features: • Cuts all Champion, Hartzell, and Tempest 3.7" Dia. oil filters • Rugged 6061-T6 aluminum construction • Roller bearings provide smooth rolling action • Hardened hardware throughout • No parts to change • Can cut in either direction • Made in USA Lifetime Warranty. ..... P/N 12-00923-1 ..... $88.75
Replacement Cutter Wheel ..... P/N 12-01689 ..... $4.95

BB PRODUCTS FC-3000 OIL FILTER CAN CUTTER

This an cutter incorporates a longer plate that allows cutting filters from 3.7 to 4.7 inches in diameter. Roller bearings provide smooth cutting action. Ideal for cutting racing filters too! Black anodized finish P/N 12-02628 ..... $99.00

BB PRODUCTS FMC-2000 OIL FILTER MEDIA CUTTER

This patented tool is designed to hold Champion Aerospace brand Aviation oil filter spools, and to allow cutting the paper filter media at each end of the spool without holding the filter spool by hand. Using this tool reduces the risk of cutting one's hands while cutting the filter media as well as reducing the time necessary to accomplish this task. The filter media is rotated in a special holder that is supported by roller bearings. A knife, with a retractable safety cover is brought into position to make a clean cut of the filter media at each end. The filter media can then be removed for inspection.Patented.

FMC-2000 Oil Filter Media Cutter ..... P/N 12-00925-1 ..... $298.00
FMC-2000BL Media Cutter Blades (3 pack) ..... P/N 12-01688 ..... $14.95
FMC-2000BA Base to mount to bench ..... P/N 12-01690 ..... $49.50
FMC-2000K Kelly Filter Cutter Adapter ..... P/N 12-01686 ..... $98.95
FMC-2000T Tempest Filter Cutter Adapter ..... P/N 12-01687 ..... $98.95

FMC-2010 OIL FILTER MED CUTTER

The Model FMC-2010 is a "Tool Box" version of the original Oil Filter Media Cutter that allows cutting and removing the filter media while reducing the chances if getting cut. The FMC-2010 can be mounted on the top of a toolbox or held in a vice for operation. Black powder coated finish. For Champion 3.7 diameter filters. Tempest and Kelly Aerospace filters are special order. ..... P/N 12-02629 ..... $189.00

BB PRODUCTS FH 2000 OIL FILTER HOLDER

Rigidly supports Champion, Hartzell, and Tempest 3.7" dia. aviation filters for cutting. After opening the filter, it keeps the oil inside the cup of the holder, instead of on your vice or shop floor. It holds the filter much more rigidly allowing you to cut the filter much faster while reducing side loads on your cutting tool. ..... P/N 12-00924-1 ..... $88.75

TOMS OIL FILTER CUTTING TOOL

Tom' s oil filter cutting tool will allow you to inspect your aircraft's oil filtering material for trapped debris in a quick and easy manner. Oil filter inspection is a critical measure of your engine's health and should always be a part of your aircraft's regular maintenance program. Most filter cutters work like a pipe or tubing cutter in that you have to go around and around the filter, adjusting cutter depth with each pass. Although you could do that with this tool, the real beauty of this new product is that the cut can be easily made in one pass. The tool is designed primarily for Lycoming oil filters that have a threaded insert protruding from the end of the filter. A few Lycoming oil filters and most Continental oil filters do not have this insert. For these filters, an adapter insert is supplied with the tool. Tom's oil filter cutter may also be used on smaller filters such as found on Rotax or automotive engines. Simply remove the cutter handle and reposition the pivot bolt to the inner hold on the base handle. The adapter insert may be needed on these filters as well. Made in USA. P/N 12-01697 ..... $59.95

MODEL 7000 OIL FILTER CUTTER

• Accepts both male & female styles of aircraft oil filters, and many automotive sizes. • Ball bearing rollers make it easy to turn the filter • Effective design helps insure a straight cut (the filter does not try to spiral off the cutter) • Heavy duty construction (designed for daily commercial use) • Aircraft quality aluminum construction • Replaceable hardened steel cutter wheel • Contoured knob is easy to turn, even with oily hands • Accepts oil filters 3 1/8" to 4" in diameter, which includes most aircraft oil filters such as Champion: CH48103, CH48104, CH48108, CH48109, CH48110 AND CH48111 • The cutter may be completely disassembled, and all parts are replaceable. P/N 13-03145 ..... $119.95
Replacement cutter Wheel ..... P/N 13-05737 ..... $15.25

MODEL 7100 OIL FILTER KNOB

• Slips onto the hex of an aircraft oil filter • Large diameter knob for a strong grip even with oily hands. • Allows many filters to be installed and removed without using a wrench. • Works in tight spaces, you do not have to swing a wrench • Knob will accept a 3/8" drive ratchet handle to help remove very tight filters (ratchet handle not included) • Stainless steel core durability (your ratchet goes into stainless steel, not plastic). • Use a torque wrench to accurately tighten a new filter to the proper torque. • Handle can be used as a base to support the filter, holding it upright so the oil does not spill out. • Color: bright yellow. P/N 13-03146 ..... $42.75

MODEL 7300 OIL DRAINER

Drain your oil lines and filter before removing the filter. Works with most Lycoming engines and remote filter installations, and some Continentals. A remote mounted filter installation can easily hold a quart of oil in the filter and lines after the engine is drained. The Oil Drainer clamps over the center of the oil filter. A hardened steel rod pierces the filter can and allows the oil to be neatly drained into your catch bucket. After the oil is drained, you can remove the filter with much less mess.
P/N 13-03147 ..... $122.75

OIL FILTER WRENCH

The 1" hexes of the wrench easily fit Champion oil filters. The hexes are rotated 15 degrees from each other so by turning the wrench over or flipping it end-for-end you can easily find an orientation that allows you to get on the filter, even the tightest engine compartment. It's 6 inch overall length allows you to turn it tight locations, and the shorter length helps prevent over-tightening the filter during installation.
P/N 12-01638 ..... $15.75

BOGERT OIL FILTER TOOL

The Oil Filter Tool was created to assist in removing a stuck filter, without resorting to the traditional hammer, punch, chisel, and or the huge pump plier's methods. Bogert Aviation wanted the tool to be safe in tight quarters and unable to slip, attempting to minimize damage to nearby components. This is still a messy process but this tool will always work to remove stuck filters without damaging anything else. 1Lb.
P/N 12-03219 ..... $23.90

TALON OIL FILTER TOOL

The Talon Oil Filter Tool was created to remove stubbornly stuck oil filters. It is 50% stronger than the standard 10M-OFT type. The tool is safe in tight quarters and unable to slip, attempting to minimize damage to nearby components. This is still a messy process but this tool is your best chance of removing stuck filters without damaging anything else. Features: • Three pin (TALON) engagement in oil filter plate for stability and strength • Good for up to 1500 in. lbs. of torque • Works in tight spaces! • Works on Aircraft, Automotive, Marine, and Recreational Vehicle applications • Made in the USA P/N 11-11556 ..... $34.00

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

ULLMAN MAGNETIC PICK-UP TOOLS

HT-3

HT-2

HT-1

These Ullman pick-up tools with Powercap offer a unique combination of features which make them ideal for work around aircraft. The stainless steel telescoping handle is strong, long, and lightweight, and the comfortable, textured cushion grip keeps handle secure even in wet or oily hands. The head features a compact industrial strength magnet for retrieving heavy objects in tight places. The powercap shields magnet side so that the head can be easily guided past ferrous metal objects. Available in 3 convenient sizes.

HT-1 lifts 1-1/2 lbs, over 2 lbs with POWERCAP™ telescopes from 6-5/8" to 33-1/4" P/N 12-21385 ..... $10.95

HT-2 lifts 3-1/2 lbs, over 5 lbs with POWERCAP™ telescopes from 6-5/8" to 33-1/4" P/N 12-21386 ..... $12.95

HT-3 lifts 5 lbs, 10 lbs with POWERCAP™ telescopes from 6-3/4" to 30-1/4" P/N 12-21387 ..... $18.25

CHP4-L HOOK & PICK SET - has picks that are 9.75" long with textured cushion grips. These longer picks are ideal for working in hard to reach awkward areas.
P/N 12-00716 ..... $12.75

GMC-2 DUAL PURPOSE TOOL - contains a MegaMag Pickup Tool that lifts 16 lbs. and a 2.25" Inspection Mirror with a metal base that mounts in seconds and brings hidden areas into full view.
P/N 12-00718 ..... $20.75

STEELMAX MAG-IT MAGNETIC PICK-UP TOOL

Safely remove metal chips and debris from machinery and work areas using SteelMax Mag-It® magnetic pick-up tool. The Mag-it® slide action lever quickly demagnetizes the tool, which releases chips for disposal.
10 inch Pick-Up ..... P/N 12-01714 ..... $33.50
15 inch Pick-up ..... P/N 12-01715 ..... $47.50

EXHAUST PORT RESURFACING TOOL

The exhaust port resurfacing tool is designed to recondition port surfaces where no more than .010" of material need to be removed. It is easily bracketed and aligned to the port in reference to the rocker cover surface. Execution of the cutting operation only requires hand power. No air or electrical power is required. Mounting bracket adapters are available for the following engines: A&C series continentals, Lycoming Parallel Valve, Lycoming Angle Valve, others on request ..... P/N 12-17605 ..... $396.00
A & C Series Continental Bracket ..... P/N 12-17609 ..... $199.75
Lycoming Parallel Valve Bracket ..... P/N 12-17610 ..... $184.80
Lycoming Angle Valve Bracket ..... P/N 12-17611 ..... $276.95
Cutter Head Inserts ..... P/N 12-17607 ..... $28.75

EAR ISLAND REMOVAL TOOL – When substantial quantities of material have to be removed from the exhaust port, it may be necessary to also remove the island around the exhaust stud area. The ear island removal tool and pilot can be used to accomplish this without the use of power tools ..... P/N 12-17608 ..... $103.95

THE CORE RECESSOR

The core recessor is a new product with the purpose of serving as an efficient tool that makes the process of removing core cells in Nordam Panels and composite fiberglass more efficiently. Thus, it reduces time for edge fillers, which are necessary procedures to customize aircraft cabinets, floorboard, vanity's headliners, valance panels, etc. Is light weight, easy and safe to use. Core panels from 1/8 to 3/4 inch with no adjusting. Requires no electricity.
Core Recessor ..... P/N 12-02270 ..... $106.95
Core Recessor Mini ..... P/N 12-02271 ..... $73.50

UNI-MAG WRIST BAND MAGNET

Uni-Mag is a wrist worn magnet that allows craftsmen to keep parts close to hand while working rather than in your pocket, on a ladder, or in your mouth. It holds nuts, bolts, screws, nails, tools, etc. A specially created magnetic field allows parts to lay flat on the face of Uni-Mag rather than upright. Save time and put an end to fumbling for small hardware with Uni-Mag. Comes complete with magnet and wristband. P/N 12-30110 ..... $16.85

SUPER HANDY MAGNETIC RETRIEVAL TOOL ST-225

The Super Handy Magnetic Retrieval Tool extends 26" and picks up five pounds.
P/N 12-02932 ..... $9.50

MAGNETIC FLEXIBLE LIGHTED PICK UP TOOL

Magnetic flexible lighted pick up tool. Flexible Shaft. Three LED Lights. Magnetic on both ends. Extends from 8" to 25"
P/N 12-02919 ..... $15.95

AMAZING ROD SAW

Tiny particles of tungsten carbide, one of the toughest and hardest substances in the world, have been bonded to a steel rod to produce the Rod Saw. Fits standard 12" hacksaw frame. Use when regular hacksaw will not work. Lets you cut steel, rock. Not recommended for soft materials. P/N 12-01180 ..... $6.95

EXHAUST DESICCATOR PLUG FOR EXHAUST STACKS

Quality made polyurethane rubber plug won't wear out and provides a positive seal in the exhaust pipe. Desiccator housing contains interchangeable desiccator canisters. Desiccant never needs to be removed from canister for drying. Removal flag and cap attach to external end of plug when in use. During storage, flag cap fits on desiccator chamber. Limits internal engine damage caused by corrosion. Fits 2" dia. exhaust pipes. Other sizes available as a special order. Minimum special order 5 pieces.
P/N 12-30212 ..... $46.65 ea.

HIGH CAPACITY EXHAUST DESICCATOR

2.5 times the desiccant capacity of previous design, One piece construction allows the dessicant to be contained in the core of the plug. Made of durable high quality urethane rubber that will last almost indefinitely
P/N 12-01057 ..... $47.70/ea

GOLDENROD DEHUMIDIFIER

This compact, low-voltage dehumidifier is an ideal way to eliminate dampness and mildew in aircraft which can cause mildew growth in carpet and upholstery and wreak havoc with electrical systems. In stall under the instrument panel or on the deck between seats. If installed in the engine compartment, Goldenrod will eliminate moisture which leads to rust, keep ignition wiring dry, and facilitate cold weather starts. In the hangar, Goldenrod can protect parts, tools, supplies, and components. Operates on standard 110V current 24 hours per day but uses four times less power than a standard light bulb. Safe and effective. Available in four lengths.

Part No.	Length	Watts	Approx. Coverage Up To	Price Ea.
12-30225	12"	8	100 cubic feet	$36.50
12-30230	18"	12	200 cubic feet	$38.55
12-30235	24"	15	300 cubic feet	$42.50
12-30240	36"	25	500 cubic feet	$47.95

EVA-DRY DEHUMIDIFIER

This is a product that is the answer to a very common problem in Aircraft, HUMIDITY!!! The Eva-dry is a 100% renewable, wireless, mini dehumidifier that requires no power to operate.
It works with a Silica gel that absorbs moisture from where ever it is placed. There is an indicator window on the front of the unit that will change from blue to pink as the units absorbs moisture. Once the crystals have turned pink it is time to renew.
To renew, simply fold down the hidden plug on the back of the unit and plug it in to any a/c outlet for 8-10 hours. A heating element will be activated which will evaporate the moisture. The Eva-dry has a 10 year life span and has a 5 year mfr. Warranty. Size: 6.25" X 4.75" X 1.25".
P/N 12-01621 ..... $29.95

TO

WING STAND

This wing stand is ideal for aircraft homebuilders or restorers needing to safely store and protect aircraft wings during the project. It accommodates virtually all shapes and sizes of wings and is available at a very economical price. We ship this wing stand direct to you from the factory (freight collect). Dims: 72"l x 44"h x 36"w. Assembly req. Each stand holds 2 wings.

P/N 12-21390.....$199.00/ea

AEROROLLER-1000

AeroRoller makes movement of your aircraft or wheeled equipment easy. Aircraft can be loaded on AeroRoller without jack and minimum effort is required to move aircraft when on rollers. AeroRoller is constructed of Industrial 1/4" steel plate. Heavy duty Duraform 360° swivel castor wheels means no flat spots. Brake castor lock parking location. Each unit can carry 1000 lbs. Manufacturer's warranty covers defective parts & labor.

2-Roller Set..... P/N 13-00071 .....$199.95
3-Roller Set..... P/N 13-00072 .....$255.95

TENNSMITH BRAKES & SHEARS

HAND BRAKE & STAND - Versatile, economical hand brake designed for straight forming of mild steel in thicknesses of 22 gauge & lighter. Made in the U.S.A by Tennsmith. Bends material up to 48" wide. Wts: brake: 280 lbs. Optional stand: 95 lbs. Ideal for bending materials used in light aircraft construction. Shipped direct to you from factory in Tennessee.

Model S48-22 hand brake ..... P/N 12-20700 .....$680.00
Optional Stand..... P/N 12-20705 .....$241.95

UNIVERSAL HAND BRAKE & STAND - Tennsmith's heavy duty universal hand brake is a great tool for a wide range of sheet metal binding and forming operations in 12 gauge and lighter mild steel. The brake is ideal for both box and pan and straight bending in hold and cold rolled plate, stainless steel, aluminum, and heavy plastic. Welded steel plate construction for strength and rigidity. Bends material up to 48" wide Wts: brake: 1330 lbs. Optional stand: 95 lbs. Shipped truck collect direct to you from factory in Tennessee.

Model HBU48-12 Hand Brake..... P/N 12-20710 .....$3,733.00
Optional Stand..... P/N 12-20705 .....$241.95

FOOT SQUARING SHEAR - Tennsmith squaring shears offer precision shearing and rugged construction. These shears feature traction, ground alloy tool steel blades to prevent material movement during shearing. Will shear material up to 16 gauge mild steel and up to 20 gauge stainless steel. Both blades are adjustable and back gauge gives highly accurate readings. Wts: Model 36: 700 lbs. Model 53: 950 lbs. Shipped truck collect to you direct from factory in Tennessee.

Model 36 Shear (Max. Cutting Width 37")..... P/N 12-20715 .....$2,034.00
Model 52 (Max. Cutting Width 52")..... P/N 12-20720 .....$2,598.00

TENNSMITH -These products are shipped truck, priced F.O.B. McMinnville,TN. Allow 4-6 weeks for delivery

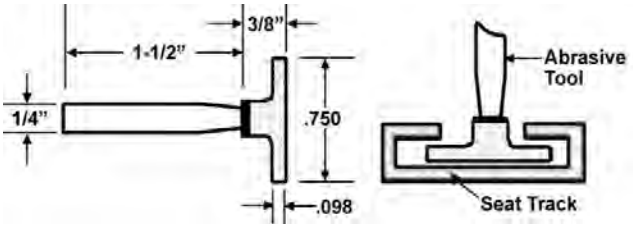
LAP JOINT JOGGLE TOOL

FOR UP TO .032 ALUMINUM SHEET - To use the Lap Joint Joggle Tool, install washers to adjust joggle set-back from edge of sheet. Start at one end of sheet and pull smoothly along edge to be joggled. Keep back plate of tool firmly and squarely against edge of sheet for smooth and parallel joggle. To break a sheet edge, insert sheet just one bearing depth (.4") then bend down as desired as tool is pulled along edge. Adjustments - For set-back, add or subtract washers. For different material thickness, loosen bolts, spread or close. For use on aluminum sheet up to .032 thickness. P/N 12-30275 ..... $41.90

NON-CONTAMINATING SCRAPER

Our Non-Contamination Scraper is suitable for all airframe scraping operations. It will not contaminate delicate aluminum parts with steel particles which can induce corrosion. It is easily resharpened with a mill file and the .060" thick heat treated aluminum blade is easily replaceable. Features positive wood grip handle. P/N 12-30205 ..... $21.60

SEAT TRACK CLEANER



Maintaining adjustable cockpit seats, or passenger seating secured in notched tracks, requires removing the dirt and grit that have become embedded in the tracks. Rex-Cut Products has developed a thin-profile mounted wheel specially designed to accomplish this job efficiently and safely. The seat track cleaners are manufactured using layers of reinforced nonwoven cotton fiber and abrasive grain which are bonded into discs. When mounted on a die grinder they are able to fit inside the seat tracks. Designed for cleaning all the interior surfaces of the track without having to change discs, one disc will remove caked on sludge, dirt and grit while removing minor burrs and rough edges. The seat track cleaners are non-loading on aluminum and leave superior surface finishes. Available in 54 and 80 grits in aluminum oxide grain mounted on a 1/4 x 1/2" shank.

54 Grit Seat Track Cleaner.....PN 12-00955 ..... $7.95
80 Grit Seat Track Cleaner.....PN 12-00952 ..... $7.95

SLIDE HAMMER

Blue vinyl hand grip over steel handle reduces sting on technicians hands and provides 100% grip. 3 lb. slide weight is mounted on 1/2" plated steel shaft. Broached hex in nose cone locks pulling screw in place...ends breakage. Supplied with two hardened pulling screws and "L" puller hook fabricated of aircraft quality steel. Nose cone and shaft threads are 1/2" - 20. P/N 15-08252 ..... $42.70

MACHINIST HOOK SCRIBE

Machinist Hook Scribe New. 2-point scriber has hardened, ground steel points. Features a straight point and a 90 degree point. Length: 9".

P/N 12-02896 .....$3.95

PIG TAIL HOOK SCRIBE

Both the 45 degree and pig tail points of the scribe are made of hardened, ground steel. Both ends of the tool unscrew from the body.

P/N 12-02897 .....$3.95

ELECTRIC ENGRAVER

Use like a pencil to write, draw, engrave on wood, metals, plastics, and glass. Variable stroke adjustment for heavy or fine engraving. Tungsten carbide tip for long life and clean lines. Soft-Grip neck for control and comfort and 6' Cord.

P/N 12-21355-1 ..... $13.85

SWISS PATTERN NEEDLE FILE SET

Swiss Pattern Needle File Sets have been designed to meet the needs of hobbyists, craftsmen, tool makers and jewelers. Every file is made from alloy steel and machined into distinctive shapes for various small scale and finishing applications. Also included is a 700 series Versa-Grip handle with a locking screw chuck.

P/N 12-03351 .....$20.50

MAGNETIC BIT CADDY

A non-spill bit holder at your fingertips. 36 individual 1/4" and 5/16" screwdriver bits may be stored in this magnetic-based organizer. Remains solid at any angle placement while holding bits in their respective slots.

P/N 12-01083 .....$19.90

RARE EARTH MAGNETS

These super-strong magnets made from neodymium are lighter and five times stronger than samarium-cobalt rare earth magnets. Nickel plated to resist corrosion. Ideal for work projects, experiments, shop and everyday use. Pack of 10.

P/N 10-04077.....$4.85

SCREW PAINT CUTTERS

For AN4 Screws. You know how frustrating it can be to remove a painted over screw only to wind up chipping up the paint job. But you wouldn't have that problem if you had a set of these innovative paint cutters. They work by slicing through the paint around the head of the screw so you can remove it without chipping the paint. They have a 1/4x28 thread to fit into any angle drill or you can get the optional arbor (p/n 12-02460) for use in a drill chuck. Does not work on dome head rivets. 1 lbs (0.5Kg) shipping weight.

Size	Part No.	Price	Size	Part No.	Price
AN4	12-02452	$23.65	AN6	12-02453	$24.50
AN8	12-02454	$23.65	AN10	12-02456	$23.65
1/4"	12-02459	$22.65	6 pc. Set	12-02461	$123.75

Arbor..... P/N 12-02460 .....$18.85

INSTRUMENT MOUNTING HOLE DRILL JIG

Aircraft instrument mounting hole drill jig for standard 2-1/4" & 3-1/8" diameter instruments. Accurate and simple tool to use, drill jig made of hardened steel for long life. P/N 12-00975 .....$34.85

MAGNETIZER / DEMAGNETIZER

This versatile tool saves you time and trouble by instantly magnetizing or demagnetizing you tools & parts on the job. Reliable, powerful permanent magnets for a super long life, and its compact size,shatterproof plastic shell, this tool will fit easily in you tool box. This tool allows easy, precise handling of small steel parts in confined spaces, collects metal items from inaccessible places, leaves 1 hand free for positioning the work piece, demagnitizes instruments & electronics components. Size: 2.1"x2"x1.1". Wt. .22 lb. P/N 12-16835.....$18.50

OL' JOINT JIGGER

OL' JOINT JIGGER MODEL RTN-100 TUBING NOTCHER - Ol' Joint JiggerTM quickly notches tubing of up to 2" O.D. in less than 30 seconds. Great for assembling and welding tubing in your garage or workshop. Adjusts in single degree increments to make up to 60° angle notches. Automatic round tubing centering and alignment. CNC machined steel construction. Bi-metal hole saws not included. Use with your 1/2" hand drill. U.S.A. Ship Wt. 9 lbs.

P/N 12-01107 ..... $159.95

RTN-BASE (UNIVERSAL DRILL PRESS MOUNT) - For use with RTN100 only. Allows for set up and dedication of a small drill press for tube notching. Adjustable for out-of-square tables, the RTN-Base also makes it easy to lay the notcher over horizontally, still bolted to the table, to handle long or cumbersome tubing that can't be notched in a vertical position. Minimum requirements: 1/3HP drill press with 3-1/2" to 4" of travel and 14" from the table or base to the chuck. (Bolts for attachment included) U.S.A. Ship Wt. 3 lbs. P/N 12-00691 .....$32.25

OL'JOINT JIGGER MODEL RTN-1000 DELUXE ALUMINUM TUBING NOTCHER - Ol' Joint JiggerTM combines precision performance, versatility and comfort for quickly notching tubing of up to 2" O.D. in less than 30 seconds. Enhanced vibration-reducing design and dual-axis base allow for either work bench or drill press mounting to provide the professional or hobbyist with the ultimate in tubing notchers. Laser-engraved protractor allows adjustments in single degree increments to make up to 60° angle notches. Automatic tube centering and alignment. Anodized aircraft-grade aluminum construction. Bi-metal hole saws not included. Use with your 1/2" hand drill or drill press. U.S.A. Ship Wt. 9 lbs.

P/N 12-01108 ..... $237.95

RTN NOTCHER REPLACEMENT PARTS & HOLESAWS		
Description	Part No.	Price
5/8"-18 Thread Adapter	12-00020	$6.50
Main Arbor/Shaft (1/2"-20 Thread)	12-00021	$16.35
Bushings for Arbor Support (pair)	12-00022	$6.00
5/8" Holesaw	12-00023	$14.75
3/4" Holesaw	12-00024	$14.75
7/8" Holesaw	12-00025	$14.75
1" Holesaw	12-00026	$14.75
1-1/2" Holesaw	12-00030	$15.25
1-3/4" Holesaw	12-00032	$18.75
2" Holesaw	12-00034	$18.75
HOLESAW ASSORTMENTS		
Description	Part No.	Price
1", 1-1/8", 1-1/4", 1-3/8", & 1-1/2"	12-00035	$69.85
1-1/8", 1-1/4", 1-3/8", 1-1/2" & 1-5/8"	12-00036	$69.85
1-1/4", 1-3/8", 1-1/2", 1-5/8", & 1-3/4"	12-00037	$75.25
1-3/8", 1-1/2", 1-5/8", 1-3/4" & 1-7/8"	12-00038	$79.50

PIPEMASTER WELDER'S TOOL FOR CONTOUR FITS

Pipemaster gives aircraft builders the ability to cut a piece of tubing on both ends and have it fit its intended location on the first try. Tedious hours of grinding and misfit joints can be eliminated producing exact welds and stronger airframes. Features spring temper stainless steel pins, aluminum inner shell, and rugged ABS housing. Simply slip over the pipe, push down, transfer and cut, and the tubing is ready to weld. Pipemaster transfers the exact outline of the pipe joint in just seconds. Use for penetration cuts as well.

Part No.	Tubing O.D.	Price
12-00102	3/4"	$39.65
12-00103	7/8"	$47.75
12-00104	1"	$39.85
12-00105	1-1/8"	$50.25
12-00106	1-1/4"	$41.75
12-00107	1-5/16"	$49.80
12-00108	1-3/8"	$57.25

Part No.	Tubing O.D.	Price
12-00109	1-1/2"	$57.25
12-00111	1-5/8"	$57.25
12-00112	1-3/4"	$62.50
12-00113	1-7/8"	$65.50
12-00114	2"	$65.50
12-00116	2-3/8"	$66.50

TO

SANDERS - SURFACE TREATMENT KITS

ADJUSTABLE FLEXIBILITY SANDERS (AFS)

Countless prototypes were built and tested for three years on performance, comfort, and durability to bring forth a line of finely tuned sanding tools that have been refined to perfection. Adjustable Flexibility Sander available in 4.5", 6", 9", 15", 21", 27", and 36".

Size (inches)	Part No.	Price
4.5	12-02862	$24.85
6	12-02866	$14.90
9	12-02867	$41.90
15	12-02868	$67.75
21	12-02869	$73.65
27	12-02870	$104.50
36	12-02871	$199.75

P-KIT AIRCRAFT WINDOW INSPECTION PRISM KIT

The "P-KIT" (Inspection Prism Kit) is packaged as a completely self contained aircraft window inspection tool kit. It comes in a waterproof lockable case and includes Instructions, Inspection Prism, Coupling Agent and a 6000 Candlepower Flashlight with batteries. It's ready to use to inspect your aircraft windows for possible bolt hole damage. P/N 12-01333 ..... $795.00

ELECTRIC TOOL ADAPTER

3/8" Drive, 3-inch, locking adapter for electric tools
P/N 12-01706 ..... $23.50

MBX KITS AND ACCESSORIES

MONTI
MBX Surface Treatment Systems

PATENTED TECHNOLOGY - MBX Systems are different from conventional surface treatment systems in that MBX Systems are based on several physical principles. Flexible brush-belts are inserted loosely into a cage-like adaptor system and secured with safety arms. The centrifugal force created by rotation causes the brush-belt to tighten and work as if suspended on a cushion of air. Advantages:Vibration-free operation: The vibration of the wire bristles that occurs when the bristles strike the target surface is absorbed by the air-cushion. The bristles re-strike the target surface at rest (without vibration). This achieves the maximum kinetic energy.

MBX BRUSH-BELT TECHNOLOGY - MBX Belts consist of individual, U-shaped crimped wire bundles anchored in a polyamide fabric. Made of spring steel, the wires have hardened tips that strike the target surface individually during rotation.

ADVANTAGES - High safety level: The U-shaped anchor points of the individual crimped bundles prevent wire bristles from being thrown clear. No heat development: Avoid toxic fumes and no smearing during the removal of sticky materials. No grinding: No removal of healthy material, no deformations. Flexibility: High degree of adaptability when working on contoured areas or areas with sharp edges.Optimal performance: Because of their design, each wire tip strikes the target surface twice per rotation.Long service life: Specially hardened wire tips with a hardness up to 68 HRC (Rockwell hardness) provide for a level of hardness never before achieved with conventional brush technology.

MBX PNEUMATIC DRIVE UNIT - Easy handling, lightweight - 1.1 kilograms, high torque, safe to use!Specially developed for the MBX brush-belt and MBX Vinyl Zapper systems. The high output rpm of the compressed-air turbine (21,000 rpm) is reduced to 3,500 rpm by means of a planetary gear and toothed belt; torque increases. This gives our MBX pneumatic drive units an optimised power profile. MBX brush-belts and MBX eraser wheels work as a direct extension to the drive shaft, i.e., there is no lateral centre of gravity and MBX drive units operate in-line. Work in hard-to-reach areas or in the removal of tough, thick, sticky materials (e.g. compounding materials, underbody corrosion) with optimal ventilation.

MBX PNUEMATIC STARTER SET

For the removal of seam sealant, corrosion, paint, vinyl decals, glue on aluminum and alloy.
SET 1 - • MP-3500 - MBX Pneumatic Power Tool S (3500 rpm) with adapter system for 23mm belts/31mm rubber eraser. • AA-0011 - Adapter for 11mm wire belts • BS M11X - V2A Wire Belt, Med., 11mm angled tips • BS-F11 - V2A Brush Belt, Fine, 11mm • RE-0023 - Rubber Eraser, 31m P/N 12-01394 ..... $502.85

MBX ELECTRIC STARTER SET

For the removal of seam sealant, corrosion, paint, vinyl decals, glue on aluminum and alloy.
ME-3200 - MBX ELECTRIC POWER - Tool A (3200 rpm) with adapter system for 23mm belts/31mm rubber eraser • AA-0011 - Adapter for 11mm wire belts • BS-M11X - V2A Wire Belt, Med., 11mm angled tips • BS-F11 - V2A Brush Belt, Fine, 11mm • RE-0023 - Rubber Eraser, 31mm
P/N 12-01396 ..... $514.85

MBX BRUSH BELTS

Medium (11 or 23 mm)
For the removal of seam sealant & corrosion on alluminum bodies

Fine (11 or 23 mm)
For the removal of paint on aluminum bodies.

MBX Belts are made of a high-performance polyamide fabric - tension resistant up to 440 kilograms. Individual bristles made of spring steel or stainless steel are anchored U-shaped in the flexible polyamide fabric. The materials used for the production of MBX Belts offer top safety and durability due to the high flexibility of the MBX Belts. No clogging - no heat built-up - no grinding. The high masses due to centrifugal force during rotation are absorbed safety by MBX Adapter Systems.MBX Medium have angled tips to create a sandblast effect. 11mm is for expecially hard-to-reach-areas such as a 90° angles.
BS-M11X Med. Blue 11mm Brush
P/N 12-01402 ..... $29.85
BS-M23X Med. Blue 23mm Brush
P/N 12-01403 ..... $29.85
BS-F11 Fine Blue 11mm Brush
P/N 12-01404 ..... $29.85
BS-F23 Fine Blue 23mm Brush
P/N 12-01405 ..... $29.95

MBX VINYL ZAPPER

"The rotating toothed eraser wheel", patented For the removal of self-adhesive foils and materials, wide-area decoration, adhesive residue on decorative strips and lettering on OEM-painted surfaces made of metal, aluminium, glass, fibreglass (gel coats) - and most amazing: NO PAINT DAMAGE.The centrifugal force created by rotation makes the MBX Vinyl Zapper work as if suspended on a cushion of air. Advantages: Faster working speeds of up to 3,500 rpm Conventional rubber eraser wheels operate only at circa 1,500 rpm. No paint damage, no smearing despite speeds of 3,500 rpm Toothed wheel design. Easy handling. Vibration-free, smooth running (compare a solid rubber tire with an air-filled tire). Increased performance. The working surface of the MBX Vinyl Zapper is strongly enlarged by the application of pressure to the work surface. This improves performance (compare to a car tire containing only a small amount of air). Long service life Wide construction. Vinyl Zapper 31mm Toothed Wheel Construction Removal of elements such as vinyl decals & DOT tape from metal surfaces, fiberglass, plate glass, wood, aluminum, OEM paint finish.
P/N 12-01406 ..... $31.95

MBX VINYL ZAPPER KITS

MBX Vinyl Zapper Kit is for removing vinyl decals and graphics on metal glass and fiber glass. It is available with either a pneumatic tool or an electric tool.

Description	Part No.	Price
MBX Electric Vinyl Zapper Kit USSE-01-05 MBX Electric Tool, 1-23mm Adaptor, 3 Vinyl Erasers	12-02037	$469.50
MBX Pneumatic Vinyl Zapper Kit USSP-01-05 MBX Pneumatic Tool, 1-23mm Adaptor, 3 Vinyl Erasers	12-02038	$469.50

STORAGE STATION

For storage of up to 15 wire belts or 9 rubber erasers and one MBX Power Tool (machine, belts, erasers not included).
P/N 12-01399 ..... $52.75

CLECO SHEET HOLDERS

K-SERIES SPRING CLECOS - Sheet holders provide the quickest method for holding sheets together for drilling or riveting. Drill the size hole needed for the rivet and insert the sheet holder. The holders listed comprise the most common sizes. Material thickness range 0" - 1/4". Use with sheet holder pliers. 10% discount on 50 pcs., 15% discount on 100 pcs.

Description	Size	Part No.	Price
M-3/32 CLECO	3/32"	12-01140	$0.49
M-1/8 CLECO	1/8"	12-01138	$0.48
M-5/32 CLECO	5/32"	12-01141	$0.48
M-3/16 CLECO	3/16"	12-01139	$0.49

KK-SERIES SHORT BODY SPRING CLECOS - A shorter overall body to use in areas of limited space. 0-1/4" grip range. Made in USA

Description	Size	Part No.	Price
CC-3/32 CLECO	3/32"	12-02073	$0.83
CC-1/8 CLECO	1/8"	12-02074	$0.83
CC-5/32 CLECO	5/32"	12-02075	$0.83
CC-3/16 CLECO	3/16"	12-02076	$0.83

KHD-SERIES LONG REACH SPRING CLECOS - Designed for clamping thicker material. 0-1/2" grip range. Made in USA

Description	Size	Part No.	Price
CHD-3/32 CLECO	3/32"	12-02077	$0.84
CHD-1/8 CLECO	1/8"	12-02078	$0.83
CHD-5/32 CLECO	5/32"	12-02079	$0.83
CHD-3/16 CLECO	3/16"	12-02080	$0.83

CL SERIES - The "CL" series fasteners are the standard plunger type Cleco with an extended grip range. Spring type Fastner

Description	Size	Part No.	Price
0-1/2" Grip, Zinc	#40	12-02425	$0.87
0-1/2" Grip, Copper	#30	12-02426	$0.83
0-1/2" Grip, Black	#21	12-02427	$0.83
0-1/2" Grip, Brass	#10	12-02428	$0.83

CLECO KEEPER

Fabricated of durable polypropolene, the Cleco Keeper is prepunched to hold up to fifty sheet metal fasteners. Allows the builder to extract and install Clecos from the storage bin to the work with one hand. Compact, the Cleco Keeper measures 8"L x 3"W. Helps eliminate misplaced fasteners and makes inventory of available fasteners quick and accurate. Available in three models to hold 3/32", 1/8", or 5/32" clecos.

For 3/32" clecos ..... P/N 12-10116 ..... $7.95
For 1/8" clecos..... P/N 12-10117 ..... $9.75
For 5/32" clecos ..... P/N 12-10118 ..... $7.95
For 3/16" clecos ..... P/N 12-00604 ..... $9.75

NO-MAR" REUSABLE CLECO BOOTS

Eliminates surface marring both on painted and unpainted surfaces. Easily slips on plier operated style clecos, one size fits all. Yellow polyurethane color. 25 pcs./pkg.

P/N 12-00626 ..... $10.65

CLECO SHEET HOLDER PLIERS

These pliers are designed to grip and actuate all standard sizes of sheet holders and tension clamps. New manufacture. P/N 12-10105 ..... $5.65

CLECO REVERSE PLIERS

Used in limited access areas. requires less travel per activation. Model TP74B.

P/N 12-00370 ..... $25.75

PNEUMATIC CLECO INSTALLATION TOOL

Features: • Lever throttle• 360° swivel mount• For use on button type and side grip temporary fasteners• Quiet operation• Straight handle• 5'8" polyurethane lead hose with 1/8" Male NPT• 5-3/8" Length of tool with 1/4" Female NPT Threaded for air fitting• Made in the U.S.A. P/N 12-01120 ..... $87.75

CLECO GRIP POWER DRIVEN SHEET HOLDERS

Power-Hex Nut Style -Standard Grip 0-1/2". Hex Nut Fasteners are recommended for high production applications that require a consistent clamping force. They are pneumatic driven with the US7381HX Power Nut Runner.

Description	Size	Part No.	Price
0-1/2" Grip Power Driven Hex Nut Fastner, Copper	#30	12-02430	$2.85
0-1/2" Grip Power Driven Hex Nut Fastner, Black	#21	12-02431	$2.85
0-1/2" Grip Power Driven Hex Nut Fastner, Brass	#10	12-02432	$2.90

Power-Hex Nut Style -Long Grip 0-1"

Description	Size	Part No.	Price
1" Grip Power Driven Hex Nut Fastner, Zinc	#40	12-02433	$2.95
1" Grip Power Driven Hex Nut Fastner, Copper	#30	12-02434	$3.35
1" Grip Power Driven Hex Nut Fastner, Black	#21	12-02435	$3.35
1" Grip Power Driven Hex Nut Fastner, Brass	#10	12-02436	$3.35

Manual Wing Nut Style - Standard Grip 0-1/2". Wing Nut Fasteners are recommended for low production applications where high clamping force is required. The clamping force ranges from zero to 300 lbs.

Description	Size	Part No.	Price
0-1/2" Grip Manual Wing Nut Fastner, Zinc	#40	12-02437	$2.90
0-1/2" Grip Manual Wing Nut Fastner, Copper	#30	12-02438	$2.98
0-1/2" Grip Manual Wing Nut Fastner, Black	#21	12-02439	$2.98
0-1/2" Grip Manual Wing Nut Fastner, Brass	#10	12-02440	$3.35

Manual Wing Nut Style - Long Grip 0-1"

Description	Size	Part No.	Price
1" Grip Manual Wing Nut Fastner, Zinc	#40	12-02441	$3.15
1" Grip Manual Wing Nut Fastner, Copper	#30	12-02442	$3.20
1" Grip Manual Wing Nut Fastner, Black	#21	12-02443	$3.25
1" Grip Manual Wing Nut Fastner, Brass	#10	12-02444	$3.15

HEAVY-DUTY BI-METAL HOLE SAWS

Milwaukee hole saws provide an economical means of extending the useful range of portable drills, drill presses and lathes. High speed cutting edges welded to steel bodies produce clean, accurate holes All hole saws listed cut to standard 1.25" depth. Order appropriate arbor for use with each size hole saw.

Hole Dia.	Part No.	Use w/Arbor No.	Price
5/8"	49-56-0620	12-01993	$8.45
3/4"	12-02001	"	$7.95
7/8"	12-01992	"	$9.60
1"	49-56-1000	"	$8.90
1-1/8"	12-01991	"	$8.50
1-3/16"	49-56-1180	"	$7.95
1-1/4"	49-56-1250	49-56-7055	$9.90
1-3/8"	49-56-1370	"	$9.50
1-1/2"	12-01990	"	$9.75
1-5/8"	49-56-1620	"	$8.95
1-3/4"	49-56-1750	"	$9.95
1-7/8"	49-56-1870	"	$9.55
2"	49-56-2000	"	$10.85
2-1/4"	49-56-2250	"	$15.50
3-1/8"	49-56-3120	"	$15.85

HEAVY-DUTY SHOE SAW ARBORS

ARBOR - Use for hole saw sizes 5/8" through 1-3/16". 3 milled flats prevent slipping in chuck. Pilot hole size 1/4". Has 1/4" shank. P/N 12-01993 ..... $12.45

QUICK CHANGE ARBOR - Use for hole saw sizes 1-1/4" and larger. The Quick Change 7/16" shank prevents slipping in chuck. Pin drive construction permits fast interchanging of hole saws without removing arbor from chuck. Pilot drill size 1/4". P/N 49-56-7055 ..... $22.75

TO

TAPER PIN REAMERS

Brown & Sharpe Taper pin reamers for installation of AN385 and AN386 aircraft taper pins. Straight shank, straight flute. High speed steel. No. 596 Straight Flute.

B&S Taper No.	Diameter		Flute Length	Part No.	Price
	Small End	Large End			
1	.1974	.3176	2-7/8"	12-01622	$56.50
2	.2474	.3781	3-1/8"	12-02704	$47.75
3	.3099	.4510	3-3/8"	12-09900	$49.75
4	.3474	.5017	3-11/16"	12-10000	$67.75
6	.4974	.6808	4-3/8"	12-10200	$59.65

TAPER PIN EXTRACTOR

The Tapered Pin Extractor tool easily, inexpensively, and without damage removes the tapered pin from the control column universal joint in Piper models PA-28, PA-32, PA-34, and PA-44. Made of Stainless Steel with two carbon steel capscrews.

P/N 12-02933.....$86.50

5 INCH SERRATED EDGE SCISSORS

5" stainless steel scissors are ideal for consumer and industrial applications.

High quality stainless steel blades meet perfectly for precision cutting. The material being cut is held in place by one blade which is slightly serrated providing maximum control. Scissors so sharp, they can cut through electrical wiring, plastic, aircraft composites, Kevlar® and more. P/N 12-02975.....$18.95

UTILITY SCISSORS

These 5.5" stainless steel utility scissors can cut through heavy materials, while the black plastic handle and ergonomic design make using the tool comfortable. These scissors are not only useful in the medical field, but in the industrial world as well, and its strong safety tip can offer peace of mind to medics and industrial workers alike.

P/N 13-03015..... $3.65

NO NICK TOOL CABLE TIE REMOVAL TOOL

No nick tool cable tie removal tool

P/N 12-03169.....$28.75

TWO STEP STUD EXTRACTORS

Our Two Step Stud Extractors are the simplest way to remove broken studs and require only 1/8" of the broken stud for removal. Simply tap stud remover on stud or frozen bolt with a hammer or mallet, and then remove stud by attaching a wrench to the hex portion of the remover. Just hammer on and screw out. Built to last from case hardened steel. Stud Extractors available in sizes listed below.

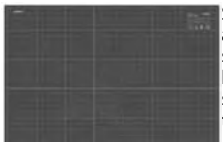
Part No.	Size	Price Ea.	Part No.	Size	Price Ea.
76001-76	3/16"	$42.85	76008-76	5/8"	$67.25
76002-76	1/4"	$39.95	76009-76	3/4"	$67.25
76003-76	5/16"	$42.85	76010-76	7/8"	$74.50
76004-76	3/8"	$44.85	76011-76	1"	$78.75
76005-76	7/16	$45.55	76012-76	Set 3/16-1/2"	$212.95
76006-76	1/2"	$49.75	76013-76	Set 9/16-1"	$351.95
76007-76	9/16"	$64.25			

SPOTFACE KIT

The Spotface Kit tool makes a flat spot for screws. This tool is specifically modified to provide rail cap clearance for use on seat rails. Cutter comes with 1/8", 5/32", 3/16" pilots.

P/N 05-04429.....$77.75

SELF HEALING ROTARY CUTTING MATS



Self-healing, double-sided large mat protects and covers work. Green, self-healing professional quality rotary mat. Double-sided with yellow grid lines on one side for precision cutting, solid on opposite for general cutting. 1.5mm thick for a variety of applications. Store flat.

24" x 36" .....P/N 12-02403 ..... $43.50
23" x 70" - with clip set (RM-clips/2) .....P/N 12-02404 ..... $93.75
35" x 70" - with clip set (RM-clips/3) .....P/N 12-02405 .....$133.95

ROTARY CUTTER

Ergonomic 45mm rotary cutter features a unique comfortable handle design for both left- and right-handed use.

Rotary Cutter..... P/N 01-00302 .....$23.50
RB45-1 Replacement Blade only..... P/N 01-00300 ..... $6.95
RB45-1 Replacement Blade pk of 5 ..... P/N 01-00301 .....$27.75
Rotary Pinking Blade..... P/N 12-01709 ..... $9.75

Good For: general quilting, sewing and craft projects. Great for cutting out patterns, reduces fraying. Can be used in industrial applications.

STAINLESS STEEL SCISSORS

The OLFA stainless steel scissors (7" overall length) are extremely high quality stainless steel blades perfect for precision cutting. Ideal for use on such varied materials as paper, fabrics, plastic, rubber, & aircraft composites..... P/N 01-00303 .....$18.95

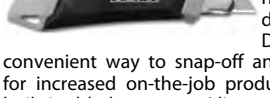
MULTIPURPOSE PLASTIC UTILITY KNIFE - Auto-Lock-featured standard-duty model with a pocket clip/blade snapper. For both right- and left-handed uses. Handle and all plastic parts made from 100% recycled materials. Easy disassembly for next recycling. 9mm. .....P/N 12-03652..... $5.95

L-2 CUTTER - 18MM heavy-duty cutter features a ratchet wheel blade lock, heavy gauge stainless steel blade channel, highest grade carbon tool steel blade and anti-slip rubber grip insert. P/N 12-00258.....$8.50

NOL-1 CUTTER - Heavy-duty 18mm "HandSaver" Acetone resistant cushion grip with ratchet wheel blade lock and high-carbon tool steel snap-off OLFA blade.

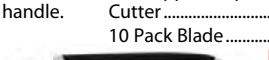
.. Cutter..... P/N 12-00257 ..... $8.75
Replacement Blades (5 pack)..... P/N 12-00261 ..... $4.45

SNAP IT 'N' TRAP IT CUTTER - 18mm heavy duty cutter features an innovative design for performance and functionality. Developed for professionals looking for a convenient way to snap-off and securely store their dull blade segment for increased on-the-job productivity. Features a convenient detachable built-in blade snapper/disposal container in a heavy-duty ABS plastic handle. Cutter.....P/N 12-02696.....$10.95
10 Pack Blade.....P/N 12-02697..... $7.95



ULTRAMAX CUTTER - Heavy-duty utility knife / cutter is an auto lock cutter includes a stainless steel blade channel with a unique cushion handle provides a comfortable and positive grip.

P/N 12-02367..... $8.95



H-1 CUTTER - 25mm Extra heavy-duty cutter features largest blade available, ratchet lock to prevent slipping, rubber grip insert for positive control, and a rope loop to secure cutter to belt or work table. Cutter.....P/N 12-00259.....$13.75
Replacement blades (5 pack)..... P/N 12-00260..... $7.50

AUTO-LOCKSTAINLESSPROFESSIONAL KNIFE - Accomodates both left- and right-handed users. Features locking slide blade, stainless steel handle and built-in pocket clip/blade snapper. A perfect steel cutter where rust is a concern. Lifetime Guarantee.

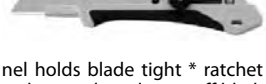
Cutter.....P/N 12-00339..... $7.50
Replacement blades (10 pack) .....P/N 12-00340..... $4.85

EXTRA HEAVY DUTY RACHET LOCK CUTTER - 25mm Extra heavy-duty cutter features: *anti-slip cushion handle for exceptional comfort and safety *chemical resistant handle for easy cleaning * Heavy guage stainless steel blade channel holds blade tight * ratchet wheel blade lock *rope loop * high-quality carbon tool steel snap-off blades for sharpness and durability.

P/N 12-02368.....$14.75

EXTRA HEAVY DUTY SNAP-OFF BLADE, 20 PACK - Snap-off black blades, are made from high quality carbon tool steel. Blade container locks for safety. Fits most Extra Heavy-Duty handles. 7 cutting edges per blade. 20 blades per pack. P/N 12-02369.....$26.50

EXTRA HEAVY DUTY RATCHET LOCK CUTTER - Anti-slip grip cutting tool. Features an automatic blade lock, cushion grip for maximum comfort and control, and a heavy gauge stainless steel blade channel that holds blade tight. Chemical resistant handle for easy cleaning. Includes a pocket clip for convenience, and the premium, ULTRAMAX® ultra sharp durable snap-off blade.



P/N 12-02370..... $6.50

TO

CIRCULAR HOLE CUTTER

General's circle cutters produce precision circles in sheet metal, brass, copper, soft steel, aluminum, plastic, wood and composition materials. Bodies are constructed of heat treated tool steel for durability. All Circle Cutters have replaceable pilot points. The replaceable cutter blades are made of high-speed steel for precise and clean cuts. Circle Cutters are adjustable for cutting variable diameter holes. A hex wrench is included for diameter and depth adjustments.

#4 Cutter ..... P/N 12-10600 ..... $13.75
Extra 3/16" Blade ..... P/N 12-10700 ..... $3.75
Pilot Drills for #4 Cutter ..... P/N 12-10800 ..... $3.50

JEWELERS' SCREWDRIVER KITS

The Screwdriver and Hobby Kit includes five interchangeable blades and a heavy duty knurled handle. Loaded with the most popular jeweler's-sized Slotted and Phillips tips and a scratch awl, this modestly priced set is great for model making and other small-scale applications.

P/N 12-19600 ..... $5.95

SWIVEL HEAD PIN VISE

The Swivel Head Pin Vise provides fingertip control of small tools when working with jewelry, electronics or models. The double-ended collet offers two distinct sizes for holding a variety of drill bits, reamers and taps. For added control, this Pin Vise has been design with a knurled aluminum body for a sure grip while the swivel head turns smoothly against your palm. P/N 92 ..... $9.95

STEEL PROTRACTORS

Trusted by machinists and draftsmen worldwide to deliver crucial measurements with unwavering accuracy. The 6" adjustable arm is ideal for setting bevels, taking measurements and transferring angles. Ultra-fine etched graduations read from 0 to 180 degrees in forward and reverse directions, and will not wear or rub off. Made of ground stainless steel for precision and durability. P/N 17 ..... $13.75

POCKET CALIPERS

Although small in stature, these 4" Slide Calipers deliver the same accuracy and precision as some of our larger models. The rugged, stainless steel construction, coupled with a compact design makes these Slide Calipers a great addition to any workbench or toolbox. This item provides inside and outside readings in both 1/16" and 1/32" graduations. In addition, there is a decimal equivalents chart on the caliper's back side for help in making measurement calculations.16ths & 32nds P/N 729 ..... $11.75

16ths & MM ..... P/N 12-01633 ..... $12.25

DIGITAL FRACTIONAL CALIPER

The Carbon Fiber Digital Fractional Caliper brings you three universal systems of measurement, making it an equally practical choice for both professional and do-it-yourself projects. The high-contrast digital display easily switches between inches, millimeters and fractions, with guaranteed accuracy to 0.001". In addition, the lightweight, non-marring carbon fiber construction delivers accurate readings of inside, outside, step and depth measurements.

3" Caliper ..... P/N 12-02307 ..... $16.75
6" Caliper ..... P/N 12-03201 ..... $25.75

WIRE STRIPPERS & CUTTERS

Just dial the size and avoid damaging wire, especially when used repetitively. Spring opening jaws can be locked in closed position to protect cutting edges. Made of tool steel, equipped with vinyl cushion grip handles. Individually carded. P/N 69 ..... $9.95

FEELER GAGES

Blades are made of tempered steel of exacting tolerances. Each blade has its size etched in both decimals of an inch and millimeters. Nickel plated case has knurled locking nut. No. 230 has 26 3x1/2 in. leaves of the following sizes: .0015, .002, .0025, .003. .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024 and .025 in. P/N 230 ..... $7.75

REVOLVING PUNCH

General's revolving punch plier is a convenient spring tension, self-opening tool for punching round holes in leather, plastic, rubber, canvas, cardboard and similar materials. The snap ring pliers are used for the installation or removal of exterior and interior snap rings. Revolving turret with six hardened steel punches: 5/64", 3/32", 7/64", 1/8", 5/32", and 3/16" P/N 72 ..... $9.90

6 INCH ELECTRONIC DIGITAL CALIPER

The Thread Repair Files help breathe life back into bolts, screws or fittings that have been damaged due to cross-threading or corrosion. Made of high carbon steel, the Repair Files offer eight different thread pitches. In addition, the Thread Repair Files can also be used as a screw pitch gage. P/N 12-01880 ..... $77.50

STEEL RULES

General's industrial quality Steel Rules are precision made with etched fine black graduations for easy reading and long life. The two finishes available are polished stainless steel or satin chrome. Front graduated in 10ths, and 100ths, back in 32nds and 64ths. Quality 12 inch (30cm) flexible stainless steel rule. Precision made. Fine black etched graduations. 6" Long, 15/32" Wide ..... P/N 616 ..... $5.35
12" Long, 15/32" Wide ..... P/N 1216 ..... $8.95

PERMANENT ALNICO MAGNETS

These industrial grade Alnico (Aluminum/Nickel/Cobalt) Magnets are built for heavy duty use and will not naturally demagnetize over time like other magnets. They are handy in a plethora of applications and work settings. The horseshoe-shaped Power Alnico Magnets are available in 2 distinct sizes with extraordinarily strong pull capacities ranging up to 13 lbs.No. 370-1 Pocket Magnet, 3/4 oz., approx. 1 lb. pull

P/N 370-1 ..... $5.95

No. 370-2 Power Magnet, 2 oz., approx. 13 lb. pull

P/N 370-2 ..... $12.95

WIRE & SHEET METAL GAUGES

#20 WIRE GAUGE - The Wire Gage helps you to accurately determine the thickness of American Standard wire from 0 to 36. The Gage works with all non-ferrous wires, metals and rods such as copper, brass and aluminum. This heavy duty tool is made from hardened and tempered steel, and is stamped with wire sizes on the front and their decimal equivalents on the back

#20 American Standard Wire Gauge - For gauging non-ferrous wire & metal like copper, brass, aluminum, etc.

P/N 12-02384 ..... $22.65

#21 U.S. STANDARD SHEET METAL GAUGE - The Sheet Metal Gage is for gauging uncoated sheet, plate iron and steel, based on weights in ounces per square foot. gauge numbers are in U.S. Standard. Numbers 0-36 (.325"-.007"). Made of hardened steel, with a satin finish for easy reading. Decimal equivalents on the back side. Measures 3-1/4" in diameter. P/N 21 ..... $21.85

SCREWDRIVER HANDLE SCRATCH AWL

If you're looking for a quality, yet economic awl, then check out our Screwdriver Handle Scratch Awl. Featuring a 3-5/8" steel blade and a durable plastic handle, this Scratch Awl makes a great addition to any workbench of toolbox.

P/N 12-01873 ..... $5.95

UTILITY AUTOMATIC CENTER PUNCH

The Utility Automatic Center Punch is our most economical model, offering a lightweight aluminum body and a hardened steel point. The punch is great for use on various metals and woods, and is impact adjustable. P/N 12-01874 ..... $11.85

STAINLESS STEEL AUTOMATIC CENTER PUNCH

Provides accurate center punches to prevent drill bits from traveling. It has a one-hand spring impact operation, no hammer needed. This is used for marking, punching & staking and it has a durable stainless steel body that will not rust. P/N 12-03515 ..... $13.65

TRAMMEL POINTS

General's adjustable trammels accurately measure and mark distances that are too great for conventional compasses and dividers. Trammels will accurately transfer measurements, scribe arcs and lay out circles. Points can be replaced with pencils, ballpoint pens, crayons or soapstone sticks for marking various materials

P/N 520 ..... $34.75

DRILL GAUGES

General's Drill Gages help you to quickly and accurately identify the sizes of stray drill bits in your workshop. These gages can be extremely useful with older, unmarked bits or ones that are too small for markings. Each heat treated, heavy steel gage is machined to close tolerance for spot-on accuracy. The bit sizes and decimal equivalents are permanently etched to the face to provide years of dependable use.

Part No.	No.	Description	Price
12-00518	13	Number size drills 61 to 80	$15.75
12-00519	14	Fractional size drills 1/16" – 1/2" x 64ths	$12.75
12-00378	15	Number size drills 1 to 60	$12.95

TO

GENERAL SPECIALTY TOOLS

COTTER PIN PULLER

General's Cotter Pin Puller helps you to easily and safely remove steel cotter pins from confined areas. The compound bend design facilitates use of the tool with either a pull or a twist motion. In addition, the heavy duty screwdriver handle provides a familiar, comfortable grip.

P/N 12-01892 ..... $6.95

PRECISION MAGNETIZER/DEMAGNETIZER

Our Precision Magnetizer and Demagnetizer transforms standard screwdrivers, tweezers and tool bits into powerful magnetic pickups. This dual-sized device can magnetize screwdrivers for installing small screws in jewelry, or demagnetize a set of tweezers for working with sensitive electronics. In addition, the innovative step design allows you to control the level of magnetism that is imposed upon your tools. P/N 12-01890 ..... $3.95

ARCH PUNCH SET

Our extensive selection of Arch Punches are machined to close tolerances for creating precise holes in gasket material, rubber and soft metals. These industrial-quality tools are hand forged to ensure the longevity and accuracy of the cutting edge. This seven-piece set includes some of our most popular punch sizes and is conveniently packaged in a vinyl storage pouch. P/N 12-01891 ..... $76.85

INSPECTION MIRRORS

General's Inspection Mirrors are known for their seemingly limitless uses both around the home and in the shop. For instance, an Inspection Mirror can be used to check behind an armoire for lost keys or beneath an engine block for a missing bolt. The Inspection Mirrors come in a variety sizes and lengths, and feature dual ball-and-socket joints for infinite angle adjustments of the mirror.

1-1/4 Diam ..... P/N 12-01887 ..... $6.75
2-1/4 Diam ..... P/N 12-01888 ..... $9.75
3-1/2 Oblong ..... P/N 12-01889 ..... $10.75

LED-LIGHTED TELESCOPING INSPECTION MIRROR

2 extra bright LED lights facilitate the inspection of hard-to-see and hard-to-reach areas. Easily peer into the dark crevices of your work space in search of leaks, breaks or lost tools. Telescoping shaft extends to 33 in. (840mm). Fully polished, shatter-resistant glass mirror sits on a 360° swivel, double ball joint for accurate positioning and infinite angle adjustments. Non-slip cushion grip. CE Approved.

Round Mirror ..... P/N 12-03197 ..... $14.65
Rectangular Mirror ..... P/N 12-03199 ..... $14.65

TELESCOPING ALLIGATOR CLIP

The Telescoping Alligator Clip is often used as a third-hand tool in electrical repair for holding and positioning wires. It is also commonly employed around the home for lighting pilot lights and barbeques. The extendable shaft reaches up to 24-1/2" for working in cramped areas, or to provide a safety buffer for lighting a gas grill or furnace. The tool condenses to 5-1/2" and is equipped with pocket clip for those on the go. P/N 12-01884 ..... $5.75

DECAL ERASER WHEEL

For quick and easy removal of decals, pinstripes, bumper stickers, reflective tapes etc from glass and OEM painted surfaces without any damage. Also very effective in removing adhesive tapes and glue from the back of moldings. Best result at 1500 - 3000 rpm. Let the wheel do the work, apply light pressure only. Start at the top of the decal and move side to side. For faster results, use entire width of the wheel, do not tilt on angle. Remove any residue with appropriate mild solvent. Natural Rubber. Diameter: 4 Inch. Width: 1 Inch. Max RPM: 4000 Universal arbor, no special tool needed. Use with electric or pneumatic tools

P/N 12-02401 ..... $16.50

CESSNA COWLING FASTENER DRIVER

Slotted type cowling fasteners are not easy to fit with generic common screwdrivers. To overcome this, driver has a broad hollow cut tip that accurately engages the drive slot. Additionally, a no mar, spring loaded, plastic sleeve simultaneously guides the tip by fitting around the outside diameter of the fastener head. ..... P/N 12-17615 ..... $22.85

5PC EXTRA LONG DRIVE PIN PUNCH SET

Our Drive Pin Punches have been machined to exacting tolerances for accurate driving without damaging the pin or hole. The punch ends are ground square to sit flush on the top of the pin. Made of hardened tool steel with a knurled body, General's Drive Pin Punches can either be held by hand or with our Punch and Chisel holder. This five-piece set features extra-long 3-1/2" shafts for reaching deeply recessed pins. P/N 12-01875 ..... $29.85

5-PC PRECISION ULTRAREACH STAR SCREWDRIVER SET SLOTTED & PHILLIPS

Our UltraTech Precision Screwdriver Sets were assembled in conjunction with industry tradesmen to offer the most comprehensive and reliable solutions. This five-piece set includes Slotted and Phillips screwdrivers in two distinct handle sizes. The color-coded ring on each screwdriver helps you to easily identify the blade type when working arduously in the field.

P/N 12-01881 ..... $17.95

5-PC PRECISION ULTRAREACH STAR SCREWDRIVER SET

Our UltraTech Precision Screwdriver Sets were assembled in conjunction with industry tradesmen to offer the most comprehensive and reliable solutions. This five-piece Torx set features a great assortment of blades in two distinct handle sizes. The color-coded ring on each screwdriver helps you to easily identify the blade type when working arduously in the field.

P/N 12-01882 ..... $20.75

PICK AND HOOK 4 PIECE SET

Get into tight places to retrieve small parts, "O" rings, and gaskets. Great for household and hobby use. Includes straight pick, 90° pick, 120° hook, and round angle hook. High-visibility handles. Screwdriver-style handles give better control. Specifications: Includes straight pick, 90° pick, 120° hook, and round angle hook, High-visibility handles, Screwdriver-style handles give better control, 5-1/4" average length, Handle: 5/8" square, 2-1/2" L, Approximate weight: 0.20 lbs.

P/N 12-02642 ..... $3.40

BULLSEYE PICKS

The bullseye pick was originally used in the dent repair/collision trade, but also works great for restoration work. These are ideal to reach in around the edge of a panel, around a gusset, or into a blind area to repair the dent from the backside. By sighting the low area through the open sight, the tool will deliver accurate light blows to raise the low area. This tool includes both a regular pick and a blunt tip. The blunt tip works great for aluminum and prevents unattractive pick marks in the metal.

15" ..... P/N 12-02292 ..... $109.75
25" ..... P/N 12-02293 ..... $119.95

THREAD REPAIR FILE

The Thread Repair Files help breathe life back into bolts, screws or fittings that have been damaged due to cross-threading or corrosion. Made of high carbon steel, the Repair Files offer eight different thread pitches. In addition, the Thread Repair Files can also be used as a screw pitch gage. P/N 12-01879 ..... $10.95

PRECISION PENCIL COMPASS

The Precision Pencil Compass is a robust scribing and marking tool with a jaw capacity of up to 9". The fulcrum spring handle makes this tool great for making contours, circles and edge marks. A carpenter's favorite. P/N 12-01872 ..... $5.95

CESSNA SEAT RAIL GAGE

Allows for quick limit checking of seat rail hole and wear dimensions Gage elements are made from heat treated blue tempered steel Each element is marked to correspond to the limits set forth in the relevant ad The three gage elements are linked together on a universal spiral key ring.

P/N 12-01056 ..... $26.50

TO

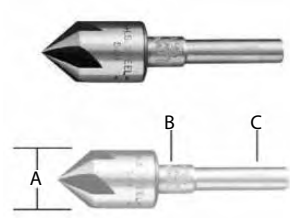
M-4 PIPER / CESSNA / MOONEY TAPER PIN TOOL

Sweating the Piper Control Wheel AD? Relax, this patent pending M-4 tool makes the hardest part of compliance with this AD easy. This specialty tool was designed to counter the frustration of removing the Piper control wheel taper pin.

With the aid of the M-4 tool even the most stubborn taper pin can be removed in minutes, not hours, without vibration or stress being induced on your aircraft or the surrounding delicate instruments and avionics. The tool is self-indexing, locking the taper pin in position and securing itself in place for easy pin removal.

Quality made in the USA and precision milled from bar stock for maximum strength, the body is Cad Plated for corrosion resistance and the press screw is Grade 8 to assure long life. The tool is shipped with detailed instructions. P/N 12-02620.....$195.00

5 FLUTE ROSE PATTERN COUNTERSINKS



Designed with the perfectionist in mind, our Rose Pattern Countersinks are a must have for any close-tolerance woodworking or machinist project. The 5-flute design reduces chatter and easily pierces steel, brass, aluminum, plastic and wood. The stepped shank can be used with either a 1/4" or 3/8" chuck.

A	B	C	PN	Price
1/2"	3/8"	1/4"	12-01863	$3.85
5/8"	3/8"	1/4"	12-01865	$3.95
3/4"	3/8"	1/4"	12-01864	$4.95

6 INCH CONTOUR GAGE

General's 6" Contour Gage is designed for precise surface duplication in woodworking, fine carpentry and other professional genres. The 35 ultra-thin leaves per inch assure that you are getting an exact replication of your copied shape. The Contour Gage is capable of duplicating surfaces up to 3-1/2" deep. Instructions: 1. Press Contour Gage against surface to be copied. 2. Trace the formed contour gage onto your cutting material. 3. Cut the material. 4. Fit into place. P/N 12-01870.....$8.95

UTILITY TUNGSTEN CARBIDE TIP SCRIBER/ETCHING PEN

The power of our Utility Scriber and Etching Pen is eclipsed only by its affordability. This durable scriber is a terrific pickup for making quick and accurate marks in the hardest work pieces. In addition, the Utility Scriber includes a permanent magnet affixed to the cap for retrieving and cleaning loose metal shavings. P/N 12-01876.....$3.60

PLAIN TAP WRENCHES

The standard Tap Wrenches are perfect for creating straight and accurate thread holes in your work piece. The fixed T-Handle provides a large gripping surface for generating maximum leverage. This versatile tool can also be used with reamers, drill bits, screw extractors and other hand-turned tools.

Tap Capacity	Length	Part No.	Price
NO. 0 TO 1/4" (1.6 TO 6.3mm)	2-1/4" (57mm)	12-01877	$11.85
NO. 12 TO 1/2" (6 TO 12mm)	3-3/4" (95mm)	12-01878	$14.75

RATCHET OFFSET SCREWDRIVER

An Offset Ratchet Screwdriver is a useful tool to have on hand as it provides greater leverage compared to a traditional screwdriver. The swift ratcheting motion allows you to remove and install screws with ease, and the offset head provides odd-angle access in obstructed areas. This item features two Slotted screwdriver blades and a reversible ratchet.

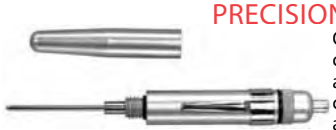
P/N 12-01883.....$8.95

LIGHTED POWER PRECISION SCREWDRIVER

The new lighted cordless precision screwdriver (502) from general tools & instruments (general) is a first-of-its-kind tool that can handle all of those difficult, repetitive fastening jobs involving tiny screws in tight spaces where it is difficult to see. it s perfect for on-the-go technicians and anyone who works with small parts and micro assemblies. Super Bright LED Light 6+ Hours of Power 100+ RPM Super-Torque Drive Cordless (2 AAA alkaline batteries included)

Screwdriver.....P/N 12-03517.....$26.90
Replacement Bit Set.....P/N 12-03516.....$4.60

PRECISION OILER



Our Precision Oiler is a highly accurate lubrication tool intended for anyone working with small mechanical parts. The needlepoint tip allows for the precise placement of oil in confined areas. The smooth thumb actuator lets you control the release of lubricant from the reservoir in small droplets. In addition, the Precision Oiler includes a screw-on cover and pocket clip for use on the go. P/N 12-01894.....$9.75

REPLACEMENT BLADE OIL CAN CUTTER

General Tool's Gold Standard Cutting Wheels are made from tempered, bearing tool steel for smooth, exact pipe cuts. The slim-line surface geometry ensures fewer inner surfaces burrs and less chance for outer surface distortion. The RW122 is designed for larger capacity cutters on iron pipe and other tough surfaces P/N 12-01159.....$6.50

CUTTER PLUG WOODWORKING

General's Plug Cutters produce accurate plugs for covering screw holes in decking, flooring and fine furniture. Plug cutters are great for creating a decorative effect in any woodworking project and can also be used to repair nicks, scratches and dents. Each cutter is made from hardened alloy steel and will fit in both hand-held power drills and drill presses.

3/8.....P/N12-01866.....$4.60
1/2.....P/N 12-01867.....$4.70
5/8.....P/N 12-01868.....$4.85

JOGGLE-360 FABRICATION TOOL

Noah Industries has introduced the Joggle-360 into its lineup of innovative metal aircraft fabrication tools. The Joggle-360 will joggle round openings for inspection plates with joggle widths up to 0.562 inch and straight joggle offsets up to 0.625 inch. The tool features hardened steel rollers that form the joggle while gliding around the opening or along the edge by ball bearings that eccentrically adjust for joggle width.

Instruction:

1. Adjust the guide rollers to the desired set back or width of joggle by rotating the Eccentric Guide Roller Adjustment Screws with an Allen wrench.
2. Place the Joggle-360 onto the work that you are going to joggle and tighten the Tension Knob.
3. For straight joggles, run the Joggle-360 back and forth along the work tightening the Tension Knob as required until you achieve the desired joggle depth. Joggling a hole is the same process. Be sure to keep the Guide Rollers in contact with the edge of your work.
4. When the joggle is finished, loosen the Tension Knob and remove the tool from from your work.

Note: You may need to tighten the Eccentric Lock Screws from time to time in order to keep the Eccentric Guide Rollers from rotating during use. P/N 12-02252.....$180.75

TO

KNIPEX PRECISION TOOLS

KNIPEX PRECISION-SNAP-RING PLIERS SET

Contains common Precision Circlip Pliers for highest requirements in sturdy plastic packaging, also suitable for storage of the pliers. From 12-25 to 19-60 Straight Tip and 12-25 to 60 Bent Tip.

P/N 15-08431.....$194.75

KNIPEX HIGH LEVERAGE COMBINATION PLIERS

35 % less effort required than with conventional combination pliers easier work due to optimised leverage with cutting edges (hardness approx. 63 HRC) for soft and hard wire and piano wire. Long cutting edges for thicker cables with gripping zones for flat and round material, suitable for versatile use. High-grade special tool steel, forged, oil-hardened, 200mm length. 8 inch.

8 inch Pliers(pictured)..... P/N 15-08432..... $26.75
8 inch Pliers with Comfort Grip ..... P/N 15-08433..... $31.50

KNIPEX COMBINATION PLIERS

Gripping zones for flat and round material, suitable for versatile use with cutting edges for soft and hard wire. Long cutting edges for thicker cables cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC Special tool steel, forged, oil-hardened, 8 inch. P/N 15-08434..... $24.00

KNIPEX HIGH LEVERAGE COMBINATION PLIERS COMFORT GRIP

Gripping zones for flat and round material, suitable for versatile use with cutting edges for soft and hard wire. Long cutting edges for thicker cables cutting edges additionally induction hardened, cutting edge hardness approx. 60 HRC Special tool steel, forged, oil-hardened, 6.25 inches.

P/N 15-08435..... $24.90

KNIPEX DIAGONAL CUTTERS

The indispensable diagonal cutter for all-round use with high quality material and precise workmanship for long service life. Precision cutting edges for soft and hard wire, clean cutting of thin copper wires, also at the cutting-edge tips cutting edges additionally induction hardened, cutting edge hardness approx. 62 HRC narrow head style for use in confined areas. Vanadium electric steel; forged, oil-hardened, 7.25 inches.

7.25 inch Pliers (pictured)..... P/N 15-08436..... $29.50
7.25 inc Pliers with Comfort Grip..... P/N 15-08437..... $28.50

KNIPEX COBRA PLIERS QUICK SET STYLE

Adjustment at the touch of a button directly on the work piece with fine adjustment for optimum adaptation to different sizes of work pieces and a comfortable handle width. Self-locking on pipes and nuts: no slipping on the work piece and low hand force required. 61 HRC: low wear and stable gripping. Just position the upper jaw to the workpiece, push button and move close the lower jaw, ingeniously simple. 10 Inch

P/N 15-08438..... $41.50

KNIPEX AUTO ADJUSTING WATER PUMP PLIERS

Automatic adjustment per one-hand operation both for right-handed and left-handed use with good access to the workpiece thanks to the slim dimensions in the head and joint area and flush joint bolt. Self-locking on pipes and nuts: no slipping on the workpiece and low handforce required. Gripping surfaces with special hardened teeth, teeth hardness approx.
61 HRC: low wear and stable gripping box-joint design: high stability because of the double guide. Guard prevents operators' fingers being pinched and locking lever for space saving transport with reliable closed handles. Chrome vanadium electric steel, forged, oil-hardened 10 inch. P/N 15-08439..... $65.95

KNIPEX PLIERS WRENCHES

Adjustable tightening tool, also excellent for gripping, holding, pressing and bending work pieces. Replaces the need for sets of metric and imperial spanners, with smooth jaws for damage free installation of plated fittings Zero backlash jaw pressure prevents damage to edges of sensitive components. Adjustment at the touch of a button directly on the work piece and parallel jaws give a more solid grip; the construction gives infinite adjustment of all widths up to the specified maximum size.

6 Inch..... P/N 15-08440..... $57.75
7.25 Inch..... P/N 15-08441..... $58.75
10 Inch..... P/N 15-08442..... $65.75
12 Inch..... P/N 15-08443..... $81.75

KNIPEX PLIERS WRENCH-COMFORT GRIP

Adjustable tightening tool, also excellent for gripping, holding, pressing and bending work pieces. Replaces the need for sets of metric and imperial spanners, with smooth jaws for damage free installation of plated fittings Zero backlash jaw pressure prevents damage to edges of sensitive components. Adjustment at the touch of a button directly on the work piece and parallel jaws give a more solid grip; the construction gives infinite adjustment of all widths up to the specified maximum size.

6 Inch..... P/N 15-08444..... $63.75
7.25 Inch..... P/N 15-08445..... $64.75
10 Inch..... P/N 15-08446..... $72.75

KNIPEX COBRA PLIERS

Adjustment at the touch of a button directly on the work piece with fine adjustment for optimum adaptation to different sizes of work pieces and a comfortable handle width. Self-locking on pipes and nuts: no slipping on the work piece and low hand force required. Gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC. Box-joint design. Reliable catching of the hinge bolt: no unintentional shifting and guard prevents operators' fingers being pinched. Chrome vanadium electric steel, forged, oil-hardened. Pliers Pictured are without the comfort grip. Pictured without Comfort Grip.

5 inch..... P/N 15-08447..... $34.50
6 inch..... P/N 15-08448..... $34.95
7.25 inch..... P/N 15-08449..... $36.75
7.25 inch with Comfort Grip..... P/N 15-08452..... $40.50
10 inch..... P/N 15-08450..... $38.95
10 inch with Comfort Grip..... P/N 15-08453..... $43.50
12 inch..... P/N 15-08451..... $53.95
12 inch with Comfort Grip..... P/N 15-08454..... $60.75

KNIPEX ALLIGATOR PLIERS

More output and comfort compared to conventional water pump pliers of the same length: 9-notch adjustment positioning for 30 % more gripping capacity. Self-locking on pipes and nuts. Gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC. Box-joint design. Particularly suitable for outdoor work. Guard prevents operators' fingers being pinched. Chrome vanadium electric steel, forged, oil-hardened. Pictured without Comfort Grip.

7.25 inch..... P/N 15-08455..... $25.50
7.25 inch with Comfort Grip..... P/N 15-08458..... $29.95
10 inch..... P/N 15-08456..... $28.50
10 inch with Comfort Grip..... P/N 15-08459..... $33.50
12 inch..... P/N 15-08457..... $43.00
12 inch with Comfort Grip..... P/N 15-08460..... $46.50

KNIPEX 3PC UNIVERSAL PLIERS SET & ALLIGATOR PLIERS

This 3pc Professional Pliers Set includes: Angled High Leverage Diagonal Cutter 8", Knipex Alligator Water pump Pliers 10", Long Nose Pliers with Cutter 8".

P/N 15-08461..... $92.75

KNIPEX 3PC COBRA PLIERS SET

Knipex 3pc Cobra Pliers Set 7", 10", 12". Adjustment at the touch of a button directly on the work piece with fine adjustment for optimum adaptation to different sizes of work pieces and a comfortable handle width. Self-locking on pipes and nuts. Gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC. Box-joint design. Reliable catching of the hinge bolt. Chrome vanadium electric steel, forged, oil-hardened. P/N 15-08462..... $124.75

KNIPEX 3 PC ALLIGATOR PLIERS SET

Knipex 3pc Alligater Water pump Pliers 7", 10", 12". More output and comfort compared to conventional water pump pliers of the same length. Self-locking on pipes and nuts. Gripping surfaces with special hardened teeth, teeth hardness approx. 61 HRC. Box-joint design. Particularly suitable for outdoor work. Guard prevents operators' fingers being pinched. Chrome vanadium electric steel, forged, oil-hardened. P/N 15-08463..... $91.95

KNIPEX 3PC UNIVERSAL PLIERS SET & COBRA PLIERS

This 3pc Professional Pliers Set includes: Angled High Leverage Diagonal Cutter 8", Knipex Cobra Water pump Pliers 10", Long Nose Pliers with Cutter 8"

P/N 15-08464..... $103.95

KNIPEX 2 PC MINI PLIERS WITH BELT POUCH

Knipex 2pc Mini Pliers Set includes: Knipex Pliers Wrench 6", Knipex Cobra Pliers Wrench 5".

P/N 15-08465..... $109.75

TO

AIRCRAFT GRADE SUPER COBALT DRILLS

These super cobalt hi-speed jobber length aircraft drill bits feature heavy duty construction to Type J aircraft specifications. Use to drill hard, tough metals, stainless steels, iron based and titanium alloys, and certain plastics. Hardness of cobalt permits speeds 30% over regular H.S.S. drills. Cobalt drills demand rigidly held, positive feed drilling equipment.

Part No.	Drill Size	Price Ea.
12-03698	51	$1.35
12-04212	42	$1.35
12-04213	41	$1.37
12-04214	40	$1.30
12-04215	36	$1.55
12-04216	33	$1.55
12-04217	30	$1.65
12-04218	28	$1.75
12-04219	27	$1.95
12-04220	23	$2.05

Part No.	Drill Size	Price Ea.
12-14221	21	$1.95
12-04221	19	$2.10
12-04222	12	$2.65
12-04223	10	$2.65
12-04224	"D"	$3.95
12-04225	1/8"	$1.75
12-04226	5/32"	$1.95
12-04227	3/16"	$2.40
12-04228	1/4"	$3.50
12-04229	5/16"	$5.25
12-04235	#35	$1.65

12" LONG DRILL BITS

These 12" long drill bits are for use with standard electric drills for the hard to reach jobs.

Drill	Size	Part No.	Price
3/32"	(.094")	12-05200	$5.50
1/8"	(.125")	12-05300	$5.75
3/16"	(.188")	12-05400	$6.95
#10	(.194")	12-05500	$7.75
1/4"	(.250")	12-05600	$8.50

MALE THREADED DRILL BITS

Male threaded drill bits of high speed steel screw into female spindle of angle drill or snake drill.

Drill	10-32 Thread		1/4-28 Thread	
Size	Part No.	Price	Part No.	Price
#10	12-05701	$10.95	12-05702	$2.80
#20	12-05801	$11.85	12-05802	$2.95
#21	12-05901	$12.25	12-05902	$2.95
#30	12-06001	$11.75	12-06002	$2.50
#40	12-06101	$11.95	12-06102	$2.50

ANGLE DRILL ATTACHMENT

Quickly connects to any drill chuck. Makes a convenient, inexpensive close-quarter tool. 3/16 drill capacity.

Specify threaded spindle size: 5/16-24 (P/N 12-18503), 1/4-28 (P/N 12-18501) or 10-32 (P/N 12-18502) $78.85

Angle Drill w/ Key Chuck (1/4-28 Only) ..... P/N 12-18511 ..... $169.75

ANGLE DRILL KIT - Includes tool case, 24" flexible attachment, 4 threaded drills, collet adapter, 90° angle drill, straight drill attachment, 4 collet drills. P/N 12-18505 ..... $263.96

SNAKE DRILL ATTACHMENT

Heavy-duty 90° flexible drilling attachment. Overall length 26". 3 Female threaded spindle sizes.

1/4-28 ..... P/N 12-06500 ..... $108.95
10-32 ..... P/N 12-06600 ..... $185.90
W/Key Chuck (5/32"cap.) ..... P/N 12-06800 ..... $136.95

CONE JAW CHUCK

Heavy duty yet mini size fits any angle drill or attachment with 1/4" x 28 threads. It's just what you need for close quarter drilling. Features: •Capacity from 1/16" to 1/4" 3/4" length, 0.13 lbs •Wrench included.

P/N 12-00245 ..... $18.75

ANGLE DRILL COLLET & CHUCK KIT

This 10-piece kit gives you 3 different methods of drilling in tight spots. Each shank is 1/4" x 28 which will thread into most drill spindles that angle attachments and angle drills are supplied with. 0.25 lb. KIT INCLUDES: • (4) #200 collets & adapters - drill sizes 11, 21, 30, & 40 • (4) threaded drill bits (1-1/4" length) - drill sizes: 10,21,30,40 • (1) Cone jaw chuck

Model TP258 ..... P/N 12-00368 ..... $32.85

HAND THREAD TAPS

There are three basic types of straight thread taps:

PLUG TAPS – used for ordinary threading and have a 3 to 5-thread chamfer, or relief, at the point.

TAPER TAPS – have 8 to 10 threads chamfered for easy starting and are used for tough threading jobs.

BOTTOMING TAPS – with their short chamfer (1 to 1-1/2 threads),are used where the thread must go to the bottom of the hole.

Specify Plug, Taper or Bottoming Tap.

PLUG TAPS				
Die Size	Left-Hand		Right-Hand	
6-32	12-07601	$4.85	12-07701	$2.75
8-32	12-07801	$5.25	12-07901	$2.90
10-32	12-08001	$5.65	12-08101	$2.85
1/4-28	12-08201	$6.50	12-08301	$2.85
5/16-24	12-08401	$6.50	12-08501	$3.60
3/8-24	12-08601	$6.50	12-08701	$3.90

TAPER TAPS				
Die Size	Left-Hand		Right-Hand	
6-32	12-07602	Call for price and availability special order	12-07702	$2.60
8-32	12-07802		12-07902	$2.70
10-32	--		12-08102	$2.85
1/4-28	12-08202		12-08302	$2.85
5/16-24	12-08402		12-08502	$3.60
3/8-24	--		12-08702	$3.95

BOTTOMING TAPS (HIGH-SPEED STEEL)				
Die Size	Left-Hand		Right-Hand	
6-32	--	Call for price and availability special order	12-07703	$2.60
8-32	--		12-07903	$2.95
10-32	12-08003		12-08103	$2.95
1/4-28	--		12-08303	$2.85
5/16-24	--		12-08503	$3.75
3/8-24	--		12-08703	$3.90

DRILLING & TAPPING SETS

13-Piece drilling and tapping set made from special high speed steel. Contains 6 screw machine length drill bits (Nos. 43, 35, 29, 25, 21 and 7), 16 NC taps (4-40, 6-32, 8-32, 10-24, 10-32 and 1/4-20) and one tap wrench. Choice of 135° split point or spiral point drill bits. Set with Split-Point Drill Bits. P/N 41095 ..... $49.75

ADJUSTABLE ROUND SPLIT DIES

Die Size	Left-Hand		Right-Hand	
6-32	12-07001	$11.85	12-07002	$7.95
8-32	12-07101	$11.85	12-07102	$7.95
10-32	12-07201	$13.50	12-07202	$7.95
1/4-28	12-07301	$12.85	12-07302	$7.95
5/16-24	12-07401	$13.75	12-07402	$7.95
3/8-24	12-07501	$13.75	12-07502	$8.75

ROUND "KNOCK-OUT" PUNCHES & DIES

Save hours of tedious drilling, sawing, filing and hand-fitting. Produce clean, true holes for sockets, controls, instruments. Cut clean, burr-free holes with these easy-to-use tools. Can be operated by ordinary wrench. One punch required for each hole size.

Punch Size	Model 730 P/N	Price	Model 730 P/N	Punch Size	Price
1/2"	12-20905	$56.95	12-20945	1-3/8"	$79.95
5/8"	12-20910	$59.65	12-20950	1-1/2"	$109.75
3/4"	12-20915	$59.75	12-20955	1-5/8"	$84.50
7/8"	12-20920	$39.65	12-20925	1"	$63.75
2"	12-20970	$137.75	12-20975	2-1/4" w/ 304AVBB	$191.75
1-1/8"	12-20930	$67.75	3-1/8"	12-20980	$414.00
1-7/32"	12-20935	$79.75			
1-1/4"	12-20940	$74.85			

Additional Sizes Available.Drive punches with a ball bearing drive for faster, easier hand operation are available for the 2-1/4" & 3-1/8" knock-out punches.

Drive for 2-1/4" Punch ..... P/N #304AVBB $39.85
Drive for 3-1/8" Punch ..... P/N #1433AVBB $85.75

TAP EXTRACTOR SET NO.1 6PC

Remove broken taps and save the threads! Walton Tap Extractors let you remove broken taps without drilling, lasers, damaged threads, scrapped parts or repair inserts. The hardened steel fingers of Walton Tap Extractors fit in the flutes of a broken tap to back it out simply and safely. This effective method has been used since 1908. They are available in every tap size, both inch and metric, as handy sets or individual pieces. The Tap Extractors will fit both NC and NF taps. Sizes: 3/16", 1/4",5/16",3/8",7/16",1/2"

P/N 12-02352 ..... $78.75

TO

DRILL BIT SETS - CARBIDE DRILLS & BURS

DRILL BIT SET – SIZES 1-60

This jobber length drill bit set includes high speed steel (HSS) drill bits in sizes 1-60. The set comes complete with a steel storage box. Ideal as a pre-drill for tapping of holes and for many other aircraft building applications.

P/N 12-00227 ..... **$58.85**

29-PC BRITE FLUTE DRILL SET

This 118° point, high speed steel (HSS) drill set performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics. Set includes 29 pcs (1/16 to1/2" in 64ths) in metal index.

P/N 12-00537 ..... **$94.75**

115-PC HSS JOBBER LENGTH DRILL SET

This 118° point, high speed steel (HSS) drill set performs well in a wide variety of drilling applications. It is recommended for non-ferrous metals, wood, and plastics. Set includes 115 pcs (1/16 to1/2" by 64ths and #1-60 and A-Z in metal index).

P/N 12-00536 ..... **$189.00**

STRAIGHT FLUTE CARBIDE DRILLS

For use on hardened, treated, and abrasive materials, stainless steel, cryogenic alloys.

P/N	Cutting Dia.	Decimal Equiv.	Flute Length	Overall Length	Price
12-00538	13/64	.2031	1-3/16	2-1/4	**$18.75**
12-00539	7/32	.2188	1-1/4	2-3/8	**$18.75**
12-00540	1/4	.2500	1-3/8	2-1/2	**$22.70**
12-00541	9/32	.2812	1-1/2	2-11/16	**$26.90**
12-00542	5/16	.3125	1-5/8	2-13/16	**$32.90**
12-00543	3/8	.3750	1-13/16	3-1/8	**$45.25**
12-00544	1/2	.5000	2-1/4	3-3/4	**$72.95**
12-00545	1/8	.1250	7/8	1-7/8	**$11.80**
12-00546	9/64	.1406	15/16	1-15/16	**$12.75**
12-00547	5/32	.1562	1	2-1/16	**$13.95**
12-00551	3/16	.1875	1-1/8	2-3/16	**$16.95**

CARBIDE TWIST DRILLS

For use on non-ferrous alloys, cast iron, plastics, aluminum, and highly abrasive materials

P/N	Cutting Dia.	Decimal Equiv.	Flute Length	Overall Length	Pice
12-00579	1/16	.0625	3/4	1-1/2	**$8.95**
12-00580	5/64	.0781	7/8	1-3/4	**$8.75**
12-00581	3/32	.0938	1	2	**$7.85**
12-00582	7/64	.1094	1-1/4	2-1/4	**$9.25**
12-00583	1/8	.1250	1-1/4	2-1/4	**$9.95**
12-00584	9/64	.1406	1-3/8	2-1/2	**$10.75**
12-00585	5/32	.1562	1-3/8	2-1/2	**$12.75**
12-00586	11/64	.1719	1-5/8	2-3/4	**$14.50**
12-00547	3/16	.1875	1-5/8	2-3/4	**$13.95**
12-00548	13/64	.2031	1-3/4	3	**$17.95**
12-00549	7/32	.2188	1-3/4	3	**$18.25**
12-00552	15/64	.2344	2	3-1/4	**$21.50**
12-00553	1/4	.2500	2	3-1/4	**$22.00**
12-00554	17/64	.2656	2-1/8	3-1/2	**$26.50**
12-00557	9/32	.2812	2-1/8	3-1/2	**$27.50**
12-00558	5/16	.3125	2-3/8	3-3/4	**$33.60**
12-00561	11/32	.3438	2-1/2	4	**$37.70**
12-00563	3/8	.3750	2-3/4	4-1/4	**$47.50**
12-00564	7/16	.4375	2-7/8	4-1/2	**$62.75**
12-00567	1/2	.5000	3	4-3/4	**$75.75**

CARBIDE ROTARY - RADIUS END

Rotary files have a 1/4" shank and a double-cut (self-cleaning) burrs for quicker cutting speed and less chip build-up. Style: Cylindrical Radius End (SC-5). Diameter of cut: 1/2". Length of cut: 1". P/N 12-02917 ..... **$12.95**

CARBIDE ROTARY FILE - BALL END

Rotary files has a 1/4" shank and a double-cut (self-cleaning) burrs for quicker cutting speed and less chip build-up. Style: Round ball (SD-1). Diameter of cut: 1/4". Length of cut: 7/32"

P/N 12-02918 ..... **$7.95**

SPIRAL FLUTE CHUCKING REAMER

High speed steel straight shank spiral flute chucking reamer. Diameter tolerance thru 1/2 diameter + .0002.0000. Decimal Equivalent: 0.0980. Shank Type: Straight Shank. Flute Type: Spiral Flute. Size Type: Wire Gage Size. Flute Length: 7/8. Overall Length: 3-1/2. Material: High Speed Steel. Size: 40. Type: Straight Shank / Spiral Flute. Number of Flutes: 4 Flute. Brand Name: Quality Import.

Size 30 ..... P/N 12-02930 ..... **$8.85**
High Speed, Size 30 ..... P/N 12-02931 ..... **$6.65**

ALUMINUM CUT

Designed for use on aluminum, non-ferrous metals, soft steel, reinforced plastics, and other soft materials.

CYLINDRICAL BALL NOSE CARBIDE BURS

Aluminum Cut. 1/4" shank.

Part No.	Dia.	Flute Length	Price
12-00588	1/4	5/8	**$13.50**
12-00589	3/8	3/4	**$17.75**
12-00590	1/2	1	**$27.50**

CYLINDRICAL CARBIDE BURS

Aluminum Cut. 1/4" shank.

Part No.	Dia.	Flute Length	Price
12-00591	1/4	5/8	**$12.60**
12-00592	3/8	3/4	**$16.75**
12-00593	1/2	1	**$26.50**

ROUND NOSE TREE CARBIDE BURS

Aluminum Cut. 1/4" shank.

Part No.	Dia.	Flute Length	Price
12-00594	1/4	5/8	**$14.75**
12-00595	3/8	3/4	**$17.75**
12-00596	1/2	1	**$25.60**

MEDIUM TOUGH CUT

Engineered specifically for tough applications. Tough cut insures faster, splinter-free cutting in weld & alloy castings with increased tool life.

CYLINDRICAL BALL NOSE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

Part No.	Dia.	Flute Length	Price
12-00597	3/8	3/4	**$21.50**
12-00598	1/2	1	**$26.95**

ROUND NOSE TREE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

Part No.	Dia.	Flute Length	Price
12-00599	3/8	3/4	**$20.50**
12-00601	1/2	1	**$25.95**

14° INCLUDED ANGLE CARBIDE BURS

Medium Tough Cut. 1/4" shank. 6" Long.

Part No.	Dia.	Flute Length	Price
12-00602	3/8	1-1/16	**$24.50**
12-00603	1/2	1-1/8	**$28.50**

CARBIDE ROTARY FILE - 8 PIECE SETS

8 Piece Carbide Rotary File Set. 1/4" or 1/8" shaft available.

1/8" Set ..... P/N 12-02916 ..... **$26.95**
1/4" Set ..... P/N 12-02915 ..... **$58.95**

DRILL DOCTOR TRADESMAN BIT SHARPENER

The DD500X Pro Kit combines the Drill Doctor Tradesman sharpener with heavy duty carrying case. Sharpen bits either 118°. or the high performance 135° setting and it can turn standard drill bits into self-centering, split point bits. Sharpens bits from 3/32" to 1/2" diameter in about 60 seconds and includes the patented E-Z align system and diamond grinding wheel for sharp precise results. Includes: Sharpener, 1/2" chuck, 110V power cord, carrying case, free video and easy to follow instructions.

P/N 12-00673 ..... **$99.95**

TO

ABRASIVE TOOLS – POLISHERS

HAND PADS

Faster, cleaner, and more durable than wire brushes, scrapers and sandpaper. Non-woven nylon pads are pre-cut. They provide conformable, consistent finishes. General Purpose and Ultra Fine Pads may be used with lubricants and solvents. General Purpose - Clean up dirty parts in solvent tank • Light corrosion removal on steel and aluminum parts. Commercial - An aggressive hand pad for waterbased products only. •Not to be used with solvents. •Heavy duty rust removal and general cleanup Ultra Fine - For scuffing in new rod and main bearings. • Light corrosion removal on steel and aluminum parts.

Description	Size	Grain	Color	Qty.	Part No.	Price
General Purpose	6" x 9"	A/O	Maroon	1 each	12-00861-1	$0.99
Ultra Fine	6" x 9"	S/C	Gray	1 each	12-00862	$0.98
Heavy Duty	6" x 9"	A/O	Tan	40 pack	12-00864	$87.75
Hand Pad Holder	-	-	Orange	1 Hand Pad Holder, 4 Sanding Pads	12-00865	$15.90

BENCH GRINDER DISCS

Quickly remove carbon from pistons and valve stems. Great for light deburring head bolts and studs. One disc is flexible when run alone. Stack as many discs on at a time for the desired finish and removal rate. Safer than a wire wheel, with a much better finish. The very fine grade Bench Grinder Discs are packaged 10 to a pack, and the medium grade Bench Grinder Discs are packaged 5 to a pack.

Size	Grain	Grade	Max RPM	Part No.	Price
8" x 1/2"	A/O	Very Fine	3,000	12-00849	$44.80

7"CUTTING WHEEL 1/2" X BRE 1/16"

Oxide abrasive wheel - fine abrasive for burr-free cutting of thin wall tubing and applications which require a fine finish.

•Wheel Size: 7" x 1/16" x 1/2" • Max RPM: 8,700 • Weight: 6lbs • Standard Grades: A60TBE 3C14

P/N 09-02564.....$4.85

METAL POLISHING KIT

Not Actual Size.

Save time and money with this generous assortment of our most popular types and grits of Straight Cartridge Rolls, in Coarse, Medium and Fine grades. Keep these Cartridge Rolls in your shop for a variety of hard-to-reach applications. Essential tools for engine porting, including intake manifold, heads and exhaust manifold. Kit includes 1/4", 3/8" and 1/2" cartridge rolls, in 40 and 80 grit, and mandrels.....Metal Polishing Kit (3" Dia.)

P/N 12-00846 .....$54.85

METAL ARMOR ORBITAL POLISHER

This Buffer/Polisher with side handle. 5" counterweight attached to 7424XP (works with included 6" pad). Also includes wrench and operating manual.

The Buffer and Polisher is a beautifully working tool guaranteed to bring out the very best finish on the most lackluster surfaces.

The Buffer and Polisher will throw life onto the dead and dull by operating at an electronic variable speed between 2,500 -- 6,800 OPM (Oscillations Per Minute). But what really sets the 7424XP apart from other similar polishers on the market is not just the price, but more the performance and smoothness. You will be hard pressed to find as good a polisher at such an outstanding price anywhere else. So make the right decision and go with the 7424XP buffer and polisher for the very best in polishing potential.

Description	Part No.	Price
Metal Armor Porter Cable 7424xl Random Orbital Buffer	13-11686	$155.00
Accessories	**Part No.**	**Price**
Metal Armor 7" Hook And Loop Flexible Backing Plate	13-11687	$15.95
Metal Armor 1-8" White Foam Pad Hook & Loop Design	13-11688	$17.95
Metal Armor 1-8" Blue Foam Pad Hook & Loop Design	13-11690	$17.95

BLASTER KIT (F-50)

Use dry abrasives only. Hose length - 7ft. Tank capacity - 50lbs.. Free standing open top tank. Maximum 125 psi. 7 CFM@80 psi minimum. Lightweight and portable. Easy setup. Steel nozzles - 13/64", 1/4", 5/16"

P/N 12-02548.....$141.95

BLASTER KIT (F-90)

Use dry abrasives only. Hose length - 10 ft.. Tank capacity - 90 lbs.. Strong tubular steel cart. Wheels - 6". Maximum 125 psi. 7 CFM@80 psi minimum. Lightweight and portable. Easy setup. Steel nozzles -13/64", 1/4", 5/16".

P/N 12-02549.....$172.95

TO

VISE GRIPS - UNIBITS

Locking Pliers, two straight jaws

Locking Pliers, two curved jaws

Locking Nose Jaw with wire cutter

"C" Clamps

12 LC Large Jaw Locking Pliers

Vise-Grip Style	Size	Part No.	Price
Locking Pliers with Two Straight Jaws	7"	12-00196	$12.65
Locking Pliers with Two Curved Jaws and Wire Cutter	4"	4WR	$12.75
	5"	12-00194	$13.50
	7"	12-00189	$12.75
Long Nose Jaws with Wire Cutter	4"	12-00190	$12.75
	6"	12-00192	$13.70
	9"	12-00198	$17.50
Locking "C" Clamps	6"	12-00188	$13.75
	11"	12-00195	$20.75
Large Jaw Locking Pliers, Opens to 3-1/8"	12"	12-00197	$19.50

TIGHT-FIT DRILL KIT

Space, every inch of it, is at a premium in aircraft design as shape and weight is critical to function. Also, airplanes are riveted together which requires thousands of holes to be drilled in difficult locations without scratching or marring the work surface. So, engineers needed to design a versatile "chuck-less" drill attachment that could reach into very confined areas. The answer was found in putting threads on the shanks of drill bits. The benefits are significant. Threaded drill bits eliminate the need for a chucking mechanism. Freed of this restriction, it is possible to do a wide variety of jobs in places with extreme space limitations (less than 1" x 2"). Chuck slippage is all but eliminated while the precision mating angle between threaded drill and drive spindle insures concentricity. Drill bit change times are reduced, an exact working drill bit length is insured and the chance of marring or scratching the work surface is greatly reduced. The Model 00105 Kit includes: a versatile close-quarter Right Angle Drill Attachment capable of drilling up to 1/4" diameter holes and compatible with all standard power drills, a 6" Threaded Extension for those deep hard-to-reach spots, a Chucking Spud which allows direct use of threaded TightFit® drill bits and extensions with your standard drill motor, five aircraft quality threaded TightFit® drill bits (Short Drill Bit Set, 00133), a Tight Fit® 3-Way Wrench, and is packaged in a red, heavy-duty, blow-molded storage case. Features: Attaches to any power drill; Recommended operating speed not to exceed 2500 rpm. • Light weight; Right angle drill weighs 1/3 of a pound and rotates 360 degrees for tight-spot access. • Threaded components allow for fast, easy tool changes; Drill over, under or around obstructions. • Design allows "deep reach" in confined areas; Provides utility of extension drill bit set.

P/N 12-01334 ..... $44.60

ACCESSORIES

Stub Drill Kit - 5 Drills 9/16" long in 3/32", 1/8",5/32",3/16",1/4" Dia.
P/N 12-20310 ..... $16.70

Short Drill Kit - 5 Drills 1-1/8" long, in same diameters as above
P/N 12-20320 ..... $16.70

Long Drill Kit - 5 Drills 2" long in same diameters as above.
P/N 12-20330 ..... $16.70

Screwdriver Set - #1 & #2 Phillips bits, small & large slotted bits.
P/N 12-20340 ..... $2.95

Extension Set - 4 Extensions in 1/2", 3" 6" & 9" (can be combined for a work length of 18") P/N 12-20350 ..... $16.70

Collet Adapter - Designed to hold all 1/4" shank accessories (countersinks, rotary files, sanding drums). P/N 12-20360 ..... $6.70

DELUXE TIGHT FIT TOOL KIT
PROFESSIONAL MODEL

Includes right angle drilling attachment, 6" extension rod, chucking spud, threaded countersink, (6) stub drill bits (9/16" long) & (6) short drill bits (1-1/2" long) in the following diameters: 1/16", 3/32", 1/8", 5/32", 3/16", 1/4". (1) threaded apex socket adapter to fit the angle head & extension rod. (4) screwdriver bits Number 1 & 2 slotted and Number 1 & 2 Phillips. (1) 1/4" threaded collet adapter to fit the angle head, extension rod or spud adapter. (1) 5/16" combination wrench. All above items are packed in a hard blow molded "everything in its place" aircraft mechanic style carrying case. The case even floats when fully packed. There is also a special internal tray for other drills or accessories.

P/N 12-11215 ..... $57.85

CARBIDE TIPPED HOLE CUTTERS

Multiple tungsten carbide tips for long life and smooth cutting. Cut fast, accurate, high quality holes in stainless steel, copper, aluminum, steel. Flange stop prevents over drilling. Replaceable cobalt steel pilot drill, with split point tip design, to improve performance and resist walking; eliminates need for "center punch." Size :7/8in. 22.2mm Min. Chuck Size:1/4in. 6.4mm PG 13 Coduit Size :1/2" Maximum Cutting Depth: 8 Ga. (4 mm)

P/N 12-03715 ..... $35.85

BLAIR HOLE CUTTER

The Blair hole cutter fits any 1/4" drill and set includes 7 blades (1/4" to 5/8" arbor), pilot and holder. The blades are threaded onto arbor and precise control of the depth of cuts is provided by adjusting screws. Over 3000 holes in sheet metal can be cut by each blade.

Model TP147 ..... P/N 12-00243 ..... $79.75

FLANGING-360 TOOL

This is a companion tool to the ARC-360 lightning hole cutter. The Flanger-360 will form a 30 degree flange on 2024-T3 aircraft aluminum up to .032" thick and in diameters from 2 to 6 inches. Its polished hardened steel rollers gently and effortlessly form the flange as the operator rotates the tool around the lightning hole. Unlike other flanging tools that rely on the skill and eye of the operator, the Flanger-360 stays in constant position with the lightning hole via guide rollers as it progressively forms the flange.

P/N 12-02030 ..... $199.75

UNIBIT STEP DRILL

The UNIBIT Step Drill uses a unique single flute design to drill perfectly round holes in thin materials quickly and with less effort than any other bit on the market today. UNIBIT incorporates cutting steps of progressively larger diameter, making it possible to drill up to 13 different hole sizes with a single bit. Once the desired hole diameter is obtained, the hole is automatically deburred by the cutting edge of the next larger step. UNIBIT #1 drills 13 holes in 1/32" increments from 1/8" through 1/2" and has a shank size of 1/4". UNIBIT #2 drills 6 sizes of holes from 3/16" through 1/2" and has a 3/8" step thickness with a 1/4" shank. UNIBIT #3 drills 9 sizes of holes from 1/4" to 3/4" and has a step thickness of 1/8" with a 3/8" shank. UNIBIT #5 drills holes 1/4" - 1-3/8". 10 steps.

UNIBIT #1 Step Drill ..... P/N 12-03700 ..... $22.85
UNIBIT #2 Step Drill ..... P/N 12-03800 ..... $22.85
UNIBIT #3 Step Drill ..... P/N 12-03900 ..... $43.75
UNIBIT #4 Step Drill ..... P/N 12-03164 ..... $48.50
UNIBIT #5 Step Drill ..... P/N 12-03750 ..... $94.65

LOCKING C-CLAMP WITH SWIVEL 6 INCH

Locking C-Clamp W/Swivel Pad, 6 In, Specifications: Size: 6", Capacity (In.): 2, Throat Depth (In.): 1 1/8, Clamping Force (Lb.): 500, Locking Mechanism : Release Lever, Screw Mechanism: Adjusts Clamping Pressure, Pliers Length (In.): 7 11/16, Finish: Nickel Plated, Material: Hardened Carbon Steel, Standards: ASME B107.36-2002 P/N 12-02422 ..... $22.95

TO

INDUSTRIAL FABRIC SHEARS

Wiss No. 20W heavy-duty shears, ideal for cutting fiberglass cloth and all fabrics. Hot drop-forged steel.

Right Hand Shears ..... P/N 01-00397 ..... $28.60
Left Hand Shears ..... P/N 01-00398 ..... $27.95

FISKARS 9" PINKING SHEARS

These orange handled pinking shears keep your projects from unraveling at the seams. Ergonomic handles give comfort and control, extended lower blade to help lift fabric while cutting. Adds functional pinking edge to prevent fabric fraying. Tested to ensure clean cutting even through multiple layers of cloth to the tip. P/N 12-02942 ..... $26.50

OFFSET KEVLAR CUTTING SHEARS

Although Kevlar has many advantages over conventional fiberglass weaves, it is very difficult to cut. Special scissors have been developed to facilitate cutting. These scissors have a wear -resistant coating which is metallurgically bonded to the steel substrate. The coating will not chip or peel off and can be sharpened.

Model WR-10E-4 Shears ..... P/N 01-00341 ..... $78.50

ECONOMY KEVLAR SCISSORS -

GINGHER® Scissors cut Kevlar exceptionally well. Lightweight, extremely sharp and comfortable, these 2 1/2 oz. scissors are perfect for use during the lay-up. Soak in acetone for easy clean-up. We recommend saving one pair for only cutting Kelvar®, and keep ing a second pair for general use. P/N 01-00342 ..... $44.65

QUICK GRIP BAR CLAMPS

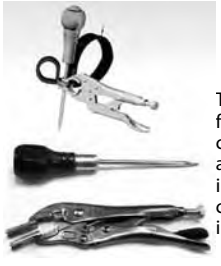
From the makers of Vise-Grip tools comes the amazing new Quick-Grip bar clamp. The unique pistol-grip handle lets woodworkers hold the clamp and adjust jaw pressure with just one hand. One finger unlocks the Quick-release trigger. Features include positive locking action to hold work tight, strong, lightweight high-tech construction, instant adjustable clamping pressure, large, pliable pads that won't mar work, and a variety of jaw openings. It will "single-handedly" change the way you think about bar clamps!

Part No.	Jaw Opening Size (mm)	Price
12-03910	6"/150	$21.50
12-03920	2"/305	$29.75
12-03930	18"/455	$35.75

Part No.	Jaw Opening Size (mm)	Price
12-03940	24"/610	$35.95
12-03950	36"/915	$33.50

ADEL HAND "NIBBLING" TOOL

Cuts sheet metal like punch and die. Cuts holes to any size and shape. Start with 7/16" hole then "nibble" to size required. Capacity 18 Ga. steel. Wt. 8 oz. ..... P/N 12-10400 ..... $28.75
Replacement Punch ..... P/N 12-10500 ..... $16.50



CUSHIONED CABLE CLAMP (ADEL CLAMP) INSTALLATION PLIERS

These special pliers allow for greatly simplified installation of single or multiple Adel type cushioned clamps. The pliers securely hold the aligned clamps in position, allowing for easy installation of securing hardware. Each kit includes special plier, alignment awl, and simple instructions.

P/N 12-02017 ..... $34.75

KETT PORTABLE POWER SHEARS

ELECTRIC MODEL K-200 – Extra-powerful 115V, 50/60 cycle AC/DC motor. Heavy-duty bearings & die-cast aluminum cutting head. Tool is UL and CSA approved. 2300rpm. Maximum cutting speed, 180 inches/minute. Wt. 5 lbs. Over-all length, 11.75". Ampere rating, 2.2 amps.

P/N 12-01137 ..... $233.95

ELECTRIC MODEL K-442 – Kett's all-purpose 16 gauge power sheers cut up to 16 gauge mild steel, cleanly and easily, without burring or buckling the material. These lightweight shears, designed for durability, feature a variable speed motor and fill the gap between Kett's light duty and heavy duty power shears.

P/N 12-01153 ..... $257.95

PNEUMATIC MODEL P-500 – Equipped with air-metering trigger for variable-speed cutting, so that initially the blade can be operated slowly to prevent chattering at start of cut. 2600rpm. Maximum cutting speed, 180" per min. Wt. 3 lbs. Over-all length, 9". P/N 12-01158 ..... $199.85

KETT KB-301 CORDLESS 18GA SHEAR

High torque 2300 SPM motor lets you easily cut 18 gauge mild steel or up to 20 gauge stainless at over 150"/minute. The swivel head gives you precise control as you make straight or contour cuts. The double-cut shearing action leaves a clean burr free edge and won't warp or bend the piece. Extended run time NiCad battery recharges quickly and there's room for a spare, and the charger unit, in the handy carrying case. Length: 12-3/4", Weight: 7 lbs. The kit includes the KB-301 power shear, KB-302 14.4 volt NiCad High Performance battery. KB-303 battery charger and KB-304 carrying case.

Model No.	Description	Part No.	Price
KB-301-K	Cordless Shear Kit #300	12-00117	$314.95
KB-302	14.4 volt NiCad Battery	12-00118	$61.25
KB-303	One Hour Battery Charger	12-00119	$62.00
KB-304	Carrying Case	12-00121	$26.30

KETT KD440 14GA POWER SHEARS

Cuts 14 gauge mild steel and most grades of stainless to 16 gauge. Cuts over 150 inches/minute, leaving a clean, flat sheet, ready to fabricate. Distortions are absorbed in an easily disposed of waste curl, leaving the sheet cool and free of burn, chips, and burrs. The cutting blades are finest high speed steel. (Also cuts sheet metal, Stainless and Plastics) P/N 12-00676 ..... $234.95

KETT KD-446R PROFILE SHEARS

Cuts profile and flat materials up to 18 gauge, spiral duct, wire mesh and many other materials. Can cut tight curves at a radius of three inches. The blades are made of high quality steel, heat treated and precision ground. The motor is variable speed up to 2500 RPM and cuts up to 28 feet per minute. Features: • 5.0 amp pistol grip • Replaceable A-2 tool steel shear blades.• These snips cuts C.R. mild steel 18 gauge and lighter, wire mesh to 18 gauge, spiral pipe, metal studs and corrugated metal

Right Hand ..... P/N 12-02507 ..... $259.85
Left Hand ..... P/N 12-02509 ..... $259.85

CORDLESS ELECTRIC KEVLAR SCISSOR KIT

The USATCO cordless electric kevlar scissor kit cuts aramid fibers, kevlar and other tough materials! Lightweight and maneuverable with superior ergonomic design. Requires much less effort than cutting manually. Short rapid strokes for intricate work. This can be operated with cord and adapter for unlimited cutting time. P/N 12-02630 ..... $149.95

TO

COMPARTMENT BOXES – TOOLS

16 COMPARTMENT STORAGE BOX

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
•Compartment: 16 •Weight: 8 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 12" • Height: 3" • Width: 18" P/N 12-02623 ..... $24.85

21 COMPARTMENT STORAGE BOX

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
• Compartment: 21 • Weight: 8 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 12" • Height: 3" • Width: 18" P/N 12-02622 ..... $24.85

32 COMPARTMENT STORAGE BOX

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
• Compartment: 32 •Weight: 8 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 12" • Height: 3" • Width: 18" P/N 12-02621 ..... $24.85

EZ GUIDE DRAWER RACKS

Easy glide large and small racks are designed to accommodate large and small compartment boxes and create convienent, compact storage systems. Boxes can be removed and tranported to the job site. Rugged plastic inserts and scoop bottoms fit neatly into steel outer shell boxes. Optional bases raise racks off the floor.
• Weight: 20 lbs • Material: Prime cold rolled steel • Interlocking and Welded Construction • Colors: Durable gray powder coat finish • Depth: 15" • Height: 8-1/8" • Width: 20" P/N 12-02624 ..... $81.75

EASY GLIDE RACK BASE

Rack base (20 5/8" W X 15 5/8" H X 12 5/8" D; weight 13 lbs.) is available for use with PN# 12-02626.
• Weight: 13 lbs. • Material: Prime cold rolled steel • Colors: Durable gray powder coat finish • Depth: 12-1/8" • Height: 15-1/8" • Width: 20-3/8"
P/N 12-02627 ..... $42.75

PIG® FORM-A-FUNNEL® DRAINING TOOLS

The innovative Form-A-Funnel has literally hundreds of uses. For aircraft owners, it makes aircraft oil servicing a breeze. The larger model (18611) was designed to be formed into a channel that can be easily inserted into your engine compartment, weaving its way past engine accessories and into a snug position under your oil filter. After loosening the filter, the oil drains to a position outside your cowl, preventing the messes that usually occur, and keeping oil off the inside of your cowling (and off the hangar floor).
The flexible material holds its shape -- you can bend it around the surrounding structures in your engine compartment and it will support itself. The Form-A-Funnel's flexible lip seals against the engine case or drain port, ensuring that not a drop is spilled. No more improvised cardboard channels, and no more bulky and hard-to-clean plastic funnels!
The smaller model (18609) is perfect for small engine repair or servicing, automotive work, changing the oil in your air compressor, draining and pouring fluids or granular material, creating all kinds of funnels, and making improvised pans and fluid channels.
Form-A-Funnel is constructed of a thin layer of flexible metal covered with a tough outer layer of Nitrile rubber. It's reusable and will last for years. It cleans up with just a wipe, and you can store it rolled up or flat. No other funnel can go in your pocket or in the drawer of your toolbox! It resists all common aviation and household chemicals, including oil, fuel, hydraulic fluid, transmission fluid, antifreeze, battery acid and solvents. Form-A-Funnel is one of the most clever tools you'll ever own!
14.5" X 6.5" ..... P/N 12-03147 ..... $19.95
29" X 5" ..... P/N 12-03148 ..... $29.95

CLAMPTITE TOOLS

With stainless steel components and an aluminum body, this tool was designed for the outdoors man, fisherman and farmer who would have it around a corrosive environment. The stainless steel components are stronger and you can just toss it in the tool box that is in the truck, boat or tractor. The tool is great for emergencies and tough wire jobs. This is the original marine grade tool.
4 3/4" Long - 7" Fully Extended
P/N 12-02633 ..... $39.95

Plated steel components with aluminum body. This tool was designed with the mechanic in mind who would have it around grease, oil and a controlled environment (non corrosive). Great for the CV boots, fuel line, thermostat housing, radiator hose and air hose type repairs.
4 3/4" Long - 7" Fully Extended
P/N 12-02634 ..... $29.95

This tool is machined stainless steel with a one piece body and nose and bronze nut. The tool was designed with the detailed craftsman who need a long lasting tool able to hold up to extremely tough wire while clamping, binding and pulling the wire until the job is complete.
4 3/4" Long - 7" Fully Extended
P/N 12-02632 ..... $69.95

TOGGLE CLAMPS

Easier to use than regular C-clamps. Quick-release style. Removable rubber pads on each screw. Gap: 1"
1-1/2" Reach ..... P/N 12-02863 ..... $14.65
1-1/8" Reach ..... P/N 12-02864 ..... $18.50
1-3/4" Reach ..... P/N 12-02865 ..... $22.50

SCREW & BOLT SHEAR

The Screw & Bolt Shear is a bolt cutting device manufactured from very high quality tool steel which is hardened, tempered & machined to very close precision tolerances. The action of this tool is similar in nature to a "guillotine" design and is quite effective in cutting screws/bolts to specific lengths. The cutting body of the SBS-1 will accommodate screws or bolts in sizes of 4-40, 6-32, 8-32, 10-32, 10-24, 1/4-20 & 1/4-28. P/N 12-14250 ..... $98.90

QUICK ANGLE - MEASURING ANGLES & PITCHES

A multi-functional revolutionary new tool for measuring angles and pitches. It's rare to find one tool that will accomplish so much (miter cuts for one and duplications for another). Use this one-in-all tool to compliment and enhance your tool box. P/N 12-02458 ..... $35.80

TO

AMP PRO CRIMPER II HAND TOOL

The PRO-CRIMPER II Hand Tool provides the versatility of general-purpose service of general-purpose service tools along with the reliability and ease of use of many premium-grade tools For versatility, 75 die sets (available separately) are interchangeable, including those for open-barrel contacts and terminals. Additionally, many of these die sets have multiple cavities for crimping a variety of contact or terminal sizes. For reliability, the tool is constructed of durable high carbon steel with extra-strength pivot pins. And, for user convenience, the PRO-CRIMPER II Hand Tool particularly excels. Ratchet control is provided for complete crimp cycling; this helps eliminate partial crimps. Also, an emergency ratchet release allows the user to open the tool jaws at any time during the crimp cycle.To reduce handle force, the linkage was designed to match the forces required to crimp our largest insulated terminal. The result is dramatically less hand force than comparable tools. Also, the angled had and specially designed handles provided comfortable operation. Locator are mounted on pin-and-socket style tools They help properly locate the contact in the die set, provide a wire stop, and help minimize contact rotation and bending during crimping.

PROCRIMPER II 58433-3 ..... P/N 12-01379 ..... $184.80
O-CRIMP DIE 58435-1 ..... P/N 12-01380 ..... $312.00
HEX CRIMP DIE 58436-1 ..... P/N 12-01381 ..... $147.75
PIN & SOCKET 58495-2 ..... P/N 12-01382 ..... $207.95

KOUL SINGLES STAINLESS BRAIDED HOSE ASSEMBLY TOOLS

Since the invention of stainless braided hose, racers and mechanics have been fighting the problem of installing it into the socket part of the assembly. If your lucky and get a clean cut on the end of that hose, you might get it in. Most of the time a little fuzz appears on the hose end and the battle begins. It is not only time consuming, it can get bloody. This tool is the solution that makes the assembly a snap. Manufactured of a high tech composite, it is virtually indestructible. No need to worry about vise marks or wearing out. Just insert the socket into the tool, twist the hose in, and in less than 10 seconds you have it assembled. You can repeat this several times without recutting the hose end. The tool can pay for itself the first time you don't have to scrap some hose because it got too short trying to clean up the end. You'll be amazed at the amount of time you'll save.

SMALL KIT - The Small kit contains the capsules to install -4, -6, -8 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up the some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit in the funnel. The two spacers are used in some -6's and 8's. If the socket seems loose in the tool, use a spacer to tighten it up. In the small kit, only the Russell -4 needs a sleeve. Not for use with Teflon-style hose.

PN 12-01061 ..... $73.95

LARGE KIT - The Large kit contains the capsules to install -10, -12, -16 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit into the funnel. In the 1016 kit, all the -16's except Russell's require the sleeve and a rear spacer. See the instructions in the case for the proper spacer number. Most of the -10's and 12's* will use a spacer. Not for use with Teflon-style hose. * -12 is a stainless washer.

PN 12-01062 ..... $88.85

HOT ROD KIT - The Hot Rod kit contains the capsules to install -6, -8, -10 hose into their respective sockets. To accommodate all the different manufacturer's fittings, spacers and sleeves are required to tighten up some of the sockets within the capsule. For the tool to perform at its best, the socket needs to be a snug fit into the funnel. Spacers are used in some -6's, -8's, and most -10's. If the socket seems loose in the tool, use a spacer to tighten it up. See the instructions in the case for the proper spacer number. Not for use with Teflon-style hose.

PN 12-01898 ..... $110.95

THE PRO COMBO - The Pro Combo is a special offer of BOTH the #468 and #1016 kits listed above. Pros need both kits to handle all the hose sizes in a race car. Ordering this combination will save $15.00. Not for use with Teflon-style hose.

PN 12-01897 ..... $147.50

KOUL SINGLES

6 Koul Single ..... PN 12-01928 ..... $29.50
8 Koul Single ..... PN 12-01929 ..... $29.50
10 Koul Single ..... PN 12-01930 ..... $29.50

AMP RIGHT ANGLE DUAL CRIMP TOOL

Amp right angle dual crimp tool. Features: • RF Connector, Gender Plug. Dual Crimp, Right angle body, Waterproof, Without Solder Terminal, without Military Grade, Teflon material, Without Mechanical Attachment Panel Mount. Connector Impedance (Ohm) is 50. Coaxial Cable Termination Type is Crimp. Body Plating is Silver. Center Contact Plating is Gold. Coaxial Cable Type (RG/U or Mfg.) is 214, 9, 9A. Government/Industry Qualification - No. RoHS/ELV Compliance is Not ELV/RoHS compliant. Lead Free Solder Processes is not relevant for lead free process.

P/N 11-10006 ..... $148.75

EXPRESS PORTABLE AIRCRAFT VACUUM

The Express Toner/ESD Vacuum provides .3 micron filtration which captures particles that are less than one one-hundredth the thickness of a human hair. This means these vacuums will do a thorough job of cleaning planes of the smallest particulates like mold spores, chemicals, foreign substances or any other microscopic particles that could be hazardous on a plane. Additionally its light weight (about 6 pounds) makes the Express Vacuum easy to move into and around the interior of an airplane. Plus it is the only product in the market of this nature which is ESD safe, this is of great importance given all the delicate electronic equipment which is found on today's airplanes. Note: Bag is optional and may be purchased separately. Features: 600 Watt Flow Through Motor • 6' ESD safe hose • Crevice tool and brush • 12" Flexneck tool • .3 micron toner cartridge filter • Line filter • 12' power cord • ESD SAFE

Toner/ESD Vacuum 110V ..... P/N 12-01058 ..... $143.95
Toner Toner Filters 2 Pk. ..... P/N 12-01059 ..... $26.50
Vacuum Carring Bag ..... P/N 12-01454 ..... $26.90

PORTA-TEST FUEL INJECTION TEST KIT

Now you can solve Continental fuel injection problems for both naturally aspirated and turbocharged engines right on your customer's airplane. With the patented Porta-Test Testing Unit from Approved Aircraft Accessories, Inc., you can accurately and easily comply with the manufacturer's service bulletins relative to fuel pressures, flow, and turbo components.

Porta-Test is the only approved testing unit available for the calibration of fuel injection systems. As a result, you can quickly perform fuel metering maintenance to improve the service life, performance and dependability of engines equipped with Continental fuel injection systems.

Actual flow meter readings provide exact indication of engine fuel consumption as well as pressure. Indications covering unmetered and metered fuel pressure, turbocharger upper deck and lower deck pressures can be easily checked for correct operation. All troubleshooting can be accomplished with the engine running and without removing components to save valuable man hours and downtime. Complete operator's manual contains necessary specifications and troubleshooting.

The 20 ATM consists essentially of a patented high-accuracy fuel pressure gauge to measure both metered and unmetered fuel pressure; two flowmeters, one with a range to cover idling - low flow - and the other to cover power settings; a dual absolute pressure gauge indicates manifold and turbo discharge operations; and the appropriate valves, hoses, and fittings.

P/N 08-07225 ..... $5,585.00

TO

TORQUE WRENCHES

FULLY RELEASING TORQUE DRIVER

The MD1F35H is an adjustable driver with a range of 5 to 35 lb. in. Body is constructed of steel and anodize aluminum, has a CNC machined knurled grip and 1/4" male drive and comes packaged in a plastic box. The MDP1F35 is is a preset model ideal for repetitive assembly operations. P/N 12-00530 ..... $209.00

DIAL TYPE TORQUE WRENCH

Dial Type Wrenches provide unmatched reliability, accuracy and durability for applications where torque measurement is extrememly critical. Models feature a memory pointer that indicates the highest torque achieved during application of torque. 2% accuracy clockwise and counterclockwise. All wrenches are made in the USA of all steel construction for the highest quality. Both models come with a plastic storage box and a calibration compliance certificate.

3/8" sq.dr. / 300 lb.in. ..... P/N 12-00531 ..... $199.95
3/8" sq.dr. / 600 lb.in.-50 lb. ft..... P/N 12-00532 ..... $199.95

MICROMETER ADJUSTABLE CLICK WRENCH

Engineered, precision bearing surfaces extend the calibrated life of these micrometer torque wrenches to as many as 60,000 cycles or more and ensure the most reliable performance possible. In addition to flawless operation at release, calibration is completely external, unlike traditional mechanism that require disassembly and the replacement of blocks and shims. Both models come with a plastic storage box and a calibration compliance certificate.

3/8" sq.dr. / 40-200 lbs. In..... P/N 12-00533 ..... $197.00
3/8" sq.dr. / 20-100 lbs. In..... P/N 12-00534 ..... $197.00

TWISTED STRIPPER TWISTED SHIELDED PAIR WIRE PREPARATION TOOL

There is FINALLY a tool to quickly strip the shielded twisted pair wires in your avionics installations!

STP Wire Stripping Problem Background:
From the beginning, Mil-Spec Tefzel Shielded Twisted Pair wire has defied every wire stripper available to installers, leaving a razor blade or knife as the best option for removing the outer jacket. This time consuming method is imprecise, and it can easily lead to internal shorts between the center conductors and the shield, especially when solder sleeves are used for shield termination. With the increased use of RS-232, ARINC 429, and other types of data busses in todays aircraft electronics, this type of wire is now a major component of many avionics installations. Stop the Razor's Hidden Damage Ring and slit. That has been the standard way to remove twisted pair jackets since the introduction of this type of wire. This time consuming and innacurate process has obvious disadvantages when compared to the TS-7000: P/N 12-02031 ..... $1,259.00

QUICK-GRAB RATCHET-ACTION WRENCHES

You'll have the advantages of an open-end wrench, plus the convenience of ratchet action. The jaws snap open to slip onto fittings and fasteners; then, they close tightly for ratcheting. Wrenches require a 30 degree handle swing to turn a fastener. All are made of hardened steel with a black finish.

Size	Part No.	Price
5/8 Inch	12-00913	$33.50
3/8 Inch	12-03238	$26.50
1/2 Inch	12-03239	$26.50
9/16 Inch	12-03240	$32.50

ADJUSTABLE TORQUE SCREWDRIVER

Bi-directional Accuracy of +/- 6% Indicated Value from 20% to 100% of capacity meets or exceeds ASME B107.300-2010 and ISO 6789. Incredibly durable; many owners have experienced a service life of 10+ years! Operator cannot overtorque. Clutch releases automatically when desired torque has been achieved. Scale on shaft is marked in dual incrementation (in. lbs. and NM) on Cal 36/4, kgf•cm on CAL 40. Magnifying lens improves view of clearly engraved scale. To operatie, simply dial torque setting and insert bit. Uses standard bits, adapters and sockets. Anti-backlash design enhances repeatability. Comes with FREE certificate of calibration from our ISO/IEC 17025 Accredited Calibration Laboratory. CAL 36/4 can be ordered with certification for English or SI units of measure.

P/N 12-03398 ..... $242.95

MICROMETER TYPE TORQUE WRENCH

The wrench is equipped with a reversible ratchet head or plain (non-ratcheting) head may be used in both right or left hand directions. The drive head accommodates sockets, extensions, crowfoot adapters, and other attachments to fit a multitude of fasteners both in English and Metric.

P/N 15-05531 ..... $147.80

DIAL TORQUE WRENCH

Capacity	Graduation	Sq. Dr.	Length	Weight	Part No.	Price
300 in. lbs.	5 in. lbs.	3/8"	10.3"	1.2 lbs.	12-03399	$277.95
600 in. lbs.	10 in. lbs.	3/8"	12.3"	1.4 lbs.	12-03401	$285.95

MICROMETER ADJUSTABLE TORQUE WRENCHES

Range	Graduation	Sq. Dr.	Part No.	Price
30-150 in.lbs.	2 lbs./in.	3/8"	12-03402	$230.95
40-200 in.lbs.	2 lbs./in.	3/8"	12-03403	$230.95

MICROMETER ADJUSTABLE INTERCHANGEABLE TORQUE WRENCHES

Range	Graduation	Part No.	Price
30-150 in. lbs.	2 in. lbs.	12-03404	$184.00
150-750 in. lbs.	5 in. lbs.	12-03405	$197.00

3/8 INCH SQUARE DRIVE RATCHET INTERCHANGEABLE HEAD

Note: Must be used with part numbers 12-03404 or 12-03405 and 12-03407. See Accessories. This series is designated "SDRT". Ideal for use when a socket is to be used and there is significant rotation of the fastener required to complete the tightening: A socket can be used to engage the fastener. A higher amount of rotation will be needed to attain the desired torque. P/N 12-03406 ..... $87.50

3/8 INCH SQUARE DRIVE INTERCHANGEABLE HEAD

Note: Must be used with part numbers 12-03404 or 12-03405 and 12-03406. See Accessories. This series is designated "SD". Ideal for use when a socket is to be used and there is significant rotation of the fastener required to complete the tightening: Calibrating the wrench on a torque tester, A socket can be used to engage the fastener, A small amount of rotation will be needed to attain the desired torque.

P/N 12-03407 ..... $45.00

TO

LIGHTED SCREWDRIVER - 8-IN-1

Perfect for Computers, Electronics, Industial and Residential Applications, Hobbies and Crafts. Two Super Bright LED Lights Provide 360° Tip Illumination. Transparent Collar Maximizes Illumination. Unique Design Features Two Drivers in One Handle. This is an 8 in 1 tool perfect for just about any need (Bit Sizes: #0, #000, 1/8", 5/64"; T5, T8; T6, T10). Convenient Bit Storage in Handle. Removable mini screwdriver. Cordless (3 "LR41" Batteries Included).

P/N 12-03354 ..... $12.50

LIGHTED TWEEZER

Working inside those dark, confined spaces on the job just got a lot easier! General's Illuminated Tweezers offer a built-in, bright white light-emitting diode (LED) to directly illuminate your working area. Made from heat-treated steel with a corrosion-resistant black finish, these cutting-edge tweezers are built to withstand tough jobs and working environments. we've also included a non-slip cushion grip for added comfort. Available in Serrated Blunt, Serrated Bent and Smooth Pointed Tips.

P/N 12-03349 ..... $8.50

REVERSIBLE RATCHETING TAP WRENCH

No. 0 to 1/4" Reversible Tap Wrench - General's Reversible Tap Wrenches feature a fine-tooth ratcheting mechanism which adjusts on the fly for right- and left-hand use. In addition, the ratchet can be locked to transform the tool into a standard tap wrench. The self-centering, hardened-steel jaws assure the formation of straight threads in your work piece. Although designed mainly for holding taps, the Reversible Tap Wrench also works great with reamers, drill bits, screw extractors and other hand-turned tools.

P/N 12-03352 ..... $29.90

NEEDLE NOSE PLIERS

These heat treated steel needle nose pliers are the perfect tool for reaching into tight spots! The pliers feature a nonslip foam comfort grip and a drop forged construction for added durability. These needle nose pliers are an essential addition to any toolbox in the home, garage or shop. 5-3/4".

P/N 12-03393 ..... $3.65

ACCU-TAP PRECISION SET

Accu-Tap delivers professional results with every use. Align Accu-Tap using the specially designed sight gauge. The high visibility cross hairs ensure that you will not miss your mark. The v-block makes it easy to drill round stock and tubing and also works on any flat surface. With a flip of a switch, 180 pounds of force is activated in the unique magnetic base securing the guide in the exact location that you need.

Simply select the desired drill bushing and insert into Accu-Tap's locking liner. Grab your favorite drill and see the results unfold. Accu-Tap delivers results within .001". P/N 12-01871 ..... $248.95

FEIN MULTIMASTER SPEED START

For beginners, who do not want to sacrifice professionalism
in spite of being price conscious.
Includes: 1 FEIN MULTIMASTER FMM 250, 1 universal E-CUT saw blade (29mm), 5 of each type of sanding sheet, grain 80, 120 and 180, 1 universal E-CUT saw blade (29mm), 1 rigid stopping knife, 1 key and mounting bolts.

Features: FEIN MultiMaster Start - a fully-fledged FEIN MultiMaster, suitable for all applications, featuring the most important accessories for grinding, sawing and scraping. In the lead through oscillation technology: unsurpassed versatility. Optimum handling thanks to ergonomical design and low weight. Chuck with form-fitting mount provides high torque transfer. Powerful 250 Watt motor with electronic speed control. Integrated interface for adaptation of additional system accessories. Extensive range of accessories available

P/N 12-01853 ..... $238.95

FEIN MULTIMASTER START PLUS

The universal system for interior construction and renovation with the basic accessories for the most common applications.

Kit Includes: 1 FEIN Multimaster FMM 250, 1 backing pad, 20 sanding sheets (5 each of grits 60, 80, 120, 180), 1 Universal E-CUT saw blade (1 3/4 in), 1 HSS segment saw blade, 1 rigid scraper blade, 1 wrench and mounting bolts, and 1 tool case. Weight: 2.6 lbs.

P/N 12-02962 ..... $248.00

SKYBOLT 4P3-SP5 COMBO TOOL

SK-4P3 CLoc® Pliers (PN# SK-4P3)
A must to install CLoc® or Camloc® 4000 Series studs into grommets. Also handy to install 2000 Series Studs, including winged studs. Cushioned grip handles. Grip jaws are milled precisely to fit 4000 Series cups perfectly! ..... P/N 08-07224 ..... $64.90

SK-SP5 SKYBOLT CLOC TOOL (PN# 08-07210) - Specifically designed to preset and adjust CLoc® 4000 Series Adjustable Receptacle and Mounts. Locking Sleeve can be set for known panel thickness to preset SK215, SK245, and SK2003 Dash 5 Series receptacles. With stud removed from grommet in outer panel, tool may be inserted into the receptacle to unlock and adjust insert without even seeing the insert. Positioning sleeve to the opposite end of tool, it becomes a "T26" Tool for installing grommet retainers.

SK-SP5 CLoc Tool..... P/N 08-07210 ..... $31.00

HOSE PINCH-OFF PLIERS

Great for radiator and heater hose, vacuum and fuel lines. Tested to 50,000 cycles without failure for reliable performance. Patented clamping mechanism - No adjustment needed -- Simply squeeze to lock Cushion handgrips for comfort and control. Available in three sizes. Made in U.S.A.

Hose Pinch-off Pliers 1-1⁄4" OD Cap. ..... P/N 12-00524 ..... $19.50
Hose Pinch-off Pliers 2-1⁄2" OD Cap. ..... P/N 12-00525 ..... $25.75
Hose Pinch-off Pliers 3/4" OD Cap. ..... P/N 12-00526 ..... $13.95

HOSE CLAMP PLIERS

Specially designed for applying and removing spring hose clamps.The recesses in the jaws grip the ends of the spring so it cannot slip or twist. Grips with either end or side of jaws for reaching into tight places.

P/N 12-01154 ..... $18.95

BOLT INSERTION TOOL

This tool allows you to put bolts in tight areas. The tool was designed to install the bolts in an aircraft elevator, however this tool has many other uses. The tool is 1/2" wide 5-3/4" long with a 3-1/2" reach. It can be used for fasteners from #6 to 5/16" diameter. The tool is made of 100% stainless steel for strength and appearance. P/N 05-04384..... $28.75

TO

SAFETY WIRE TWISTERS - SAF-T-BLOKS

MILBAR SAFETY WIRE TWISTERS

Three-In-One Tool: Pliers, twisters and cutters. Used on wire sizes .060" or less. Grips wire into 30° slip proof angle. One-hand operation. Squeeze, press button and it locks. Squeeze again and it unlocks. Made in USA.

With Manual Return		
Description	Part No.	Price
Standard Nose - 9" Long	12-00915	$59.75
Diagonal Nose - 9" Long	12-02019	$68.95
Tapered Nose - 6" Long	12-00917	$59.50
Diagonal Nose - 6"Long	12-00914	$63.85
With Automatic Return - Non Reversible		
9" Long	12-00916	$62.95

MILBAR WIRE TWISTERS CUSHION THROAT MODEL 25W & 26W

Milbar is the world's leading brand of Wire Twister Tools and Kits. Designed for the professional mechanic, Milbar forgings are made from high carbon alloy steel and are controlled throughout the manufacturing process to exacting engineering specifications. Each tool passes a series of rigorous quality assurance tests which ensure function and reliability under the most demanding environments. (Black oxide finish) TYPES AND STYLES - Wire Twisters come in 6" Diagonal Configuration. The 25W model incorporate a Cushion Throat to catch clipped wire ends, preventing FOD (foreign object damage). The Spring Return feature automatically retracts the twist rod to ease and speed the work.

25W-NOM Size 6" ..... P/N12-01631 ..... $74.85
26W-NOM Size 9" ..... P/N 12-02018 ..... $79.95

MILBAR WIRE TWISTERS MODEL 42W & 45W

Milbar Safety Wire Pliers 45W 6" & 42W 12" Reversible- Automatic Return Milbar Safetytwist Reversible Wire Twister with Automatic Return.

Milbar 45W Reversible 6" Safety Wire Pliers have an overall length of 8-3/4" and wire capacity of .041". P/N 45W $73.75

Milbar 42W Reversible 12" Safety Wire Pliers have an overall length of 12-1/4" and wire capacity of .060". P/N 15-06301 $124.75

ECONOMY SAFETY WIRE TWISTERS

These top quality twisting lock pliers with automatic return are economically priced and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire. Length 6"& 9". Foreign made.

6" ..... P/N 12-01472 ..... $19.90
9" ..... P/N 12-01473 ..... $19.75

ECONOMY REVERSIBLE SAFETY WIRE TWISTERS

These top quality twisting lock pliers with automatic return are reversible, economically priced, and extremely durable. Features a sharp cutting edge and will twist up to .060" dia. safety wire.

6-INCH ..... P/N 12-02828 ..... $48.75
9-INCH ..... P/N 12-02829 ..... $49.85

SAFETY WIRE TWISTER KIT M300

Contains 6" Safety Wire Twister and 19" Chrome Adjustable Safety Twister Tool.

P/N 12-01680 ..... $99.95

MILBAR 105W PROFESSIONAL WIRING KIT

The most versatile kit available. Contains three different SafetyTwist® Pliers to cover almost any application: 9" Automatic (1W393), 6" Mini (9W) and a 19" Deep Reach Twister (13W). Includes three 1/4 lb. spools of stainless steel safety wire (.020, .032, .041). Durable plastic storage case. Kit weight 4 lbs. P/N 12-02020 ..... $173.75

SAFETY WIRE TWISTER KIT

• 04-134SR - Safety Wire Twister • 04-134SR6 - Safety Wire Twister - Mini • 43-025 - Stainless Steel Aircraft Safety Wire • 43-032 - Stainless Steel Aircraft Safety Wire • 43-041 - Stainless Steel Aircraft Safety Wire• Kit Box 13" P/N 12-02350 ..... $64.75

SPECIALTY TWISTER

An excellent tool for different access situations, this twister provides a deep reach and access to close quarters. Made in U.S.A. P/N 13W $36.95

SAFETY WIRE TOOL

Easy one-hand operation. Reaches into tight places, makes a fast, neat twist. Shatterproof plastic handle. P/N 12-01072 ..... $16.50

SAFETY WIRE STARTER KIT

This handy kit enables you to safety wire any nuts or bolts on an airframe or engine. Just place the special washers under the bolt or nut, bend up the small flanges to hold the bolt or nut in place, and then use the tab of the washer to attach the wire to a solid point so the bolt cannot move. This kit works on the same principle as drilled bolts do and is very handy for those flying with an engine that does not have safety wired nuts and bolts. Excellent for use on 2 stroke engines. Package of spare washers includes 6 ea. of: 6, 8, & 10 mm sizes.

Safety Wire Starter Kit ..... P/N 12-16625 ..... $18.75
Package of 18 Spare Washers ..... P/N 12-16626 ..... $6.75

AERO SAF-T-BLOKS

Since the introduction of Saf-T-Bloks in 1981, they've helped thousands of mechanics by taking the headaches and hassle out of drilling safety wire holes in bolts and nuts. This easy to use Saf-T-Blok holds the bolt steady after you thread it in to the required depth. You then drill the hole through the center with no risk of misalignment. Saf-T-Blok is available in 4 sizes:

Description	Part No.	Price
Standard: (6 Thread Size) 1/4, 5/16, 3/8 USS & SAE	12-15345	$28.70
Metric: (5 Thread Size) 6x1, 8x10, 8x1.25, 10x1.25, 10x1.5	12-15346	$28.80
Aero: (5 Thread Size) 8-32,10-32, .25x20, .25x28, 5/16 x 24	12-15347	$28.70

NUT SAF-T-BLOKS

Designed to enable safety wire holes to be drilled through the head of bolts or through nuts, across the diagonal. Designed to accept up to 3/4" dia. nut. Easy to use. Nut Saf-T-Blok requires that the nut or bolt be placed into the "V" groove, tighten down the holding screw, drill & deburr. P/N 12-15349 ..... $31.50

ALLEN II SAF-T-BLOK STANDARD

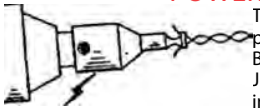
New from MTE industries the Allen Saf-T-Blok2. Design for all socket head cap screws Metric and SAE. With an added plus can be used as a tubing drill guide. As with all the Saf-T-bloks, this takes the headache and hassle out of drilling safety wire holes. P/N 12-02407 ..... $34.95

SAFETY WIRE KITS

These kits include professional safety wiring kit for all applications. Contains 9" automatic standard twister, 6" safety wire twister, made of hardened alloy steel-black oxide finish plus (3) 1/4 lb. spools of annealed stainless steel safety wire. (Sizes: 020, 032, 041). Model 100 also includes 19" chrome adjustable safety wire twister (for cavity and deep access applications.

Model 200 ..... P/N 12-16650 ..... $99.80

POWER TWIST ADAPTER



This new tool attachment provides quick and precise twisting of safety wire using Skill or Black & Decker type cordless screwdrivers. Just attach the adapter to the screwdriver, insert wire and you will have a neat, tight, easy wire twist. Works perfectly in a wide variety of applications (particularly twists in tight spaces). Available exclusively from Aircraft Spruce & Specialty Co. P/N 12-20800 ..... $23.50

SAFETY WIRE DRILLING JIG

This tool provides a fast, simple way to drill bolt heads with virtually no broken drill bits. The tool is made of 6061T6 hard anodized aluminum for durability. Fits 3/16" to 5/8" dia. bolts and works on hex head bolts, header bolts, 12 point countersink and Allen head cap screws. Includes drill bushings and two cobalt drills. Made in U.S.A.

P/N 12-16600 ..... $59.95

TO

STRIPPER/CUTTERS

Klein wire strippers and cutters cut, strip, gauge and loop a wide range of wire types and sizes. Made of strong, hardened steel with comfortable handles, these tools are durable and long lasting.

11055 KLEIN-KURVE™ WIRE STRIPPER/CUTTER

Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 10-18 AWG solid wire and 12-20 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action. P/N 12-00235 ..... $19.75

11057 KLEIN-KURVE™ WIRE STRIPPER/CUTTER

Solid and Stranded. Double-dipped comfort grips with curved handles, cuts, strips, loops and gauges 20-30 AWG solid wire and 22-32 AWG stranded wire, cleanly shears 6-32 & 8-32 screws, coil spring provides fast, self-opening action. ..... P/N 12-00236 ..... $19.75

11045 KLEIN 10-18 WIRE STRIPPER/CUTTER

Strips 10 to 18 AWG solid wire, easy-to-read wire gauge markings, comfortable handles with cushion ridges..... P/N 12-00233 ..... $14.75

11046 KLEIN 16-26 WIRE STRIPPER/CUTTER

Strips 16 to 26 AWG stranded wire, easy-to-read wire gauge markings, comfortable handles w/cushion ridges ..... P/N 12-00234 ..... $13.85

11054 KLEIN KURVE WIRE STRIPPER / CUTTER

Cuts, strips and loops 8-16 AWG Solid and 10-18 AWG Stranded wire. Precision shear-type blades for clean cuts on solid and stranded copper wire. Easy-to-read markings on both sides. Curved handles help reach into confined areas.

P/N 12-03218 ..... $19.80

KLEIN WIRE STRIPPERS 6-12

This lightweight Klein-Kurve wire stripper-cutter strips large gauge 6-12 AWG stranded wire and eliminates the need for a skinning knife. The tool clearly shears 6-32 and 8-32 screws and has a serrated pliers nose, which allows the user to pull, grip, and twist wire design adn double-dipped textured grips provide control and comfort.

P/N 12-01456 ..... $10.75

63020 KLEIN-KURVE MULTI CABLE CUTTER

Designed with 3 different cutting blades; anvil cutter, a copper curved cutter & a steel cutter. Cleanly shears 6-32 & 8-32 screws, double-dipped comfort grips with curved handles, coil spring provides fast self-opening action. P/N 12-00496 ..... $22.85

KLEIN TOOLS CABLE STRIPPER / CUTTER

Klein Tools added its new QTR-Turn NM cable stripper/cutter with Klein-Kurve handles to its existing line of strippers and cutters. The QTR-Turn technology allows users to place cable in the upper jacket strippers, squeeze the handle, and turn one-quarter to completely sever the outer jacket. It utilizes spring-loaded action for self-opening. ..... P/N 12-01770 ..... $25.75

63030 KLEIN 8-1/4" CABLE CUTTER

Cuts up to 1" diameter aluminum and copper coaxial cable, curved jaws firmly grasp cable, shear-type cutting blades, precision, one-hand shearing action. ..... P/N 12-00497 ..... $49.95

CRIMPING/CUTTING TOOL

This tool is designed to crimp insulated and non-insulated 10 to 20 AWG solderless terminals & connectors. It has easy-to-read tool markings to identify the insulated or noninsulated crimping dies. Its tapered nose design works well in tight places and has specially hardened cutter in th nose for quick, clean cuts. Size: 9.75". Lifetime warranty..... P/N 12-00698 ..... $34.90

KLEIN SCREW-HOLDING SCREWDRIVERS

Unique screw-holding design in which screws are held at the tip of drivers for precise placement in tight, hard-to-reach places and allows both torquing and tightening of screws. Starts and drives screws with one hand when working in hard-to-reach spaces.

1/4" Slotted..... P/N 12-02702 ..... $8.50
1/4" Phillips..... P/N 12-02701 ..... $7.95

PLIERS

Designed and built with exceptional quality standards in a tradition that dates back to 1857. Klein specializes in the making of the world's finest pliers, for the professional. What makes Klein pliers different is induction hardening of cutting edges, pliers head hardness, hot riveting and special handle hardness.

D228-8 KLEIN 8" DIAGONAL-CUTTING PLIERS - High-leverage, standard-bevel cutting knives, with hand-form style plastic-dipped handles. P/N 12-00228 ..... $24.85

D203-6 KLEIN 65/8" LONG-NOSE SIDE-CUTTING PLIERS - Standard cutting knives at hinge, wraps, loops, and cuts, plastic-dipped handles.

P/N 12-00229 ..... $21.50

D203-6KLEIN85/16"HEAVY-DUTYLONG-NOSE SIDE-CUTTING PLIERS - Induction hardened cutting knives, greater cutting power, hot-riveted joint, plastic-dipped handles.

P/N 12-00230 ..... $27.50

D252-6 KLEIN 6" DIAGONAL-CUTTING PLIERS - All-purpose, heavy duty, tapered nose, induction hardened cutting knives, hot riveted joints, plastic-dipped handles.

P/N 12-00231 ..... $26.75

5139 KLEIN CANVAS ZIPPER BAG

White canvas bag with strong zipper, convenient storage for tools, 7.5" x 12" overall size.

P/N 12-00239 ..... $11.50

NUT DRIVERS

The professional requires a number of nut drivers in a variety of sizes and types. Klein drivers feature convenience, comfort and efficiency in use, plus exceptional strength and durability. All Klein nut drivers are made of the highest quality tempered steel, carefully heat-treated for maximum strength.

631 KLEIN 7-PC. CUSHION-GRIP NUT DRIVER SET - Contains 3/16", 1/4", 5/16", 11/32", 3/8", 7/16", & 1/2" hollow-shaft nut drivers, roll-up plastic storage pouch. P/N 12-00238 ..... $63.75

610 STUBBY NUT DRIVERS - The #610-1/4 & #610-5/16 stubby nut drivers are designed for use in tight spaces and on hard-to-reach fasteners. The tools have cushion grip handles for greater torque and user comfort. Drivers are made for 1/4" & 5/16" hex nut and hex screw sizes. The tool shafts measure 1.5" long and overall 3.5" long.

#610-1/4 ..... P/N 12-00694 ..... $8.50
#610-5/16 ..... P/N 12-00695 ..... $7.65

KLEIN TIP NUT DRIVER SET 7 -PC SET - Full Hollow Shaft design with Rare Earth magnetic tip. (Only with P/N 12-01594). Full hollow shafts facilitate work on long bolt applications. Cushion Grip handles allow for greater torque and comfort. Handle domes are color coded for easy identification. Internal flanges provide solid, twist-resistant shaft anchor. Chrome plated shaft helps prevent corrosion. Set contains Cat. No. 646-3/16M, 646-1/4M, 646-5/16M, 646-11/32M, 646-3/8M, 646-7/16M, 646-1/2M.

Klein nut driver 7pc. set ..... P/N 12-00306 ..... $66.75
Klein driver 7pc Magnetic Set ..... P/N 12-01594 ..... $93.75

KLEIN HIGH-TENSION HACKSAW

Adjustable blade tension of up to 30,000 PSI for fast, precise cuts, along with soft touch grips for comfort. The alternative 45-degree mounting is perfect for flush cutting, and there's a front mount for reciprocating saw blade. There's a space to store your blade in the handle, and it comes with a 12" x 24 TPI bi-metal hacksaw blade and 6" x 24TPI bi-metal reciprocating saw blade. ..... P/N 12-02641 ..... $23.25
6" Replacement Blade ..... P/N 12-03247 ..... $18.50
24" Replacement Blade ..... P/N 12-02706 ..... $25.50

TO

KLEIN HOLE SAW KITS

Klein Hole Saws feature bimetal cobalt construction which allows for heavy-duty cutting; they can cut through studs in one pass. They also have multiple knock-out slots and holes for easy core removal. Carbide grit hole saws work well for cutting abrasive materials and offer a smooth cut with minimal tear-out.

Electrician's Hole Saw Kit -
Contains the most popular sizes for basic electrical work. Hole Saws: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2" Arbors: 7/16" (qty.2) P/N 12-00969 ..... $88.75

JOURNEYMAN'S HOLE SAW KIT - The most frequently used sizes and an arbor extension for hard to reach spots. Hole Saws: 3/4", 7/8", 1-1/8", 1-3/8", 1-1/2", 1-3/4", 2", 2-1/4", 2-1/2" Arbors: 1/4", 7/16" (qty.2), arbor extension P/N 12-00970 ..... $129.95

MASTER ELECTRICIAN'S HOLE SAW KIT - Includes the most commonly used saws and arbors. Hole Saws: 7/8", 1-1/8", 1-3/8", 1-3/4", 2", 2-1/2", 3", 3-5/8", 4-1/8", 4-1/2" Arbors: 1/4", 7/16" (qty.2)
P/N 12-00971 ..... $172.95

LARGE SIZE HOLE SAW KIT - Contains necessary sizes to upgrade a basic hole saw kit into a master set. Hole Saws: 3", 3-5/8", 4-1/8", 4-1/2" Arbors: 7/16" P/N 12-00972 ..... $109.95

KLEIN ELECTRICIAN TOOL SETS

Designed for beginner and experienced wirers, these tool sets range in size from a basic 14-piece assortment to the 41-piece comprehensive collection. Each set contains Klein premium products, such as wire stripper/cutters, screwdrivers, and pliers, plus protective eye wear and a pouch or tool bag for toting and storage. Each set offers a cost savings when compared to buying the tools separately. Tools in Electricians sets have standard handles. Tools in Journeyman sets have state of the art dual-material handles which provide a superior grip without sacrificing tool strength or durability.

14-Piece Electrician Tool Set ..... P/N 12-00819 ..... $232.95
18-Piece Journeyman Tool Set ..... P/N 12-00821 ..... $317.00
28-Piece Electrician Tool Set ..... P/N 12-00820 ..... $397.00
41-Piece Journeyman Tool Set ..... P/N 12-00822 ..... $663.00

KLEIN DIAGONAL CUTTING PLIERS WITH TAPERED NOSE

Easy working in confined areas. Short jaws and beveled cutting edges permit close cutting of wire. Induction-hardened cutting knives for long life. Hot-riveted joint ensures smooth action and no handle wobble. Plastic-dipped handles for comfort and ease of identification. Custom, US-made tool steel. P/N 12-03373 ..... $27.50

KLEIN LIGHTWEIGHT FLUSH CUTTERS

These shears wire up to 18 AWG producing a flat, flush cut. Shear cutting greatly reduces cutting effort and minimizes fly-off. Cushioned grips and steel return spring for increased comfort during repetitive cutting. Ultra slim profile increases access in confined areas. Heat treated for increased durability. P/N 12-03360 ..... $10.50

FLYING WIRE TENSIOMETER

This tool is used for setting the tension on flying wires from 1/4" - 1/2". Tension ranges from 200 lbs. to 2400 lbs. Can also be used for setting drag, anti-drag wire tension. Ideal for use on Stearmans, Wacos, and Pitts, etc. To use this tool you will need a torque wrench.
P/N 12-12500 ..... $248.00

GREASE JOINT REJUVENATOR

Have you ever tried to push grease in through a grease fitting and couldn't? The Grease Joint Rejuvenator opens clogged grease joints and fittings effortlessly in less than a minute!

- Opens clogged grease fittings & joints
- Cleans and replenishes old and dirty grease fittings
- Loosens dried grease in joints
- Cleans ways and stays in milling machines and lathes
- Lubricates bearings on farm, lawn & construction equipment.

P/N 12-01038 ..... $38.50

COMPRESSION WHISTLE ALERT

No more burning your fingers and hands! Just Listen! Insert Whistle Alert™ into any 14mm spark plug hole and bump the engine until you hear the whistle. You are now on the compression stroke!

- Easily find Top Dead Center compression stoke
- Turn engine over from inside the car and listen for the whistle.
- Made of steel and aluminum
- Made and assembled in the USA.

Whistle Alert (Rigid) ..... P/N 12-01039 ..... $17.50
Whistle Alert (Flex) ..... P/N 12-01041 ..... $12.65

KEARNEY SWAGER

This portable, hand-operated roll type swaging machine will swage MS type terminals onto galvanized and stainless steel cables from 1/16" diameter up to and including 3/16" diameter. Includes machine, a full set of roll dies, terminal gauges and feed guide adapters & instructions in a steel carrying case. Wt. 95 lbs. New manufacture. All replacement parts available. Special order
P/N 12-01188 ..... $6,735.00

ENGINE CALIBRATION & SET-UP KIT

The Engine Calibration & Set-up Kit gives you innovative tools that help eliminate mistakes when setting up mechanical engine timing sequences, timing chains, timing belts, balance shafts and belts, distributor installations and general engine set-up.

Kit includes: •Standard 6" (14mm) and Extended 10.75" (14mm) •TDC Indicators •Compression Gauge Extension •Compression Whistle Alert™ •Crank Stopper •18mm & 12mm Spark Plug Hole Adapters, extra nipple for compression tube to whistle conversion.

Engine Calibration & Set-Up Kit ..... P/N 12-01040 ..... $111.95

STEELMAX POWER TOOLS - 3M™ SANDERS

STEELMAX METAL CUTTING SAW 9 INCH

More efficient than any portable metal cutting process you are using now! • Increase Productivity - No Milling or de-burring with near surgical dry-cut technology. • Cuts a Variety of Metals, Plastic and Wood - Bring your saw to the work-piece while cutting mild steel, stainless steel and aluminum as easy as it cuts plywood. • Cool-to-the-Touch - No waiting for your work-piece to cool down. Just cut it and handle it. • Precise Cutting - With integrated laser sighting system. P/N 12-01716 .....**$412.95**

Accessories	Teeth	Arbor	Part No.	Price
9" Mild Steel Blade	48T	1.0"	12-01803	**$54.95**
9.25" Mild Steel Blade	48T	1.0"	12-01804	**$59.95**
9" Stainless Steel Blade	80T	1.0"	12-01805	**$76.95**
9" Thin Steel Blade	80T	1.0"	12-01806	**$87.75**
9" Alluminum Blade	80T	1.0"	12-01807	**$61.95**

STEELMAX DRYCUT SAW S14

Utilizing a 14" carbide tipped blade, the Steelmax S14 cuts through metal faster, safer and cleaner than abrasive chop saws in a fraction of the time and cost. Powered with a 15 amp motor and geared to turn slower than a chop saw, the S14 dry cutter cuts like a cold saw, but at a fraction of the cost. Sold standard with a 14" carbide tipped mild steel blade attached, heavy duty, industrial strength cast iron base and two position locking vise, this saw is ready for immediate action! Cuts solid mild steel up to 1"thickness; cut profiles: pipe, angles, channel with a depth of cut up to 4-3/4". Bevels to 45 degrees. Saves time and money giving cool cuts that need little to no finishing, eliminating any need for grinding or cool down time. P/N 12-01717 .....**$535.00**

Accessories	Teeth	Arbor	Part No.	Price
14" Stainless Steel (Less Than 1/4")	90T	1.0"	12-01809	**$164.95**
14" Thin Mild Steel (Less Than 1/4")	90T	1.0"	12-01810	**$142.95**

MAGNETIC BASE DRILL

SteelMax® brand drills maintain rigidity and accuracy throughout the life of the drill. The rail system eliminates the need to adjust or maintain traditional gibs. In addition to saving on maintenance, cutter life is increased by reducing movement at the cutter tips. When cutters last longer, you save money every day you use SteelMax!

Magnetic Base Drill.....P/N 12-01718 ....**$1,398.85**

Portable Magnetic Drill.....P/N 12-01811 .....**$999.95**

CUTTERS FOR MAGNETIC BASE BRILL

Dia.	D.O.C.	Part No.	Price
7/16"	1"	12-01813	**$25.66**
1/2"	1"	12-01814	**$25.97**
9/16"	1"	12-01815	**$26.26**
5/8"	1"	12-01816	**$26.66**
11/16"	1"	12-01817	**$27.17**
3/4"	1"	12-01818	**$28.68**
13/16"	1"	12-01819	**$29.94**
7/9"	1"	12-01829	**$32.70**
1"	1"	12-01831	**$38.49**
1-1/16"	1"	12-01832	**$41.27**
7/16"	1"	12-01833	**$35.29**

Dia.	D.O.C.	Part No.	Price
1/2"	2"	12-01834	**$35.29**
9/16"	2"	12-01835	**$39.75**
5/8"	2"	12-01836	**$39.75**
11/16"	2"	12-01837	**$36.79**
3/4"	2"	12-01838	**$40.29**
13/16"	2"	12-01839	**$44.29**
7/8"	2"	12-01840	**$48.95**
15/16"	2"	12-01841	**$51.95**
1"	2"	12-01842	**$58.75**
1-1/16"	2"	12-01843	**$59.90**

Accessories for Base Drill	Part No.	Price
1" Center Pin For SM4374	12-01845	**$11.75**
1" Center For1" DOC Cutters	12-01844	**$11.75**
2" Center Pin For SM437L Only	12-01847	**$7.95**
2" Center For 2" DOC Cutters	12-01846	**$7.95**

1/2 INCH CHUCK & ADAPTER

With this optional industrial arbors and 2MT-1/2"Drill Chuck now you can! SteelMax industrial arbors let you easily adapt our premium m2AL cutters to a variety of machinery, including CNC, lathe's, stationary drill presses and similar equipment. With our integrated coolant collar, cutter performance and cutter life is assured!

P/N 12-01812.....**$98.85**

6 AND 13 PIECE CUTTER SETS

Description	Includes	Part No.	Price
6 Piece Set 1" DOC	9/16", 11/16", 13/16", 15/16", 1-1/16", Cutter Case, and 1" Pilot 9/16"-1-1/16"	12-01848	**$149.95**
6 Piece Set 2" DOC	9/16", 11/16", 13/16", 15/16", 1-1/16", Cutter Case, and 2" Pilot 9/16"-1-1/16"	12-01849	**$199.95**
13 Piece Set 1" DOC	7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8" 15/16", 1", 1-1/16", Cutter Case, and1" Pilot 7/16", 1" Pilot9/16"-1-1/16"	12-01850	**$299.95**
13 Piece Set 2" DOC	7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8" 15/16", 1", 1-1/16", Cutter Case, and1" Pilot 7/16"-1/2", 1" Pilot9/16"-1-1/16"	12-01851	**$399.95**

3M™ ORBITAL SANDERS

The all new line of 3M™ air-powered finishing tools includes innovations designed to optimize performance and productivity. 3M™ Tools are designed for smooth operation, and are packed with horsepower. Multiple grip sizes are designed to provide advanced operator comfort, and color-coded levers allow for easy orbit identification.

RANDOM ORBITAL SANDERS

Non-Vacuum Model

Self-Generated Vacuum Model

The 3M's NEW dust management system featuring Clean Sanding Abrasives and Accessories is revolutionizing the dust evacuation process. Discs are designed to cut more and last longer. The patented multi-hole pattern captures and remove more dust compared to 5- or 6-hole products.

Model	Tool Dia. Inch (mm)	Vacuum	Orbit Dia Inch	Max RPM	Motor HP (W)	Airflow Rate SCFM (LPM	PN	Price
20316	3"(77)	Yes	3/32"	12,000	.28(209)	17(481)	05-03482	**$209.85**
20319	5"(127)	Yes	3/16"	12,000	.28(209)	17(481)	05-03483	**$248.95**
20314	3"(77)	No	3/32"	12,000	.28(209)	17(481)	05-03485	**$229.00**
20317	5"(127)	No	3/16"	12,000	.28(209)	17(481)	05-03484	**$234.95**

Accessories	PN	Price
Clean Sanding Filter Bag	05-03486	**$6.50**

3M™ CLEAN SANDING 236U DISCS

An aluminum oxide Hookit™ disc with precise hole design for improved dust extraction constructed on a C weight, intermediate paper backing. CW Array Hole Pattern.

Model	Part No.	Price
6"P120	05-03576	**$0.58**
5"P500	05-03577	**$0.62**
5"P400	05-03578	**$0.62**
5"P320	05-03579	**$0.62**
5"P240	05-03580	**$0.62**
5"P220	05-03581	**$0.62**
5"P180	05-03582	**$0.62**
5"P150	05-03583	**$0.62**
5"P120	05-03584	**$0.95**
3"P500	05-03586	**$0.34**
3"P320	05-03588	**$0.55**
3"P240	05-03589	**$0.34**
3"P220	05-03590	**$0.34**
3"P180	05-03591	**$0.34**
3"P150	05-03592	**$0.34**
3"P100	05-03594	**$0.34**

TO

CABLE CUTTERS - SWAGERS

FELCO CABLE CUTTERS

A cable when crushed or deformed is difficult to use with fittings. These fine quality Swiss made cutters, with unique triangular jaws, never leave a frayed end.

#C-7F CUTTER - Capacity 3/16" diameter and smaller. Length 8". Wt, 10 oz.
P/N 12-01135 ..... $51.85

#C-9 CUTTER - Cuts 1/4" steel cable
P/N 12-00179 ..... $148.75

#C-12 CUTTER - Capacity 3/8" diameter and smaller. Length 19". Wt. 3 lbs.
P/N 12-01174 ..... $222.95

#C2A CUTTER - Snub nose for loose cuts. 10% harder blade than C7 for long life and cutting of very hard wire or cable. Opening of tool cuts up to 2mm wire & stranded cable. P/N 12-00223 ..... $59.75

S & F CABLE CUTTERS

A fine tool made from high quality alloy steel and heat treated for best cutting action and long life of cutting edges. Handles shaped for comfortable grip and minimum cutting effort. Max. capacity 3/16" dia. 1 x 19 cable.
No. 316 Cable Cutter ..... P/N 12-18600 ..... $18.50

BENCH MOUNT FOR #316 CABLE CUTTER

This bench mount adds to the versatitlity of the #316 cable cutter. Mounts with 2 screws to a bench or plate. Fingers can still grip the tool. Easily removed. P/N 12-00674 ..... $3.50

S & F HARD WIRE CUTTER

These quality cutters feature a unique handle design with thick "T" shaped vinyl handle grips for maximum comfort while cutting. Cuts 3/32" maximum diameter music wire, heat treated steel spring wire, stainless or galvanized cable. Produces clean square cuts. Gold iridite finish for maximum rust protection. Length: 6". Wt. 7 oz.
Model No. 093. ..... P/N 12-18605 ..... $17.95

CABLE TENSIOMETER

This precision instrument gives accurate readings over a wide range of cable tensions. No preliminary adjustments are necessary. May be used continuously without resetting or checking. Extreme heat or bitter cold does not affect the accuracy of the readings. One instrument is usable on many cable sizes with absolute accuracy. The small size permits entry through small openings and permits accurate readings on cable located in confined areas. The entire operation of testing cable tensions can be done with one hand in a matter of seconds. Range in Lbs.: 10-100 on 1/16", 3/32", 1/8"; 15-150 on 5/32", 3/16"; 25-150 on 7/32", 1/4" ..... T5-2002-101-00 ..... $838.00

BURROUGHS CABLE GAUGE

Easy to use - just squeeze ball handle, put gauge on cable, release handle and read tension on rotation dial. No conversion charts necessary. Tension range: 10–70lbs. for 1/16" cable, 15 - 70 lbs. for 3/32 & 1/8" cable. 50-350 lbs. on 5/32" & 3/16" cable. Only 3-1/4" wide. Fits through inspection hole.
For 1/16", 3/32", 1/8" ..... P/N 12-19200 ..... $182.95
For 5/32", & 3/16" ..... P/N 12-19210 ..... $167.50

TENSITRON CABLE TENSION METERS

Standard Features of all models: • Easy one-hand operation • No interchangeable parts are needed to adapt to different cable sizes • Memory Lock Pointer holds readings until cleared • Calibration chart affixed to back of meter • Durable and made of non-corrosive materials • Weigh approximately 21 oz. Compact design allows engagement of meter onto cables closely routed along floors, flat surfaces and other minimum clearance areas. Models ACM-100, ACM-200, ACM-300, ACM-400 are compact enough to allow use in limited access panels as small as 4" dia.

Model	Part No.	Price
ACM-100 - Designed to measure from 5-100 lbs tension in 1/16", 3/32", 1/8", 5/32" diameter cables.	12-01050	$769.00
ACM-200 - Designed to measure 20-200 lbs tension in 1/16", 3/32", 1/8", 5/32", 3/16", and 1/4" diameter aircraft cables.	12-01051	$769.00
ACM-300 - Designed to measure from 40-300 lbs tension in 3/32", 1/8", 3/16" and 1/4" diameter standard cables.	12-01052	$835.00
ACM-400 - Designed to measure from 40-400 lbs tension in 3/32", 1/8", 5/32" and 3/16" diameter standard cables.	12-01053	$769.00
ACM-600 - Measures tension from 40-600 lbs in 1/8", 5/32", 3/16" and 1/4" diameter aircraft cables.	12-01362	$839.00

ECONOMY SWAGING TOOLS

NO. 2 SWAGE-IT - For use with sleeves for 1/16", 3/32" and 1/8" cable. Swaging pressure applied by using a wrench to tighten bolts. Size: 1/2" x 1" x 7". Wt. 1 lb. Cadmium plated. P/N 12-12000 ..... $19.50

NO . 3 SWAGE- IT - For use with sleeves for 1/8", 5/32", 3/16" and 1/4" cable . Same design as No. 2 tool but larger. Size: 3/4" x 1-1/2" x 14". Wt. 3-1/2 lb.
P/N 12-12100 ..... $38.75

SWAGE-IT RIGGING KIT

This Swage-It rigging kit contains everything you will need for rigging and emergency repairs of Nicopress sleeves on cables. Includes the #2 Swage-It tool for 1/16", 3/32" and 1/8" sleeves, 1/2" extension wrench for use on the #2 tool and a #316 cable cutter. Size: 4-1/2" x 9". Packaged in a clear plastic tube with vinyl caps to better protect tools.
P/N 12-12200 ..... $49.50

LOCOLOC® HAND SWAGER NO. 1-SC

Designed for swaging copper and aluminum 1/16, 3/32, 1/8, 5/32 and 3/16 oval and stop sleeves, plus 7/32 stop sleeves, total of 11 sizes plus the ability to cut up to 7/32 diameter aircraft quality steel cable. A multi cavity hand cable swaging tool with a dozen functions. 26 inches long, weighs 6.5 pounds. Parts list included with each cable swaging tool. To assure proper swaging of Locoloc® aluminum, copper and stainless steel sleeves there is a Locoloc "Go" "No Go" gauge with each cable swaging tool. P/N 12-12400 ..... $247.95

LOCOLOC HANDSWAGING TOOL

LocoLoc #1-3-SBHS Hand Swager – This tool is an outstanding small hand tool, and it does a great job of swaging small sleeves. This is a (4) cavity tool, swaging sleeve sizes 1/32", 3/64", 1/16", 3/32" and #12 SEISMIC.
Ratchet mechanism will not release until swage is complete. Swages copper and aluminum sleeves only. Usage instructions and swage gauge included in each tool. Each LOCOLOC Swager is supplied with a gauge. Application: Copper Oval Sleeves, Copper Oval Plated Sleeves and Aluminum Oval Sleeves P/N 12-00222 ..... $114.90

GO-NO GO SLEEVE GAUGE

When the proper slot in the gauge slips over the compressed area of the sleeve after swaging then your swage is satisfactory. If the proper slot does not fit over the compressed area of the sleeve after swaging then your tool is out of adjustment and your cable assembly will not hold the rated breaking strength of the cable which should be the result when oval sleeves are used to form a loop or eye in a cable assembly. GA-1P: Gauges all swages performed on 1/32", 3/64", 1/16" 3/32", 1/8", 5/32", and 3/16" oval and stop sleeves. P/N GA-1P $11.80

NO-GO GAGE

The No-Go gage requires inspection of rollers; roller housings, seat rails, engagement pin, and attaching hardware. There are five measurements required for each pilot and co-pilot seat, these two tools will shorten the time to make these five measurements to minutes. Tool A measures pin engagement, roller tang width, and roller tang thickness. Tool B measures seat rail hole wear and opening of roller housing tangs. P/N 12-02861 ..... $39.95

NICOPRESS SWAGING TOOLS - 64-CGMP

The 64-CGMP has four grooves and is used for Oval Sleeve in the range of cable sizes from 1/16" through 5/32". The "C" groove is also used for the No. 871-1-C Stop Sleeve. The No. 63V-XPM has three grooves and is used only with Oval Sleeves. For cable sizes 1/8", 5/32" and 3/16".

Cable Dia	Sleeves				Swaging Tools	
	Plain Copper		Zinc Coated Copper		64-CGMP	63V-XMP
1/16	MS51844-42	18-1-C	MS51844-22	28-1-C	X	
3/32	MS51844-43	18-2-G	MS51844-23	28-2-G	X	
1/8	MS51844-44	18-3-M	MS51844-24	28-3-M	X	X
5/32	MS51844-45	18-4-P	MS51844-25	28-4-P	X	X
3/16	MS51844-46	18-6-X	MS51844-26	28-6-X		X

64-CGMP ..... P/N 12-02560 ..... $284.50
63V-XMP ..... P/N 12-02561 ..... $284.50

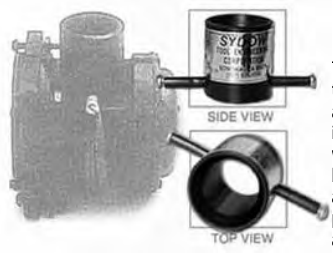
TO

TENSITRON ACX-SERIES DIGITAL AIRCRAFT CABLE TENSION METER

* Indicate Cable Tensions in Lbs, KG, or Newtons.
* Small space access. One-hand operation. Memory storage features. ACX Screen Callouts :Display shows tension, battery charge level, name of calibration selected, and stores and displays up to 5 separate tension readings and their average. * Large, easy to read backlit, graphic display with adjustable backlighting and contrast. * Select cable size from menu. Instrument automatically adjusts calibration to correct setting. * Accuracy is +/- 2% full-scale for all menu-selectable calibrations. Accuracy for custom calibrations is material specific. * Up to 10 calibrations can be entered into instrument. (All calibrations password protected to provide due diligence). * Adjustable LCD refresh rates allow for stable digital readings. * All models factory-calibrated and ready for use on aircraft. * Calibration values traceable to National Standards. Calibration certificate included. Input Real-Time Serial Data into any Windows® application using any number of software wedge programs, such as WinWedge Pro® for Windows, or configure your Windows® operating system to capture the data via HyperTerminal®.

Model	Range	Res.	Cable Selections	Part No.	Price
ACX-100	5-100 lbs	0.5 lb	1/16", 3/32", 1/8", 5/32"	12-02103	$834.00
ACX-250	20-250 lbs	0.5 lb	1/16", 3/32", 1/8", 5/32"	12-01549	$834.00
ACX-500	40-500 lbs	1 lb	3/32", 1/8", 5/32"	12-01052	$835.00
ACX-CWT	20-250 lbs	0.5 lb	CWT-5,CWT-10, CWT-15,CWT-20,CWT-25	12-02104	$833.00
ACX-CMB	20-250 lbs	0.5 lb	1/16",3/32", 1/8",5/32", CWT-5 thru CWT-25	12-02105	$938.00

COMPASS FILLING AID



The compass filling aid is designed to be used for filling most standard aircraft compasses. The standpipe is simply attached to the compass with a supplied special rubber band. The compass is then filled and purged through the standpipe. When all air is removed, and the level in the standpipe is constant, the plug is then installed through the filled standpipe. Thus the need for submerging for proper filling is eliminated. ..... P/N 12-17604 ..... $23.50

TURNBUCKLE WRENCH CABLE RIGGING

This tool consists of two clamps joined by a 12" length of sprocket type (bicycle) chain. It will accommodate all sizes of aircraft cable. When clamped to cable and fittings at each side of the turnbuckle, anchor the cable to allow free adjustment of the turnbuckle. The adjustment becomes a two hand instead of three hand adjustment. ..... P/N 12-00833 ..... $15.16

THE PEN GRIP - PEN AND TOOL HOLDER

The Pen Grip attaches to almost any surface with double stick tape. Just peel off the backing on the attached double stick adhesive, press firmly onto the surface to which you want it attached and insert your tools. The unique gripping fingers hold all sorts of pens, pencils, & tools in many different positions, even upside down. Like the Tool Grip, The Pen Grip is available in White and Black.

Get a Grip Pen Grip (Black)
PN 12-00961 ..... $5.95
Get a Grip Pen Grip (White) ..... PN 12-00962 ..... $5.95

WIRE SPOON

Features: • Wire threader designed for threading wires into an already tied harness • 300 Series stainless steel construction • Made in America for superior quality
P/N 12-01801 ..... $10.95

VAN SANT MULTITOOL ATTACHMENTS

The Multitool belt and disc grinding attachments for your bench grinder are must-have tools for any fabricator! These versatile tools remove material up to 5 times faster than with the equivalent grit grinding wheel. Belts change in seconds from grinding, to sand deburr or polish. Quality construction is backed by a 3-year warranty. The attachments are all available with motor options to suit the hobbyist or the professional. Includes 1 belt and 1 disc.
Visit our website for a Compatability Template in PDF

M362MULTITOOLGRINDERATTACHMENT- (2"X36" Belt and one disc)
P/N 12-02064 ..... $199.95

M482 MULTITOOL GRINDER ATTACHMENT - (2"X48" Belt and one disc)
P/N 12-02068 ..... $279.95

M462-075MULTITOOLGRINDERATTACHMENT - (4"X36" Belt and one disc with industrial motor)
P/N 12-02067 ..... $349.95

M462 MULTITOOL GRINDER ATTACHMENT - (4"X48" Belt and one disc)
P/N 12-02070 ..... $349.95

DISC GRINDER MITER ATTACHMENT - The Multitool disc grinding attachment for your bench grinder are must-have tools for any fabricator! These versatile tools remove material up to 5 times faster than with the equivalent grit grinding wheel. P/N 12-02071 ..... $74.95

DILLON MECHANICAL FORCE GAUGE

Model X-C comes in nine capacities ranging from 50 lb to 25,000 lb or 50 to 10000 kg. Allfeature accuracy of ±1% of full capacity, except the 25,000 (10000kg) capacity instruments which are accurate to ±2% of full capacity.
Load is applied against a hardened ball which rotates to maintain vertical alignment as pressure increases. The ball is held in place with a spring clip or retainer. A threaded mounting hole is located opposite the loading ball in the bottom of the beam. Model X-C is available in pound and kilogram capacities..... P/N 12-03326..... $820.00

DILLON DIGITAL FORCE GAUGE GTX PLUS

The Dillon GL Force Gauge is the best equipped force gauge found in its price range, including features such as rechargeable battery, serial output, backlight, die-cast enclosure, carry case and more. The GL is available in a wide assortment of capacities to fit nearly any testing need. The optional CT Test Stand is an ideal complement to the GL Force Gauge to improve testing results. Dillon also offers a range of grips and accessories to expand testing possibilities.
P/N 12-03327..... $930.00

QUICK-CHECK TENSION METERS

The Dillon Quick-Check can be placed on a cable, measure its tension, and removed in under five seconds! There are no complex lookup tables, no conversion charts. The operator can quickly select from 15 different wire sizes and types stored in Quick-Check's memory. The Check-Tensioning mode graphically displays the current and target tensions for extremely quick setting of line tension. Even the infrequent battery changes are quick. The Quick-Check can be employed in many industries to ensure proper tensioning. Typical applications include tower and stack guy wires, pretensioned cable barriers, bridges, elevators, winch rope, overhead electric transit wires, fall arrest systems, aircraft cables and utilities. Features: • Sheaves with bearings eliminate friction and provide the best accuracy • Accommodates a wide range of wire sizes and styles • Telescoping handle engages meter quickly with minimal effort • Highly visible yellow finish • Easy-to-read display with full-text prompts • Easy to use soft-key interface • Uses popular AA batteries and has long life between changes.

2000 Lb..... PN 12-03324 ..... $1,995.00
10000 Lb. ..... PN 12-03325 ..... $2,095.00

TO

STRUT PUMPS – DEBURRING TOOLS

THE GRIPPER - ALL DIGITAL CABLE TENSIOMETER

There are no extra parts to worry about. The Gripper can adapt to 5 Cable sizes 1/16, 3/32, 1/8, 5/32, and 3/16. From 5 to 150lb's. 1%-2% Accuracy. An instrument that will pay for it self quickly. The time savings compared to your current tool will amaze you. Electronically measured readings, assures accurate, reliable and repeatable measurements every time you use the "Gripper". The Gripper heads small size (1 1/8" square by 4 1/8" long) lets you access tight areas as it will go where other just will not go. It comes to you calibrated and ready for use. Features: • Unique Remote Head Fits in to tight areas • Backlit Controller for easy reading . Specifications; • Cable sizes: 1/16, 3/32, 1/8, 5/32, and 3/16. • From 5 to 150lb's • 1%-2% Accuracy

P/N 12-01722 ..... $1,395.00

DEBURRING TOOL

Utilizes a twist-of-the-wrist action for deburring holes and radii. Curved blade automatically follows all contours. Telescoping blade holder extends to reach deep internal holes. Supplied with one #10 and one #20 deburring blade. P/N 12-00700 ..... $21.75

Item	Description and Application	Part No.	Price
#10 Deburring Blade	High-speed steel. For steel, aluminum & smaller holes	12-00800	$3.75
#20 Deburring Blade	High-speed steel. For brass, Bronze, cast iron, larger holes.	12-00900	$3.85
#40 Scraper Blade	High-speed steel. Small triangular blade.	12-01000	$7.50
#42 Scraper Blade	High-speed steel. Large triangular blade.	12-01100	$11.60
#48 Scraper Blade Holder	Holder has 10-32 threads. Accepts #40 & #42 blades. Extends to 3-1/2".	12-01200	$7.85
#50 Scriber	Carbide-tipped scriber.	12-01300	$7.90
#60 Deburring Blade	For backside deburring & for restricted positions	12-01400	$5.70
#70 Deburring Blade	Carbide-tipped blade for deburring edges of sheet metal.	12-01500	$9.50

SPEEDY BURR II

Speedy Burr II is designed for deburring outside corners, sheet metal, machined parts, extrusions, castings, and plastic parts. This lightweight easy grip tool has a durable plastic coating on the handle for comfort and a sure grip. The burring tip is made from hardened steel and is replaceable.

Speedy Burr II..... P/N 12-00651 ..... $23.65
Replacement Burr Tip P/N 12-00652 ..... $12.65

DEBURRING & SCRAPING KIT

Standard duty kit includes MANGO II Handle, "B" Blade Holder, "C" Blade Holder, B10, B20, B30, B60, B11, B70, C40 blades and the "C" Key. P/N 12-03194 ..... $35.75

PRO SERIES STRUT SERVICE TOOL

The Pro Series Strut Service Tool has all the great attributes of the original Strut Service Tool, with the addition of a dual tank and dual check valve design. The longer service hose makes it easy to attach. Strut pressure, fluid and foam is captured in one tank. Clean, foam-free fluid is drawn back into the strut from the second tank. Simplicity, cleanliness and less waste make this tool a must-have. The strut valve core is not removed. P/N 12-00677 ..... $159.50

TIRE BALANCER AND BEARING PACKER

For 500-5 & 600-6 Bearings and Tires. Package Includes: Set of 500-5 & 600-6, Bearing Cones, Aluminum Balance Shaft, Set of Balance Shaft Bearings, 1/4 oz. Lead Balancing Weights, Aluminum Bearing Packing Tool that, removes old grease and abrasives, A great Stainless Tool Box using the shaft as a handle P/N 12-02309 ..... $399.00

BOGERT PRESSURIZED STRUT FILLER TOOL

Features: • It is a convenient, small, compact system, easy to use, and neat to store. • It is a direct bolt-on modification to the Deluxe Strut Service Tool. • It's built in pump forces dluid into the strut to fill the unit. • Excess fluid can be returned to a collection tank via the control unit. • Can be used on struts requiring up to 3000 psi strut pressure • Made in the USA.

Totally safe and totally clean! –No clean up. No oil on tire and brakes or the shop floor. 10X Faster -Save time and money because you don't have to drag the jacks out and lift the airplane. 10X Safer- the airplane never leaves the ground, the technician doesn't have to be under the aircraft while the strut is being serviced nor does the mechanic have to compress and extend the strut. 3X the Flexibility -Strut service can be done now on the ramp or at remote locations freeing up hangar space and giving maintenance personnel more flexibility.

P/N 12-03167 ..... $595.00

HX STRUT PUMP

Boost air to 1000psi without an air compressor.

- Very portable. No air compressor needed!
- Use air bottle, spare tire, tire pump for source air.
- Can also use with air compressor for air source.
- Detailed instructions.
- Equipped with 7 foot hose

P/N 12-16710 ..... $363.00

15X STRUT PUMP

Boost air or nitrogen to 2250psi.
- More than enough pump for most aircraft.
- Built for shop use or for a discriminating do-it-yourselfer.
- Weighs less than 7 pounds.
- Equipped with a 36" hose.
- Comparable to pumps priced in the thousands.
- Nitrogen adapter makes it easy to use bottled nitrogen.

15X Strut Pump..... P/N 12-16700 ..... $478.00
Nitrogen Adapter Kit..... P/N 12-02016 ..... $35.95

STRUT SERVICE TOOL

Service Strut in your Sunday Suit.
- Clean way to service struts.
- Strut valve core is NOT removed.
- Hose fitting releases pressure & fluid into the bottle.
- Raise & lower strut a few times, then apply the charge.

P/N 12-16792..... $26.50

BOGERT PRESSURIZED STRUT FILLER 16M-PSF

Finally a real time and money saver! This tool changes the way landing gear struts are serviced. No longer do you have to put an aircraft up on jacks to add fluid to and fill Oleo type landing gear. This is a totally clean and safe process. No oil is spilled. The strut valve is not disturbed and the plane is sitting on the ground the whole time. This is safe for the technician and the aircraft. Features: • It is a convenient, small, compact system, easy to use, and neat to store • Two tank system. One tank contains clean Strut fluid and the other collects the excess • Built in pump forces fluid into the strut to top it off and the excess is drained off controlled right from the unit • Large capacity 5 qt storage tanks are big enough for just about any strut • Can be used on struts requiring up to 3000 psi strut pressure • Made in the USA.

Strut Filler..... P/N 12-03166..... $675.00
Strut Filler Tool..... P/N 12-03167..... $595.00

TO

CONDUCT-A LITE INSPECTION KIT

Kit consists of aluminum 2-cell holder, 1-cell holder for use in small areas, 6" straight Lucite conductor, 4" curved Lucite conductor for lighting around corners, 2-1/2" straight conductor for pin-point lighting, and clip on mirror which attaches to any of the Lucite conductors. When used with curved conductor it can virtually make light available around a corner in a full 360° arc. Operates on penlight batteries (not included). P/N 12-14900 .....$19.60

FLUORESCENT WORK LITE

Lights a greater area than a 150 W bulb for 1/10 the electricity. Throws a glare-free light. Hold it or hang it. Cool, insulated, shatter-resistant. Does not get hot - safe to handle. For 110V AC. Furnished with 25-ft. yellow oil-resistant cord. P/N 12-00909 .....$47.50

FLEXIBLE MICROLIGHTS

This Super-Bright Micro 360 Flexible LED Light is 10 times brighter than standard flashlights and lasts up to 100 hours on a single set of batteries! Features: •Stainless Steel • Lifetime Warranty • Focused lens power beam • Shock proof, water resistant and cold burning • LED-"Light-Emitting Diode" • White beam • 100 hours of light without a battery change •Diode-charge system • Easy on/off-switch • 6" in length • Batteries included.

Micro Flex..... P/N 13-02846 .....$26.75
Mega Flex..... P/N 13-02847 .....$44.95

HEADLIGHTS

The Brighteyes Pro Headlights is a hands-free flashlight worn like eyeglasses to provide light for reading maps, instruments, repair work, and more. Excellent for work on aircraft, automotive applications, around the house, camping, & fishing. Headlights can be used with or without eyeglasses, and the lights will swivel to direct the light where you need it. (4) AAA batteries included.

P/N 12-00242 .....$13.50

BEND-A-LIGHT

Bend-A-Light flexible brass–alloy high intensity light tools bend to any configuration and illuminate hard-to-reach areas where conventional lighting cannot go. The incredibly brilliant light beam penetrates anywhere! Bend-A-Light is a must for electronics, automotive, maintenance, repairs, locksmiths, industrial, hobbies, around the house and more. You bend it… and it holds! Bend-A-Light is the only complete line of professional quality high intensity flexible light tools. Available in 3 lengths and 3 different lamps to choose from. All Bend-A-Light models are made in USA and come with batteries installed.

Part No.	Description	Length Flex Shaft	Length Overall	Batt.	Bulb	Price
12-15005	Mini Pro	6"	11.5"	2-AAA	12100	$19.95
12-15150	Pro	15.75"	24"	3-AA	12110	$38.60
12-10250	Removable Shaft	9.5"	15.75"	2-AA	12100	$20.95

Part No.	Description	Dia	Bulb Life	Price
12-15020	12100 - Replacement Lamp	5/32"	4 Hours	$7.50
12-12110	12110- Krypton Lamp	5/32"	20 hours	$8.95

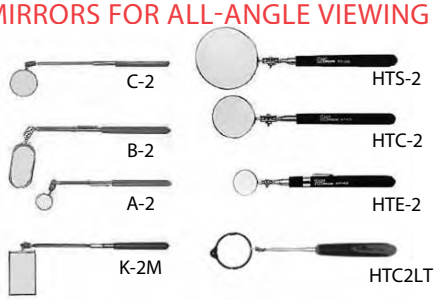
HAWKEYE PRECISION FLEXIBLE BORESCOPES

Hawkeye Rigid Borescopes feature the patented endoGRINS(r) lens technology that provides a sharp view inside engine cylinders, wings, under seats, and other remote areas. Includes a mirror tube which allows you to look sideways in a 360 degree arc as well as straight ahead. Packed in a lockable metal case with die-cut foam to protect the borescope. The heavy duty Mini-NOVA light source is highly recommended in aircraft applications. All Hawkeye Slim borescopes have a 0° direction-of view and 42° field-of-view. A rotating 90° direction-of view is achieved by sliding a Slim Mirror Tube onto the scope. Hawkeye

7" Hawkeye Hardy Kit ..... P/N 12-00337 .....$796.00
12" Hawkeye Hardy Kit ..... P/N 12-00338 .....$839.00

NOTE: ALL BORESCOPES ARE NON-RETURNABLE

INSPECTION MIRRORS AND MAGNIFYING MIRRORS FOR ALL-ANGLE VIEWING



Double ball-joints of tempered spring steel move freely, hold desired position for viewing to 360°. Mirrors have brushed stainless steel backs and insulating vinyl grips. Refill mirrors available.

Description	Size	Length	Part No.	Price
A-2 Circular Pocket mirror	7/8" Dia.	7.5"	12-01080	$4.90
A-2M Circular Magnifying Pocket mirror	7/8" Dia.	7.5"	12-01081	$7.50
B-2 Oval Pocket mirror	1" x 2"	8.5"	12-01169	$5.50
C-2 Circular Telescoping Mirror	2-1/4" Dia.	10" to 14"	12-01175	$7.90
C-2M Circular Magnifying Telescoping Mirror	2-1/4" Dia.	10" to 14"	12-01176	$11.95
K-2M Rectangular Magnifying Telescoping Mirror	2-1/8" x 3-1/2"	11.25" to 14.25"	12-01152	$12.95

Description	Part No.	Price
HTE-2 with 1.25" mirror for viewing in tight areas telescopes from 6.5" to 35"	12-01090	$10.75
HTC-2 with 2.25" mirror for viewing in less restricted areas telescopes from 6-1/2" to 36-3/8".	12-01089	$10.50
HTS-2 with 3.25" mirror for brightest clearest viewing with room tomaneuver telescopes from 6.5" to 36-3/8".	12-01091	$12.50
HTC-2LTwith 2.25 LED case illuminates darkened areas - two lithium batteries included. All-angle ball joint holds lighted mirror head firmly for perfect viewing textured cushion grip will not slip in wet or oil hands. Stainless steel handle telescopes from 6-3/4" to 37"	12-01979	$16.50

Accessories	Part No.	Price
Mirror Size: Dual 1"x2" Weight: 2oz	12-01084	$1.20

THE INSPECTOR ADJUSTABLE LIGHTED INSPECTION MIRROR

No more trying to aim a flashlight at the old style mirror. Inspector is a one–hand tool that comes with a very bright light that illuminates the total inspection area. Easy to adjust the mirror angle. Once inserted into the inspection area, simply push or pull the thumb knob for a 90° mirror angle adjustment. The product is constructed of non-conductive materials for safety. The mirror, lamp, and 2–AA batteries (included) are easily replaceable.

Inspector.....P/N 12-15105.....$25.50
Inspector Replacement Lamp.....P/N 12-15110.....$3.65
Inspector Replacement Mirror .....P/N 12-15115.....$5.95

BINOCULAR MAGNIFIERS

The Binocular Magnifiers offer powerful, crisp magnification of your detailed projects while simultaneously leaving both of your hands free to work. The ground and polished optical lens is mounted to a tilt-up frame, allowing you to disengage the magnifier without removing the entire assembly from your head. This item is equipped with a cushioned headband which rests as comfortably as a baseball cap and is likewise adjustable for a snug fit.

Features: • 1.75x magnifying lens. • Great for assembly and inspection applications. • Used commonly by toolmakers, machinists, engravers, jewelers and hobbyists. •Leaves hands free to work. • Tilt-up lens frame instantly removes magnifying lens from sightline. • Ground and polished optical lens eliminates eyestrain. • Fits over prescription glasses. • Adjustable, cushioned headband for comfort fit.
14" focal length.

Description	Power	Focal Length	Part No.	Price
Binocular Magnifiers	2.25X	10"	950-5	$29.50

TO

GRACO HVLP SPRAY SYSTEMS

Virtually eliminates mist. Requires less maintenance. Blows less heat up the stack. Uses up to 50% less material. Delivers better pattern control. Reduces overspray up to 90% Eliminates high-pressure "flop" and tiger stripes.

GTS-3800 HVLP SPRAYER - The GTS-3800 is highly productive for nearly all fine finish applications. Easily spray stains, lacquers, oils, enamels, urethanes and automotive finishes. Plus, it atomizes many water-based latex and acrylic coatings, multi-color and other higher viscosity coatings.

- Turbine Stages – 3
- Turbine Air Working Pressure – 6 psi (.414 bar, 41.4 kPa) max.
- Turbine Air Outlet Flow Rate – 80 cfm (2265 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose Length – Standard units incl. 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 16 AWG, 3 wire, 6 ft (1.8 m)
- Electrical Rating – 12A at 120 VAC
- Weight: Complete – 34 lb
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15780 ..... $954.00

GTS-4900 HVLP SPRAYER - Our most powerful and versatile sprayer offers everything you need on the job for high productivity. This unit is loaded with features and can spray the broadest range of materials.

- Turbine Stages – 4
- Weight: Complete – 39 lb
- Turbine Air Working Pressure – 8 psi (.552 bar, 55.2 kPa) max.
- Turbine Air Outlet Flow Rate – 82 cfm (2321 lpm) max.
- Gun – GTS-980 Non-Bleeder Style with Fluid Set #3, #4 and #5
- Cup – 1 qt (1 liter)
- High-Flex Turbine Air Hose w/Quick disconnects – Standard units include 30 ft (9 m). Use 60 ft (18 M) max.
- Power Cord – No. 12 AWG, 3 wire, 15 ft (4.6 m)
- Electrical Rating – 14A at 120 VAC
- Dimensions: 18 in. x 15-1/2 in. x 16 in.

P/N 12-15950 $1,652.00

GRACO ACCESSORIES

Description	Part No.	Price
30 ft. Replacement Hose	12-00016	$92.25
Superflex Hose 54"	12-74660	$32.75

PROFESSIONAL AIR BRUSH KIT

Gravity air brush, double action trigger for air-paint control, precision machined nozzles -air and fluid . Color Applied-watercolors,acrylics,dyes and inks.
Contains: 1 x Airbrush, 1 x 8.6'Hose, 1 x Wrench, Fluid Nozzle - 1 x 0.3mm, 1 x 0.5mm, 1 x 0.7mm, Metal cups - 1 x 2cc, 1 x 5cc w/lid, 1 x 13cc w/lid.

P/N 12-02566 .....$192.00

AXIS HVLP PAINT SPRAYERS

The Axis series of paint sprayers is designed to take the guesswork out of choosing a spraying system which can be confusing for the home-builder who is going to paint for the first time. Rather than offer a wide variety of sprayers, Axis has selected the best turbine for each type of product normally used to finish an airplane. This is the SP 2003 (three stage turbine) which is furnished with 30 feet of air delivery hose and the Lexair spray gun. Select one of the three systems shown below based on type of material you will be spraying. If waterborne materials are going to be used, we can furnish systems for this process on a special order basis.

Sys. 1 to paint aircraft covered in fabric ..... P/N 12-15920 ..... $845.00
Sys. 2, to paint composite structure..... P/N 12-15930 ..... $770.00
Sys. 3, to paint over metal or wood..... P/N 12-15940 ..... $820.00

ACCESSORIES

Lexair Gun ..... 12-01385 ..... $385.95
Hose 40 ..... 12-01386 ..... $61.95

AXIS HALF FACEMASK ASSEMBLY

Comfortable neoprene half facemask with durable strap assembly provides maximum seal with a wide sealing edge that fits securely against the face. You'll find it's a pleasure to wear. Add a Pullover Painting Hood (PN 12-03317) and Lens Protectors (PN 12-03318) for complete head and eye protection. Weight: 2 lbs.

P/N 12-03316 .....$86.75

PULL OVER PAINTING HOOD

Durable full protection hood designed to be worn over any Axis Products, Inc. half facemask air supplied respirator system. Large 16" x 6 1/4" viewing area. Air pump supplies seven cfm of cool fresh air which circulates around the hood and exits around the neck. Don't forget to protect your lens with Hood Lens Covers (PN 12-03318) Caution: This hood is designed to be worn over air supplied half facemask system only! P/N 12-03317 .....$39.95

AXIS AIR SUPPLIED TYVEK PAINTING HOOD

The Air Supplied Tyvek Painting Hood is durable and provides full protection. Large 16" x 6 1/4" viewing area and ratcheting headband for a secure fit are included. When used with any Hobbyair System it will supply cool fresh air to the hood, which circulates and exits around neck. Air flow prevents lens fogging. Don't forget to protect your lens with Hood Lens Protectors (PN 12-03318).

Painting Hood ..... P/N 12-03319 .....$99.95
Hood Lens Protectors ..... P/N 12-03318 .....$24.95

AXIS GUN WITH BOTTOM FEED - QT CUP

Features a heavy duty chrome plated die cast aluminum gun body. The stainless steel needle and nozzle, chrome plated brass air cap, and 6061-T6 anodized aluminum nozzle holder are all CNC machined to tight tolerances. The three position floating air cap offers the ultimate in pattern control. The Pro Series spray gun features and exclusive Teflon packing design for long life and easy adjust-ability. The Pro Series spray gun has no O-rings and is gun washer safe and impervious to all solvents. * Pressurized Cup helps atomize paint better * All Metal Construction * One Quart Bottom Feed Cup * Includes 1.0 Needle/Nozzle.

P/N 12-03321 .....$397.00

QUICK DISCONNECT FITTING

Weight: 0.5 lbs P/N 12-03320 .....$10.75

CITATION 240
PAINT SPRAYER/RESPIRATOR SYSTEM

The Citation HVLP 'twin turbine' system provides both a 'professional quality' paint spray system and the HobbyAir supplied-air respirator in one portable package. This system comes complete with everything you will need to spray exceptionally fine finishes with practcally any material and to breathe in safety and comfort while you work. The basic system includes two 40' airlines (one for breathing and one for painting) and a half face mask. Available options include: A larger two-person Citation system with 3 airlines (two for breathing and one for spraying), Full face masks, and air-supplied hoods. This system comes with an unconditional 1-year warranty. ..... P/N 12-15900..... $997.00
Optional 4 ft. whip hose..... P/N 12-15910..... $19.75

BINKS SPRAY EQUIPMENT

MODEL 2001 AIR SPRAY GUN - This new gun incorporates the best features found in most heavy-duty production guns. The new grip will reduce operator fatigue and improve control. It utilizes the new style fluid nozzle with six air passages. It weighs only 24 oz. and is perfectly balanced. The head is forged brass and the body is anodized forged aluminum alloy. Spray pattern is adjustable from round to fan with a full range of intermediate settings. Air Flow: 8.1 CFM @ 50 PSI with No. 66 fluid nozzle and No. 66SA air nozzle. Air connections - Fluid inlet - 3/8" NPS (m), Air inlet 1/4" NPS (m). All parts replaceable. Made in U.S.A. Furnished with Model 81-350 DRIP-PROOF 1 Qt. attachable siphon cup. Wt. 3.25 lbs.

Model 2001 Gun and Cup.....P/N 12-04000.....$347.95
Gun Only.....P/N 12-04100.....$278.95
Cup Only.....P/N 81-350.....$69.85

BINKS AIR HOSE

5/16" Dia. hose with standard 1/4" NPS connection at both ends.
5/16" Dia. x 25' Long.....P/N 71-1205.....$49.50
5/16" Dia. x 50' Long.....P/N 71-1206.....$105.75
A 5/16" diameter hose is recommended for efficient operation.

STAINLESS STEEL PRESSURE ASSISTED 1 QUART CUP

Bink stainless steel pressure assisted 1 quart cup & attachment.
80-500 cup/lid assembly.....P/N 12-01332.....$191.75
82-367 cup gasket (poly).....P/N 82-367.....$9.75

BINKS MACH 1 HVLP

The Binks Mach 1 HVLP is a siphon-fed refinishing system that performs like your favorite conventional outfit but produces far superior transfer efficiency. A unique arrangement of air nozzle, fluid nozzle, and needle enable the Mach 1 to draw material from a standard siphon feed cup and avoid the need for a pressure cup. Eliminates the need for the operator to set fluid pressures. Delivers lower emissions for compliance with environmental regulations.

P/N	Description	Price
12-04410	MACH 1 Siphon Gun Only	$429.00
98-1176	MACH 1 HVLP Siphon outfit -Spray Gun, 81-375 'No-Drip' Siphon Cup, &83-469 gun brush.	$583.00

1 QUART CUP ASSEMBLE MODEL 81-810

One Quart drip proof cup - clamp type - with a extra vent tube. Shipping weight 16 oz. Fulid inlet: 3/8" nps (f) P/N 12-02457.....$69.50

ZIPGUN REPLACEMENT CUP ONLY - PACKAGE OF 25

Utilizes disposable paper cups as paint reservoirs making color changes possible in seconds. Package of 25 cups. P/N 01-00325.....$6.75

BINKS MODEL 95 SIGNATURE SERIES SPRAY GUN

Model 95 spray gun employs the best features of Binks' most popular conventional air spray guns. This gun delivers higher quality finish, faster production, less operator fatigue, greater fluid compatibility, and more application versatility than any spray gun currently available. Model 95 is a high production gun with stainless steel fluid passages which may be used with most coatings. This new gun replaces Models 18, 62, and BBR spray guns, incorporating the best features of all 3: drop-forged anodized aluminum body, stainless steel fluid passages, adjustable floating needle valve, hardened steel or stainless steel fluid nozzle, plated drop-forged bronze self-centering air nozzle, brass air valve cartridge, adjustable spray pattern, 3/8" NPS (m) fluid inlet, 1/4" NPS (m) air inlet. Weight 1 lb., 11 oz.

Model 95 Hand Gun.....P/N 12-14150.....$382.00
Model 95 gravity feed hand gun with 1-1/3" alum. pint cup P/N 12-04155.....$415.00

THE BEUGLER STRIPER PROFESSIONAL PINSTRIPING TOOL

The Beugler tool makes accurate lines consistently, without gravity or pressure, eliminating the need for tape. The unique serrated wheel and wheel head design are the secret to the striper's success. Ideal for any art project, the Beugler Striper is a professional tool used by auto, truck and motorcycle painters around the world. Beugler's magnetic guide securely holds to any steel surface, allowing the striper's guide arm to slide smoothly along its recessed groove for long, accurate, straight, or arced lines. To ensure customer satisfaction, Beugler also offers a 40 minute video tape or DVD with instructions, tips and demonstrations. The Beugler Striper works well with any "creamy" consistency paint. You can stripe at any angle, as the tool is not gravity fed. Both Professional and Deluxe Kits are of the same quality and include guides, clean up brush, 2/3 oz. paint barrel (which stripes 250 to 1750 feet, depending on stripe size) and complete instructions. Length 4-1/4", O.D. 3/4".

Description	PN	Price
Deluxe Kit (Includes 3 Srtiping Heads)	12-01696	$134.75
Professional Kit (Includes 7 Srtiping Heads)	12-01695	$185.90

WREN AIR BRUSH SET

Model No. 59-10005 includes 1/4, 1/2 and 2-1/2 fl. oz. color bottle assemblies, and 6 ft. plastic air hose with connections, packed in a durable styrene case. The Wren Air Brush is a "must" for retouching, special effects spraying and small parts finishing. Ship Wt. 20 oz
P/N 59-10006.....$173.75

MINI-AIR POWERED VACUUM

Runs off of an air compressor and is simple to use. Just plug it into the air hose using the adapter (included) & start cleaning. The body of the unit is plastic or cast aluminum construction with an 18" clear plastic flex tube that can easily get into tiny spaces to clean. The canvas bag is easily removed. Wt. 8.5 oz.

Mini-Air Vacuum - plastic.....P/N 12-16820.....$31.50
Mini-Air Vacuum - aluminum.....P/N 12-16821.....$54.75
Spare Bag and Clip.....P/N 12-16825.....$7.85
36" Clear Flex Hose.....P/N 12-16830.....$10.75

TO

AOM SPRAY EQUIPMENT

AOM X SERIES GUNS - MAX 29 PSI

6008SSPXX - HVLP Water Base Spray gun, die cast aluminum body, low cfm [4-6], SS fluid passages. Tip sizes available: 1.0, 1.3, 1.4, 1.5, 1.8, 2.0, 2.5
P/N 12-02136 ..... $199.00

66-110 - 1 Qt aluminum cam-lock cup (Order Separate) P/N 12-02137 ..... $28.55

6008 - HVLP Spray gun, drop forged body, for use with pressure pots
P/N 12-02138 ..... $199.00

600817 - HVLP Spray gun, drop forged body, with #66-110 cam-lock siphon cup P/N 12-02139 ..... $233.60

77SSXX - Conventional spray gun with #66-110 camlock siphon cup replace xx with 1.8 or 2.0
1.5 ..... P/N 12-02140 ..... $175.00
2.0 ..... P/N 12-02141 ..... $175.00

6008XX - Fluid nozzle, air nozzle and needle
P/N 12-02142 ..... $90.00

6008RK - Repair Kit ..... P/N 12-02143 ..... $23.85

AOM R 200 - MAX 45 PSI SPRAY GUN

662XX - Low pressure HVLP spray gun only for high efficiency low cfm at 5-7 (Tip sizes available: 1.3, 1.4, 1.5, 1.7, 2.0 2.5)
1.3 ..... P/N 12-02166 ..... $98.75
1.4 ..... P/N 12-02167 ..... $98.75
1.5 ..... P/N 12-02168 ..... $98.75
1.7 ..... P/N 12-02169 ..... $98.75
2.0 ..... P/N 12-02170 ..... $98.75
2.5 ..... P/N 12-02171 ..... $98.75

663XX - Low air consumption HVLP gun with syphon cup low cfm at 5-7. (Replace xx with tip size: 1.7, 2.0, 2.5)
1.7 ..... P/N 12-02172 ..... $113.95
2.0 ..... P/N 12-02173 ..... $113.95
2.5 ..... P/N 12-02174 ..... $113.95

66-110 - 1 qt Cam- Lock Cup
2.0 ..... P/N 12-02137 ..... $28.55

67999 - Seals and springs repair kit ..... P/N 12-02161 ..... $37.75

67-100 - 1 qt Pressurized aluminum cup with check valve and regulator
P/N 12-02177 ..... $92.25

AOM SX SERIES - MAX 30 PSI SPRAY GUN

Gravity spray gun kit 600 cc. aluminum cup, 5 CFM @ 30 PSI

ECO/SX HVLP 62-400 - Spray gun kit includes 3 needle/nozzle sets 1.0, 1.4, 1.7mm, 1 - 600cc aluminum cup, 2 cleaning brushes and wrench in carrying case
P/N 12-02130 ..... $315.00

ECO/SX N/N - aircap kit 1.0,1.2,1.3,1.4,1.7,2.0 (replace xx with tip size)
P/N 12-02131 ..... $90.00

K1/SX HYBRID 62-450- high transfer efficiency Spray gun kit. Includes same as above
P/N 12-02132 ..... $295.00

K1/SX N/N - aircap kit 1.0,1.2,1.3,1.4,1.7,2.0 (replace xx with tip size)
P/N 12-02133 ..... $89.95

REPAIR KIT - P/N 12-02134 ..... $18.50

ALUMINUM GRAVITY CUP - 1000 cc (35 oz)
P/N 12-02135 ..... $28.50

AOM ECO/MINI HVLP GUN KIT - MAX 43 PSI

61- 210 - HVLP Mini Gravity Gun Kit includes 200cc aluminum cup, 4 glass jars, 5' air hose with quick disconnect, filter, 2 adapters, cleaning brush and wrench in carrying case.
This unique kit has all the necessary parts to convert from a Mini Gun to an Air Brush
P/N 12-02144 ..... $190.95

61-2006XX - Fluid nozzle, air nozzle and needle -(replacexx with 0.8, 1.0, or 1.2 for tip size)
0.8 ..... P/N 12-02145 ..... $51.75
1.0 ..... P/N 12-02146 ..... $51.75
1.2 ..... P/N 12-02147 ..... $51.75

61-210SE - 200cc Nylon Cup ..... P/N 12-02148 ..... $18.90
61-220SE - 200cc. Aluminum Cup ..... P/N 12-02149 ..... $19.50
61-2000R - Repair kit ..... P/N 12-02150 ..... $18.50
828-GTXX - Glazing nozzle kit c/o fluid nozzle, air nozzle and needle. (Complete for both sprayable and non sprayable materials) replace xx with 1.0 or 1.5
1.0 ..... P/N 12-02153 ..... $84.60
1.5 ..... P/N 12-02154 ..... $84.60

AOM F1/S CONVENTIONAL SPRAY GUN

This Gravity Gun is ideal for applying a wide range of materials such as Primers, Fillers, and Virtually all Wood Coatings

28XX - Gravity Gun with 750 cc. aluminum cup with nylon cover P/N 12-02228 ..... $129.75

29XX - Fluid nozzle, air nozzle and needle replace xx with 1.0, 1.2, 1.4, 1.5, 1.6, 1.8, 2.0, 2.2, 2.5MM
P/N 12-02225 ..... $40.00

28-RK - Seals and springs repair kit for E70
P/N 12-02231 ..... $27.50

AOM 1 QUART PRESSURIZED CUP (HVLP)

RP-XX - R200 HVLP spray gun, pressurized aluminum camlock cup, regulator and check valve (replace xx with tip size. 1.3, 1.4, 1.5, 1.7, 2.0, 2.5) This outfit is perfect for small painting jobs that require precise fluid control. Can spray thicker material. Maximum cup pressure 10 PSI
1.3 ..... PN 12-02180 ..... $267.95
1.4 ..... PN 12-02181 ..... $267.95
1.5 ..... PN 12-02182 ..... $267.95
1.7 ..... PN 12-02183 ..... $267.95
2.0 ..... PN 12-02184 ..... $267.95
2.5 ..... PN 12-02185 ..... $267.95

AOM F1/I CONVENTIONAL SPRAY GUN

30XXSSP - Pressure fed spray gun only with 3/8:" fluid inlet P/N 12-02224 ..... $115.00

31XX - Fluid nozzle, air nozzle and needle replace xx with 1.0, 1.2, 1.4, 1.5, 1.6, 1.8, 2.0, 2.2, 2.5, 3.0mm.
P/N 12-02225 ..... $40.00

66-110 - 1 Qt. Cam-lock cup
P/N 12-02137 ..... $28.55

28RX - Seals and spring repair kit for G70/A or SSP (Sold Separately) P/N 12-02227 ..... $15.50

AOM 77 CONVENTIONAL SPRAY GUN

Ultra compact and light spray gun featuring a reduced air consumption. 1 qt. cam-lock cup

77SXX - 77S Spray gun with standard cam-lock cup replace xx with 1.5, 2.0 mm
P/N 12-02236 ..... $185.00

77SSPXX - 77 SSP Spray gun only. Replace xx with 1.5, 2.0mm P/N 12-02237 ..... $227.95

77XX - Fluid nozzle, air nozzle and needle for 77 (replace xx with nozzle size)
P/N 12-02238 ..... $90.00

77SRK - Seals and springs repair kit for 77
P/N 12-02239 ..... $18.50

66-110 - 1 qt. aluminum cup with cam-lock
P/N 12-02137 ..... $28.55

WATER BASE HVLP GRAVITY FEED SPRAY GUN

Water base HVLP Gravity Feed spray gun with 600cc Nylon cup. Features: High transfer efficiency with low air consumption. Provides wide fan pattern with superior atomization. Environmentally friendly. Die cast aluminum gun body. Stainless steel fluid nozzle & needle. Stainless steel fluid passages P/N 12-02712 ..... $298.95

AOM PQ CUP GUN

99518 - PQ Cup Gun Economical high pressure air spray gun P/N 12-02242 ..... $49.75

AOM SPRAY GUN CUP KIT

Model DC190-24 Kit contains 24 Soft Liners 750cc/25oz, 24 collars, 24 lids w/Filters 190 Mesh (Used with DC 191 Hard Cup).
P/N 12-03322 ..... $48.00

THE Q SERIES HVLP TURBINE SPRAYER

PRO 3 - 110V, 3 Stage turbine unit, 101 CFM @ 6 PSI comes with gun, cup, 25' hose and coupler. Perfect for cabinet makers, furniture refinishers and most trades. Spray cabinets, furniture, autos or pianos.
P/N 12-02108 ..... $1,049.00

PRO 4 - 110V, 4 Stage turbine unit comes with gun, cup, 25' hose and coupler. The most powerful 4 Stage available. Perfect for paint contractors spraying Latex house paints, cabinet makers, furniture refinishers and most trades P/N 12-02109 ..... $1,129.00

XT 2 - Turbine spray gun & cup P/N 12-02110 ..... $395.00

WARRANTY: All systems 24 months -Parts & Labor

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AOM SPRAY EQUIPMENT

AOM DUAL ACTION AIRBUSH KIT

AB1104C WA -
* Double action trigger for air-paint control
* Precision machined nozzle and fluid cap
* Suitable for graphic artwork
* Fluid nozzle: 0.5 mm

P/N 12-02217 ..... $94.65

AB1117K -
* Double action trigger for air-paint control
* Precision machined nozzles-air and fluid cap
* Suitable for graphic artwork

Contains: 1 - Airbrush, 1 - Hose, 1- Wrench 1 - Jar Adapter, 1 - 5 cc. Paint cup Fluid nozzles - 1 of 0.3, 0.5, 0.7mm 2 - 22cc glass jar, 1 - 50 cc glass jar.

P/N 12-02218 ..... $158.75

AB1134K - Gravity air brush, double action trigger for air-paint control, precision machined nozzles -air and fluid . Color Applied- watercolors,acrylics,dyes and inks. Contains: 1 x Airbrush, 1 x 8.6'Hose, 1 x Wrench, Fluid Nozzle - 1 x 0.3mm, 1 x 0.5mm, 1 x 0.7mm, Metal cups - 1 x 2cc, 1 x 5cc w/lid, 1 x 13cc w/lid. P/N 12-02566 ..... $192.00

AB1117C - Double action trigger for air-paint control, precision machined nozzles -air and fluid, suitable for graphic artwork. 0.5 bottom feed with glass jar

P/N 12-02219 ..... $114.75

AOM MINI AIR BRUSH COMPRESSOR

AC16 1/6 HP Mini air brush compressor (Piston Type) with filter, micro switch and 10' retractable air hose (Airbrush Not Included)

P/N 12-02221 ..... $185.00

AOM 2-1/2 GAL PRESSURE POT OUTFITS

659126008 - 2-1/2 Gallon pressure pot outfit includes a 2-1/2 gallon pressure pot dual regulated 1.4 X series spray gun (also available in 1.3, 1.5, 1.8, 2.0) and 25' 1/4" air and fluid hose with fittings. This outfit is perfect for small to medium production facilities. Suitable for glues, lacquers, stains, water based and solvent based materials. OPTIONAL: 5/16" air hose and 3/8" fluid hose available on request at an additional cost. P/N 12-02191 ..... $594.75

65-914 GASKET - Replacement gasket for 2 1/2 gal. tank

P/N 12-02119 ..... $21.75

AOM PRESSURE TANKS 2 QT. REMOTE

75-111 - 2 qt remote pressure tank, single regulator, safety relief valve, handle, lightweight, SS pick up tube, Screw type top. Dual regulated available.

P/N 12-02111 ..... $114.75

75-111S - Large Mouth 2 qt. remote pressure tank, teflon coated inside, single regulator, safety relief valve, handle, lightweight, screw type top. Dual regulated available.

P/N 12-02112 ..... $149.95

65-424/1 - Replacement gasket for 2 qt large mouth remote pressure tank P/N 12-02114 ..... $19.85

75-111SS - 2 qt all stainless steel remote pressure tank, single regulator, safety releif valve, handle, lightweight, screw type top.

P/N 12-02115 ..... $575.00

75-112SS - Replacement gasket for 2 qt all stainless steel remote pressure tank P/N 12-02116 ..... $19.25

AOM PRESSURE 2-1/2 GALLON TANKS

65-911 - 2-1/2 gal. pressure tank, single regulator, Teflon coated inside and outside Safety relief valve, pick-up tube with filter, wide lid and low side walls, large wheels for easy movement. P/N 12-02117 ..... $280.95

65-912 - Same as above with dual regulators

P/N 12-02118 ..... $320.00

65-914 - Replacement gasket for 2 1/2 gal. tank

P/N 12-02119 ..... $21.75

AT2.5ASS - 2.5 gal pressure tank, air agitator, stainless steel inner liner, dual regulators, stainless steel fitted.

P/N 12-02120 ..... $850.00

65-0097 - Complete regulator assembly for 2 1/2 gal tank P/N 12-02121 ..... $44.85

65-0098 - Complete second regulator assembly for 2 1/2 gal tank only

P/N 12-02122 ..... $44.85

65-0099 - Double regulator assembly for 2 1/2 gal tank

P/N 12-02123 ..... $89.50

AOM ACCESSORIES

AOM AIR BRUSH HOSE MCR011 - 10' Air brush hose 1/4"F X 1/8"F P/N 12-02220 ..... $20.85

AOM GUN HOLDER RP 8413 - Gravity gun holder

P/N 12-02216 ..... $14.50

AOM DISPOSABLE LINERS - Disposable Liner round bottom fits # 65-911 & # 65-912 (10pk)

P/N 12-02124 ..... $36.75

Disposable Liner flat bottom fits # AT2.5ASS tank (12pk)

P/N 12-02125 ..... $42.85

Disposable Liner round bottom fits 5 gal pressure tanks (24pk)

P/N 12-02127 ..... $126.95

2 1/2 & 5 gal. bag tank liners 4 mil. (10 pk)

P/N 12-02128 ..... $35.00

AOM HARD CUP KITS - Can be mounted on any AOM spray gun.

DC 195-12 - Kit contains 12 Soft Liners, 12 Rings, 12 Lids w/Filters, 12 Caps, 1 Hard Cup and 1 Adapter

P/N12-02203 ..... $71.85

DC 195-12 - Kit contains 12 Soft Liners, 12 Rings, 12 Lids w/Filters, 12 Caps (Used with DC 191 Hard Cup)

P/N12-02204 ..... $48.00

DC 190-48 - Kit contains 48 Soft Liners, 48 Rings, 48 Lids w/Filters, 48 Caps (Used with DC 191 Hard Cup) P/N12-02205 ..... $130.00

DC 191 - Hard Cup (750 ml capacity) P/N12-02206 ..... $16.00

DC 192 - Adapter used with all AOM gravity guns (except Mini gun)

P/N12-02207 ..... $14.00

DC 193 - Adapter used with all AOM pressure guns

P/N12-02208 ..... $14.00

DC 194 - Shaker Cap P/N12-02210 ..... $7.50

12-02213

SPRAY GUN ACCESSORIES

68-9637 - Air regulator w/gauge, 1/4"F swivel connection & 1/4"M NPS connection P/N 12-02213 ..... $16.80

68-9638 - Mini air regulator w/gauge, 1/4" F swivel connection & 1/4"M NPS connection

P/N 12-02214 ..... $36.80

61-2031 - Air adjustment Valve P/N 12-02215 ..... $9.90

AOM QUICK COUPLERS -

41106 - 1/4" Brass Male thread

P/N 12-02196 ..... $16.95

41156 - 1/4" Brass Female thread

P/N 12-02197 ..... $16.85

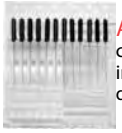
AOM QUICK CONNECTORS -

42200 - 1/4" Brass High Flow male..... P/N 12-02198 ..... $2.50

45600 - 1/4" Brass Std. flow male ..... P/N 12-02199 ..... $2.50

42300 - 1/4" Brass High Flow female..... P/N 12-02201 ..... $2.50

45700 - 1/4" Brass Std. flow female..... P/N 12-02202 ..... $2.50



AOM MAINTENANCE KIT - Spray gun maintenance kit includes 12 special steel cleaning needles. Perfect for removing dry paint particles from air cap and nozzle as well as all difficult to reach gun parts.

P/N 12-02107 ..... $39.95

AOM SPRAY GUN LUBE 811-12 - Spray gun lube 12 pcs/Counter Display Box P/N 12-02211 ..... $43.85

AOM 22 PC DELUXE SPRAY GUN CLEANING KIT KK814 - 1 - Extra long 12" Pick-up Tube Brush 1 - 1/4" HVLP Brush 1 - 1/2" Body Cavity Brush 1 - Detail End Brush 2 - Nylon - Bristol Parts Brush 5 - Miniature Brush Set 6 - Precision Needle Set 1 - O-ring Removal Tool. P/N 12-02212 ..... $35.85

TO

TIG TORCHES - TIG WELDERS - WELDING CARTS

ASK MISTER TIG DVD

Learn how to tig weld with the best!! Mister Tig (Wyatt Swaim-30 years of aerospace welding experience) will teach you the fundamentals and launch your tig welding training. This 34 minute DVD will teach you the proper torch angle, tungsten preparation, tungsten stick-out, and th eproper "dabbing" of the filler rod technique. This instructional DVD will help you set up your machine for the correct procedures including aluminum (alternating current), and 4130-cro-mo (DC-).
The DVD is also packed with tig information and is designed for the beginner tig operator and will even help the intermediate operator.

P/N 13-05751 ..... $26.75

TIG CALCULATOR

Just tell it what material you're welding, the thickness, and type of weld (butt, lap, etc.), and it will give you information concerning your weld such as travel speed, number of passes needed, tungsten type and size, what amperage to run, and speed of welding. Slide rule style. P/N 12-00444 ..... $8.90

TIG TORCHES & REPLACEMENT CABLES

PTA-9F - Air-cooled TIG torch, rated 125 amps at 60% duty cycle. Includes a 12-1/2 foot Superflex Cable. Equipped with a flexible head for easy maneuverability into tight places.
P/N 12-00391 ..... $153.95

REPLACEMENT CABLE - 12-1/2 foot Superflex replacement cable for the PTA-9F P/N 12-00399 ..... $59.75

PTA-17H - Air-cooled TIG torch, rated 250 amps at 60% duty cycle, heavy duty. Equipped with a 12-1/2 foot Superflex Cable P/N 12-00392 ..... $296.95

REPLACEMENT CABLE - 12-1/2 foot Superflex replacement cable for the PTA-17H P/N 12-00401 ..... $84.75

TIG TORCH ACCESSORY KITS

9GL KIT - TigDepot Parts Kits provide all the torch accessories you need to start welding. Parts Kits provide collets, collet bodies, a back cap, alumina nozzles and tungstens in a variety of sizes, all packaged in an easy to carry reclosable box.
The 9GL-Kit comes with .040, 1/16, 3/32 Collets, Gas Lens Collet Bodies, Gas Lens Nozzles, (#5, #6, #7), a long Back Cap, and an assortment of 2% Thoriated and Ceriated Tungsten in a convenient plastic box. For the 9 Series torches P/N 12-00393 ..... $63.75

17H-GL KIT - The TigDepot 17H Gas Lens Kit is made specifically for the 210 Amp 17H Torch. The Kit includes One of each: • 2% Thoriated Tungsten .040, 1/16, 3/32 DIA. • Alumina cups #5,6,7 • Gas lens .040, 1/16, 3/32 • Collets .040, 1/16, 3/32 • Backcaps-short,medium, long • Insulator • Tool box PN 12-00394 ..... $79.95

TIG BUZZ BOX KIT

TIG weld Aluminum, Stainless Steel,Chrome Moly, and many other metals. Plug it directly into your standard household outlet (110 volts, 15amps). Kit includes: • CK9 Rigid Torch w/Valve and 12.5' one piece cable with male dinse connector. • Flowmeter Regulator • Adapter Plug with 1' extension cord • Female Dinse to allow you to go back and forth to stick welding. • AK-4 Accessories Kit • AMP Conversion Decal • Instruction Manual P/N 12-00389 ..... $271.95

PRECISION TIG 275

With NEW patented Micro-Start II™ Technology and our New and Improved AC Auto Balance® on board, the Precision TIG® 275 delivers unrivaled starting and welding at low amperages and improved AC aluminum welding performance. Includes: Precision TIG® 275 (208/230/460/1/60), Under-Cooler Cart Water Cooler, Foot Amptrol, Harris® Argon/Helium Flowmeter Regulator and 10 ft Hose (3100338), PTW-20 Pro-Torch™, TIG Torch (250 amp, 25 ft.), Zippered Torch Cover, Parts Kit, Water Hose (2 included), 15 ft. 2/0 Work Cable and ClampWeight:397 lbs. (180 kgs.) Dimensions (in) H x W x D : 31 x 22 x 26 P/N 12-00769 ..... $3,428.00

PRECISION TIG 275 READY-PAK PKG 208/230/460/1/60

Includes: Precision TIG® 275 (208/230/460/1/60) Under-Cooler Cart Water Cooler, Foot Amptrol, Harris® Argon/Helium Flowmeter Regulator and 10 ft Hose (3100338), PTW-20 Pro-Torch™ TIG Torch (250 amp, 25 ft.) , Zippered Torch Cover, Parts Kit, Water Hose (2 included) , 15 ft. 2/0 Work Cable and Clamp. Weight:641 lbs. (291 kgs.) Dimensions (in) H x W x D : 49.7 x 28 x 41 P/N 12-02249 ..... $5,549.00

TIG WELDERS / WELDING EQUIPMENT

INVERTEC V155-S TIG READY-PAK - Weighing in at just under 15 lbs. (6.8 kg) it is no lightweight contender. It packs the full punch of a heavyweight professional that you can take to the most demanding jobs. With 120/230V auto reconnect operation, it can operate from a portable generator. It can also plug into a 200 foot (61 m) 230V extension cord (not included) so you can weld just about anywhere. The Dent resistant case is IP23 rated for outdoor use. P/N 12-01978 ..... $1,195.00

PRECISION TIG 225 READY PAC - Unit Includes: Precision TIG 225, Torch Parts Storage Compartment, Torch Hanger, 10 ft. Work Cable and Clamp, Removable Lift Eye, 9 ft. Input Power Cord, NEMA 6-50P Plug, NEMA 6-50R Receptacle, TIG Procedure Guide, GTAW (TIG) Handbook, PTA-17 Pro-Torch TIG Torch (12.5 ft., 1-piece), Gas Regulator with Hose, and Foot Amptrol® (K870). Shipped fully assembled. Shielding gas sold separately. ..... P/N 12-01634 ..... $2,641.00
TIG 225 With Understorage Cart ..... P/N 12-01635 ..... $2,796.00

POWER MIG 140C - Power MIG® 140C (K2471-1)with continuous voltage control for more critical projects where precise adjustment is required. Diamond Core Technology™ and the rugged drive system aid arc performance for MIG welding on thin gauge steel, stainless and aluminum. Or, use gas-less flux-cored welding for deep penetration on thicker steel, even outdoors! With a wide 30-140 amp welding output range it is the highest output in 120 volt input power welder class. MIG weld 24 gauge up to 10 gauge (.135") sheet metal in a single pass. Includes: • Magnum 100L welding gun (K530-6) • Six spare contact tips • Gas and gasless nozzles • Work cable and work clamp • Adjustable gas regulator and hose •.025 and .035 smooth drive rolls •.030-.045 knurled drive roll •.025-.035 wire guide • 2 lb. spool .025" Super Arc® L-56 wire • 1 lb. spool .035" Innershield® NR-211-MP self-shielded flux-cored wire • 8" spool spindle adapter • How to Use DVD. P/N 12-01623 ..... $787.00

V205-T AC/DC INVERTEC - For TIG and Stick Welding. Ideal for critical AC or DC TIG Welding applications. Variable AC frequency allows you to focus the arc when precise arc control is required. The 115/230V auto-reconnect makes the V205-T AC/DC truly flexible. The unit comes with a 10 ft. 230V input cord and plug; a Twist-Mate Torch Adapter for 9 and 17 Series one piece torches; Twist-Mate adapter for work cable; and adjustable shoulder strap. This full featured TIG Welder is also capable of Stick Welding. P/N 12-00384 ..... $3,795.00
One-Pak™ Package Includes: V205-T Foot Amptrol (K870) and TIG-Mate 17 Starter Kit. Assembly required. P/N 12-00776 ..... $3,665.00

AC-225 COMPACT STICK WELDER - Produces an extremely smooth AC arc for welding a wide variety of materials including carbon, low alloy, and stainless steels as well as cast iron. Input Power - 230/1/60. Rated Output - 225A/25V/20% Duty Cycle. Input Current @ Rated Output - 50A. Output Range - 40-225 Amps (Max OCV: 79V). Weight/Dimensions (H x W x D) - 109 lbs. (49.5 kg). 24.0 x 17.25 x 12.0"
P/N 12-02683 ..... $514.00

SP-140T WELDER - 120 Volt AC Input Compact Wire Welder. Requiring common 120 volt input power, the SP-140T can be used almost anywhere. With simple two knob tapped control, the machine is easy to set up for gas-less flux-cored welding for deep penetration on thicker steel or gas-shielded MIG welding on thin gauge steel, stainless or aluminum. Compare the precise drive, rugged construction and full list of standard accessories. Lincoln SP-140T is an excellent choice! P/N 12-02684 ..... $669.95

TO

TIG WELDING EQUIPMENT & ACCESSORIES

WELDING CARTS

These Welding carts are for the Invertec V-155, Invertec V-205T AC/DC, Procut 25 Plasma Cutter, and Power MIG 140C.

K520 WELDING CART - (150 cu.ft. bottle capacity) Accommodates power source, gas cylinder, tools and welding accessories. Dimensions (HxWxD): 30 (min.)/34 (max.) x 18 x 35 inches. Weight:38 lbs. (17.2 kgs.)
P/N 12-00773 ..... $229.00

K2275-1 WELDING CART - (80 cu.ft. bottle capacity) Full-featured cart is designed to store and transport a welder, 80 cubic foot gas cylinder, welding cables and accessories. Replaces K520. Weight:24.75 lbs. P/N 12-00777 ..... $97.50

MAGNETIC UNI-JIGS

Magnetic holders for hands-free support in a variety of applications. Designed to last a life time. Each angle is screwed (not riveted) completely through the magnet to insure proper angles.
Small (supports up to 45 lbs.) P/N 12-05185 ..... $7.95
Large(supports up to 80 lbs.) P/N 12-05186 ..... $17.95

HARRIS MODEL 15 CLASSIC TORCH HANDLE

The Model 15 is a lightweight, aircraft style featuring a forward valve designed to permit changing flame serttings with one hand. For welding, heating and brazing with fuel gases. • Class A 3/8"-24 hose connection • Cap: Cuts 2", welds to 5/16" • UL listed • Length: 5-3/4", Wt: .5 lbs.

Torch Handle ..... P/N 12-00687 ..... $302.00

B-15-3 Mixer ..... P/N 12-00688 ..... $91.75

Welding Tip ..... P/N 12-00689 ..... $19.50

Torch Handle Kit - Torch, Mixer and Tip
P/N 12-00690 ..... $412.95

TIG TUNGSTEN

Sold in packages of 10

2% Thoriated
1/16 ..... P/N 12-00438 ..... $14.85
3/32 ..... P/N 12-00439 ..... $32.85

2% Ceriated
1/16 ..... P/N 12-00440 ..... $14.95
3/32 ..... P/N 12-00441 ..... $32.70

Pure
1/16 ..... P/N 12-00442 ..... $14.60
3/32 ..... P/N 12-00443 ..... $39.90

TIG FILLER MATERIALS

36" Cut Lengths are packaged in 1 lb. tubes to provide you the flexibility of buying only what you need for your job.

Base Material	Use Filler	Size	Part No.	Price/Lb.
4130	ER80S-D2	.035	12-00473	$13.40
4130	ER80S-D2	.045	12-00474	$11.80
4130	ER80S-D2	.062	12-00475	$9.90
4130	ER70S-2	.035	12-00477	$13.60
4130	ER70S-2	.045	12-00478	$12.85
4130	ER70S-2	.062	12-00479	$9.90
Aluminum	ER4043	.045	12-00480	$25.50
Aluminum	ER4043	.062	12-00481	$14.70
Aluminum	ER5356	.045	12-00482	$26.40
Aluminum	ER5356	.062	12-00483	$13.50
Stainless Steel	ER312	.035	12-00484	$36.40
Stainless Steel	ER312	.045	12-00485	$29.90
Stainless Steel	ER312	.062	12-00486	$22.75
Stainless Steel	ER308L	.035	12-00487	$28.65
Stainless Steel	ER308L	.045	12-00488	$25.50
Inconel	NICKEL 625	.035	12-00490	$122.95
Inconel	NICKEL 625	.045	12-00491	$138.95
Super Alloys	ALLOY W	MKT	Special Order	Call
Titanium	TITANIUM	MKT	Special Order	Call
Magnesium	TITANIUM	MKT	Special Order	Call

BRAZING AND SILICON BRONZE

.062 ..... P/N 12-00470 ..... $20.75

UNDERSTORAGE CART

Adds easy shop mobility and provides shielding gas bottle platform, handy storage drawer and two filler rod holders. P/N 12-00764 ..... $306.00

STICK ELECTRODE HOLDER AND CABLE

Includes twist-mate connector. 12.5 ft. cable length. P/N 12-00765 ..... $50.75

SMALL OXY-ACETYLENE KIT

With regulators. Designed for hobby, crafts, plumbing, etc. Braze and solder material from the thinnest up to 1/8" thick steel, melt up to 3 oz. silver. Provides stable and precise concentrated feather flame up to 6000°F for various materials such as metals, ceramics, and glass. P/N 12-00447 ..... $242.95

CUTTING TORCH ATTACHMENT

Cuts up to 3". Spiral tube mixer design optimizes the mixture of fuel and oxygen. Stainless steel tubes and lever. "A" hose fitting, 3/8"-24 thread.
P/N 12-00448 ..... $102.50

BOTTLES AND TOTE

Plastic Stand, Oxygen and Acetylene Cylinders - Plastic Cylinder Stand holds "MC" Acetylene Cylinder and "R" Oxygen Cylinder.

Plastic Cylinder Stand
P/N 12-00449 ..... $28.95
"MC" Acetylene Cylinder (Empty)
P/N 12-00451 ..... $93.75
"R" Oxygen Cylinder (Empty)
P/N 12-00452 ..... $91.25

COW HIDE GLOVES

These are a good import, not too stiff.
P/N 12-05155 ..... $4.75

38" LEATHER WELDING APRON

Quick release buckle and cross straps make it very comfortable; it also has pockets. P/N 12-05160 ..... $22.50

3M SPEEDGLAS BLAZED WELDING HELMET 100

3M™ Speedglas™ 100 Welding Helmets deliver outstanding protection, comfort and performance with distinctive graphic designs. Welders can benefit from its excellent optical quality and reliable light-to-dark switching at a highly affordable price. The Speedglas 100 welding helmet can be used with most arc welding processes, such as stick (MMA), MIG/MAG and TIG applications greater than 10 amps. It's also the ideal "entry-level" auto-darkening helmet for occasional users, such as hobbyists, farmers and maintenance or construction workers. P/N 12-02695 ..... $228.95

FULL FACE SHIELD

Lightweight headgear, shield flips down over prescription glasses. Good over bifocals. P/N 12-05175 ..... $19.50

WA-GOGGLE

Gas welding goggle with adjustable headrest that pulls out and down. Permits easy use of eyeglasses. 2 x 4 lens. P/N 12-05165 ..... $56.50

OXY-ACETYLENE HOSE

3/16" hose that may be used with all welding outfits.

B-B FITTING - 12' ..... P/N 12-05916 ..... $9.40
25' ..... P/N 12-05917 ..... $17.95

A-B FITTING - 12' ..... P/N 12-05918 ..... $23.75
25' ..... P/N 12-05919 ..... $25.75

TWO-IN-ONE 'R' GRADE HOSE FOR ACETYLENE

Green Hose: Oxygen. Red Hose: Acetylene. Length: 12-1/2" (3.8m). Diameter: 3/16" (5mm). Weight: 2-1/2 lbs (1.1kg). Use with AW Torch Series. "A" 3/8-24 & "B" 9/16-18 Hose Fittings. ..... P/N 12-01198 ..... $17.50

HENROB 2000 IV WELDING TORCH

Ideal welding torch for aircraft construction. Allows less oxidation. minimal flux, reduced pressures and substantial materials savings. Fewer tips are required and hose fatigue is lessened. Perfect for steel and aluminum welding and cutting. Formerly known as the Dillon Mark III.
P/N 12-16000 ..... $468.00
Henrob Instructional Video ..... P/N 12-05150 ..... $17.80

PORTASOL CORDLESS BUTANE SOLDERING TOOL KIT

Contains four different tools. Simple tip/accessory installation allows you to convert into a soldering iron, blow torch, hot blower or hot knife within seconds. Quickly cut and seal repairs on dacron, mylar and nylon. Cordless, go-anywhere versatility, 90 minute continuous use capacity, refills in 20 seconds with standard butane lighter fuel, and full 2 year warranty. P/N 12-20600 ..... $74.75

TIG-MATE 17 AIR-COOLED TIG TORCH STARTER PACK

One complete easy-to-order kit packaged in its own portable carrying case. Includes: PTA-17 torch, parts kit, Harris flowmeter/regulator, 10 ft. gas hose, Twist-mate™ adapter, work clamp and cable. P/N 12-00767 ..... $346.00

TO

WELDING EQUIPMENT – PARTS CARTS

SMITH WELDING OPTIONAL EQUIPMENT

SERIES 30™ TWO STAGE REGULATORS

H1421A-510 for Acetylene, 0-15 PSI
P/N 12-01186.....$216.95
H1410A-540 for Oxygen, 0-150 PSI
P/N 12-01185.....$199.85
For the professional. Heavy duty, w/check valves.

AC309 AIRLINE™ - STANDARD DUTY CUTTING ATTACHMENTS - Cutting capacity up to 3" thick (76mm) steel. Head Angle 90° USE IN: Torch Handles - AW1A, AW10A. P/N 12-01082.....$169.85

CUTTING TIP - Slip-in cutting tips for general medium duty hand cutting. Use with medium pressure acetylene and oxygen. USE IN: Cutting Attachments - DG109A, MC505, MC509, CC509P (all sizes); AC309 (Maximum tip size MC12-4).
P/N 12-01192 ..... $17.85

HUNTSMAN FACE SHIELD - Dark green plastic window 8" x 11-1/2" snaps onto lightweight plastic adjustable headband. Permits full peripheral vision during work. Protects against radiation - flip up visor when not in service.
Headband - Model K.....P/N 12-05000..... $15.75
Visor.....P/N 8124D.....$5.50
Complete Shield.....P/N 12-05100..... $21.25

HUNTSMAN ELECTRONIC WELDING HELMET
Call for prices and information on the new Huntsman Autoview Welding Filters which provide uncompromising eye protection.

TIP CLEANER SET - 13 cleaners for #49 - #75 drill size orifices. P/N 12-01195 ..... $15.50

SINGLE STAGE REGULATORS
Gas Used: Oxygen Delivery Pressure: 0-100 PSIG, 0-7 Bar .....P/N 12-19300 ..... $84.75
Gas Used: Acetylene Delivery Pressure: 0-15 PSIG, 0-1 Bar .....P/N 12-19400 ..... $108.75

STANDARD DUTY TORCH HANDLE - Inlet connections 3/8"- 24 right and left hand, fit "A" size hose nuts. Cuts up to 3" (76mm), welds up to 1/2" (13mm). Covered by the LIFETIME Warranty & Service Agreement. USED WITH: Cutting Attachment - AC309. Welding Tips - AW200 Series, AW400 Series. P/N AW1 ..... $131.95

AW200 AIRLINE™ SERIES OXY-ACETYLENE - USE IN: Torch Handles - AW1A & AW10A.

For Metal Thickness Up To	Part No.	Price
1/32"	AW201	$42.50
1/2"	AW203	$39.75
1/8"	AW205	$36.90

ONE SINGLE FLINT LIGHTER -
P/N 12-01194.....$1.59
Box of five Extra Flints for Lighter
P/N 12-01193.....$4.35

TWIN HOSE - 12-1/2 Ft. (3/16" I.D.)P/N RA921 ..... $17.50

TIP CLEANERS

Quality aluminum case with rustproof stainless steel wire. The long spiral cleans a large number of tip styles. A hardened steel file included in each case.
P/N 12-05180 ..... $2.95

BULLDOG RED WELDING DAMAGE CONTROL CLOTH

This heavy duty red cloth is made from .015" thick fiberglass with a Hypercote finish. It resists abrasion and liquids, cuts without fraying, is electrically non-conductive and chemical resistant, and drapes easily. P/N 12-19500..... $14.90/lineal yd.

SILVER PENCILS

The best way to mark tubing. Will not corrode tubing and shows up well on greasy tubing. May be used to mark exhaust system without lead cracking P/N 12-05190 ..... $4.35

INNOVATIVE PARTS CARTS

Keep parts and pieces from taking off. Cut clutter and down time. ..... Everyone needs one or more - at work or at home, innovative parts carts people become very attached to their parts carts. They 're virtually indestructible. Make users more efficient, productive and better organized - plus they're good looking and customizable.

INNOVATIVE PARTS CART A™

* Industry's easiest-nesting /catalog. * Perfect size for "lighter-hit" jobs. * Makes a great portable workstation. * High-carbon, heat-treated steel shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off. * Four industrial grade total-lock caster wheels for mobility; zero movement when locked. * Durable powder coat finish stays new-looking longer. * Shown with optional Shelf Mat. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 31"D x 44"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: * 2 adjustable shelves * 2 adjustable support arms * 2 bungee cords * 6 metal hooks * 73 lbs.
PN 12-02023.....$288.95

INNOVATIVE PARTS CART B™

* Industry's easiest-nesting /catalog * 30% more shelf positions that any other parts /catalog. * High-carbon, heat-treated steel shelf brackets for yeas of trouble-free use. * All shelves have upper side rails to prevent parts slide-off * Four industrial grade total-lock caster wheels for mobility; zero movement when locked. * Durable powder coat finish stays new-looking longer. * Assembles in less then 20 minutes. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 31"D x 75"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: o 3 adjustable shelves o 2 adjustable support arms o 2 bungee cords o 6 metal hooks * 92 lbs.
PN 12-02024.....$364.00

INNOVATIVE PARTS CART C™

* Easiest shelves in the industry to adjust. * Provides 32 sq. ft. of shelf space! * High-carbon, heat-treated shelf brackets for years of trouble-free use. * All shelves have upper side rails to prevent parts slide-off. * Durable powder coat finish stays new-looking longer. * Shown with optional RO Holder. * U.S. Patent #7,314,413 * Other Patent Pending. * 42"W x 50"D x 75"H * Shelves measure 40"W x 24"D * Shelves adjust every 3" * Weight rated to 125 lbs. per shelf * Includes: o 6 adjustable shelves o 4 adjustable support arms o 2 bungee cords o 6 metal hooks * 152 lbs..... PN 12-02025 $518.95

TO

SPACE DRYERS – BLASTING SYSTEMS

H2OUT PORTABLE SPACE DRYERS

H2Out™ Space Dryers are small portable dehumidifiers that keep interiors dry and fresh. Packaged in a stainless steel canister, they are easily renewed by placing in an oven for 1-2+ hours at 300°, and can be used over and over again. This technology prevents water damage, condensation and contamination - preventing mold, mildew and oders.
H2Out™ is not messy or corrosive like the old fashioned product in a bucket. Protect your valuables from moisture damage, rust and corrosion. Perfect for your: Plane, Tool Box, Tackle Box, Boat, RV, Car even the Freezer.

SD103 Also for areas the size of a kitchen cupboard. 5 Cubic feet of protection. P/N 12-03378 .....$23.95

SD106 Also for areas the size of a pickup truck, gun safe or take this camping and keep your gear dry. 20 Cubic Feet of Protection.
P/N 12-03379 .....$33.50

SD109 Protects areas the size of your car or truck, cargo holds and home closets. 125 Cubic Feet of Protection.
P/N 12-03380 .....$43.95

SD303 Also for areas the size of a truck camper, bathroom, refrigerator or large safe. 250 Cubic Feet of Protection.
P/N 12-03381 .....$49.95

SD306 Protects areas the size of your car or truck, cargo holds and home closets. 500 Cubic Feet of Protection.
P/N 12-03382 .....$69.95

SD309 Our best seller! Also for your storage unit, garage and in your home. 750 Cubic Feet of Protection. P/N 12-03383 .....$89.95

VAC BLAST PORTABLE VACUUM BLASTER

This portable 28-gallon vacuum unit blasts, removes and recycles abrasives in one operation. It works with glass beads, aluminum oxide, steel grit, garnet, plastic grit, walnut shells, corn cobs and more. Rolls easily on 6-inch wheels. What's included: (1) 28-gallon vacuum blaster (1) 8-ft. air and vacuum hose (1) Gun and brush assembly (1) 6-ft. power cord (2) Wheels (1) Replacement nozzle Specifications: Operating PSI: 115 - 140 (Max), Capacity: 28 gallons, Vacuum moter: 1100 watt, 120V, 1.5 HP, Air Consumption at Load (CFM): 15 at 80 PSI, Body Material: Steel, Body Finish: Powder-coated, Recommended Media: Glass beads, aluminum oxide, steel grit, garnet, plastic grit, walnut shells, corn cob, Hose length (ft.): 8, Nozzle Size (in.): 1/4, Tire Size (in.): 6 Dimensions L x W x H (in.): 15 x 15 x 41, Manufacturer Warranty: 1 year limited warranty, Ship Weight: 88.0 lbs
P/N 12-02647 ..... $636.95

MONSTER BLAST CABINET

The Monster Blast Cabinet is constructed of 14-gauge steel for strength and durability. It features a built-in dust collector and large work area to handle bigger pieces. Foot pedal control and side-mounted light switches for easy control.
What's included: (1) Blast cabinet (1) Blast Gun (4) Nozzles (two 7/32in., two 9/32in.) (1) Air regulator (2) Blast gloves (1) Foot pedal (4) Fluorescent lights (5) Extra window and (5) extra light underlayment sheets
Features: Large front door for easy loading. Heavy-duty 90 CFM dust collector improves visibility during blasting. Rear-mounted dust collector saves floor space. Convenient foot pedal operation. Large work area. Large viewing window: 30 inches x 15 inches. Heavy-duty steel grate holds up to 400 pounds! 4 fluorescent bulbs provide a very bright work area. Monster-sized 443 pounds! Heavy-duty 14 gauge steel has a resilient powder-coated finish. Gas-charged hydraulic hinges provide smooth and easy opening / closing Power controls are lighted and within easy reach on side of cabinet Blast-gun hook inside cabinet.
P/N 12-02648 .....$2,156.00

CABINET BLASTERS

100 CFM dust collector included with all steel cabinets. HD 14 gauge steel - welded seams. Full width top door. Optional additional side door. Optional foot pedals or ALC pistol grip trigger gun. High quality lined 24" gloves. Cushioned foam armholes.
Specifications: Work Area: 36" or 48" or 60" W x 24"H x 24"D, Height: 60", Door Options: Double Doors, Top Door Opening: 13" x 35", Side Door Opening: 11" x 17", Gun Options: Foot Pedl, Weight: 36" - 272, 48" - 303, 60" - 333.
Cabinet 36" .....P/N 12-02563 .....$1,747.27
Cabinet 48" .....P/N 12-02564 .....$1,795.00
Cabinet 60" .....P/N 12-02565 .....$1,879.00

ECONOMY PORTABLE SAND BLASTING SYSTEM

A new portable blasting system for cleaning and surface preparation of metal, plastic, fiberglass or wood. Ideal for graffiti removal from brick or stone surfaces. Dee-Blast system consists of an abrasive hopper 20-1/2" high and 9-1/2" diameter molded PVC drum with tight fitting top to keep abrasive media clean. Hopper holds up to 65 lbs. of media. It has a 10 ft. long rubber hose, a full-length face shield and a trigger-operated blasting gun that completely mixes air and media to produce a uniform spray pattern.
P/N 130..... $268.95

PORT-A-BLAST SANDBLASTER

The Port-A-Blast sand blast gun is a complete sand blast unit. Fill the container with the abrasive material, connect the gun to your air line and it is ready to go to work. Will operate on air pressure as low as 60 PSI. However, for best results, pressures of 100-500 PSI are recommended. The greater the pressure the faster the cutting. The gun can be used to siphon abrasives or liquids directly from a hopper or bucket, using a flexible siphon tube, and eliminating the 1Qt. container.
Compatible Abrasives: • Silica Sand - the cheapest and most widely used for average work. • Glass Beads • Black Beauty Abrasive • Aluminum Oxide Abrasives - for fast cutting and fine texturing and etching. • Nut Shell Abrasives - for cleaning and polishing hard under surfaces without scratching. • Metal Shot - for removal of hard surfaces such as porcelain.
Port-A-Blast gun .....P/N 12-00172 .....$59.95
Flexible siphon tube .....P/N 12-00173 .....$10.95
Replacement Ceramic nozzle .....P/N 12-00493 .....$15.85

DELUXE PORTABLE PRESSURE BLAST SYSTEMS

Model 1000

These Portable Pressure Blasters are designed to make the most efficient use of your air and abrasive supply. These are not inexpensive siphon units. The entire tank is filled with air and sand under pressure. When the nozzle and valve is opened the sand/air mixture is released under tremendous pressure to quickly remove paint, rust, scale and other coatings. These units are 3-5 times faster to use than siphon units. All units arrive complete with air gauge, pressure vessel, sandblast hood, and sandblast hose. Simply fill with abrasive and attach to your air supply and you are ready to begin blasting. Order by Part no.

ABRASIVES – Black Beauty: Economical, fast cutting abrasive. For quick removal of paint and rust. 80# bag. P/N 12-20740.....$47.50

Model 400

Spec. Chart	Model 400	Model 1000
Operating Pressure	60-125 psi	60-125 psi
ASME Tank	No	Yes
Sandblast Hose	7 feet	10 feet
Abrasive Capacity	40-50 lb.	100-120 lb.
Nozzle Size	3/32"	1/8"
Part Number:	12-20725	12-20735
Price:	$496.00	$860.00

TRIPLE DOOR BLAST CABINET

48x24" Triple Door Blast Cabinet
Features: • Full width top door • Two side doors • Foot pedal • Flourescent light • 90 CFM dust collector attached • Pressure regulator • Replaceable window underlays • Includes 4 nozzles • Some assembly required.
P/N 12-02858 .....$1,348.00

BENCHTOP CABINET BLASTER

30x20" Bench Top Blast Cabinet
Features: • Made of tough LDPE polymer • One-piece construction (no leaks) • Self-adhesive underlay • Pistol grip trigger gun • Overside top window/door
Specifications: • Work area: 30"W x 27"H x 20"D • Height: 28" • Weight: 34 lbs.
P/N 12-02857 ..... $465.00

TO

PRECISION AIRCRAFT SCALES FOR ACCURATE WEIGHT & BALANCE

Checks aircraft weight and balance after modifications or fitting of new accessories. Flight safety is improved by periodic weighing to verify weight and balance is within limits. Simply roll the aircraft up the ramps onto the scales or jack the wheels and slide the pads under tires. A single high performance strain gauge load cell is in each pad. Temperature compensation prevents zero shift or sensitivity changes. Weighing pads, indicator and cables are color coded for easy match up. Include one 3 channel indicator, three colored cables, one 110V battery charger cable, three ramps, and six tire stops. Also includes a case.

Part No.	Capacity	Price
12-16711	2,500 lbs. per pad	$6,583.00
12-16715	6,000 lbs. per pad	$7,479.00
12-16721	10,000 lbs. per pad	$8,826.00
12-16725	15,000 lbs. per pad	$8,921.00
	OPTIONS	
Part No.	Description	Price
12-16730	Extra cable, colored	$365.95
12-16735	Extra ramps, small, set of 3	$298.95
12-16740	Extra ramps, large, set of 3	$656.00
12-16745	Extra tire stops (chocks)	$54.85
12-16750	220V Battery Charger Cable for overseas	$541.00

AIRCRAFT WIRELESS WEIGHING KIT

The Aircraft Wireless Weighing Kit is the highly portable weighing device for small to medium sized aircraft. Ideal for obtaining weight from 3 points under the aircraft to properly determine CG ratios.

Featuring standard capacities to 22,000 lbs (greater capacities available), this device will be a welcomed addition to your aircraft repair facility or regional airport.

Specifications: • Load Cell Model: WJSD-5000 • Wireless Range: 50 ft. • Capacities: 5 ton/sensor • Minimum Division: 1 kg • Maximum Tare: 4,000 kg • Built-In Rechargeable Battery • AC Adapter

P/N 12-02608 ..... $3,995.00

TIRE BEAD BREAKER

Once the tire & wheel have been removed from the airplane, the air is let out of the tire. The "Tire Bead Breaker" is used to break the bead or bond between tire and wheel. The "TBB" let you safely break this bead almost without effort & with- out doing damage to the expensive cast wheels. One broken wheel half can easily cost more than the "Tire Bead Breaker"! The "Tire Bead Breaker" adjusts to fit tires as small as tailwheel tires and as large as those tires found on large, corporate cabin planes. Can be used on both tube and tubeless tires.

P/N 12-16790 ..... $145.85

TIRE BEAD BREAKER

The universal design of this tire bead breaker accommodate tube type and tubeless tires. It is easily adjustable for a wide range of tire sizes up to as large as tires for Twin Beech and Aero Commanders. Features all steel construction.

P/N 13-02360 ..... $235.95

VALVE CORE REMOVAL TOOL

Boxell Aerospace 968RB Safe Core Valve Tool. Aircraft Tire Valve Core Removal Tool. Used for rapid and safe tire deflation. Tool threads on valve stem. Releases and traps the valve core within the tool but exhausts the air through ports. Prevents Injury to Technician and FOD (stops the valve core from becoming a missile!) Air exhausts away from technician. Fits all standard aircraft tire schrader valves (equivelant to US Automotive valve stem). 100% Lifetime Warranty. Made In the USA.

P/N 12-03428..... $29.50

ACCUGAGE PROFESSIONAL TIRE GAUGE

This very accurate bourdon tube tire gauge offers precision pressure control and a rugged steel case with rubber shock-absorbing cover. It comes complete with a 12" long flexible braided hose, a bleeder valve, and stop hand. It is easy to read the pressure on this 2" gauge with 1" psi markings and 60 lb. range. Excellent for use on aircraft tires as well as cars and trucks.

P/N 13-00437 ..... $16.85

TIRE PRESSURE MONITOR SYSTEM

With the flip of a switch, this battery operated, hand held unit, displays the actual tire pressure and tire temperature. Small removable electronic valve sensors transmit pressure/temperature to the LCD monitor within 25-50 feet of the aircraft. The sensors can be easily removed when adding air to the tires, and when placing the sensors back on the valve stems, will send the new pressure readings to the LCD monitor. These sensors replace the standard valve caps and stay on the tires during flight. Pressure range 0 to 80 PSI. Temperature range - 50 Centigrade to 145 Centigrade. The monitor also has an alarm setting for high or low pressure. The battery has an average life of two years. The product is warranted for 12 months from the date of purchase. Only rated to flight level 30. Not FAA Approved. Installation on certificated aircraft requires FAA form 337.

PSI Range 0-60 ..... P/N 05-04367 ..... $345.00
PSI Range 0-140 ..... P/N 05-10769 ..... $431.00

TIRE DOG

The Wireless Tire Pressure/Temperature Monitoring System for Trucks, Trailers, and Motor Homes. The monitoring system can measure real time tire pressure and tire temperature while the vehicle is either standing or in action. The tire pressure range is 0 to 180 psi. It will support 4 tires up to 22 tires. Installation can be accomplished by the owner/operator of the vehicle or trailer. Depending on the distance to tires or the vehicle type, a booster relay may be required. An adjustable swivel mounting bracket allows the monitor to be mounted on the dash or windshield. All items of the system are battery operated with a life span of 12 to 24 months depending on use. The system can be transferred to other vehicles if desired. The conceptual drawing displays the monitoring system up to 10 tires, by adding more sensors and relays, the system will expand up to 22 tires. ..... P/N 05-04849 ..... $529.00
Tire Dog Sensor ..... P/N 05-04850 ..... $50.00
Tire Dog Wireless Relay ..... P/N 05-04851 ..... $75.00

ANALOG TIRE GAUGE

Industry standards permit aircraft tires to lose as much as 1% of their pressure each day, and even mild underinflation can allow temperatures to rise exponentially, sometimes resulting in heat-induced failures even while taxiing, company officials note. Underinflation can cause poor tracking and landings or even total failure of the tire or the wheel. Underinflation lengthens the takeoff roll and reduces the brakes' predictability and effectiveness. Tool Testing Lab's backlit digital gauge reads in PSI, InHg, Oz, SqIn, Inches or Feet, H2O, Kg, sqCm, Kpa, and Bar, with ½% tolerance and as fine as 0.1PSI resolution. It also holds peak readings, and features a built-in bleeder valve. Features: 300 PSI gauge, Accuracy 1% Full Scale 300 PSI Rated Hose Rubber Boot, Dual Foot Chick, Swivel Footing on Gauge

0-300 PSI ..... P/N 12-02638 ..... $109.85
0-160 PSI ..... P/N 12-03345 ..... $109.75

DIGITAL TIRE GAUGE

300 PSI Gauge, Accuracy ± ½ % of Full Scale, 4 Digit Display - Shows pressure in tenths of PSI 300 PSI Rated Hose Dual Foot Chuck (Other Chucks Available), Protective Rubber Boot, Swivel Fitting on Chuck Backlight Button for Low Light Conditions, Zero Button Reads in PSI, Bar, KPa and 5 Others Peak Hold Reading Manual and Auto Shutoff, Uses two AAA Batteries (2000 Hrs Usage Typical) Pressure Bleeder Valve, Storage Case, Fresh Certification ..... P/N 12-02637 ..... $269.50

DIGITAL TIRE GAUGE KIT

300 PSI Gauge Accuracy ± ½ % of Full Scale. 4 Digit Display - Shows pressure in tenths of PSI. 300 PSI Rated Hose. Quick Disconnect. Protective Rubber Boot. Swivel Fitting on Chuck. Backlight Button for Low Light Conditions. Zero Button Reads in PSI, Bar, KPa and 5 Others. Peak Hold Reading. Manual and Auto Shutoff. Uses two AAA Batteries (2000 Hrs Usage Typical) Pressure Bleeder Valve. Storage Case. Fresh Certification. 1 year Warranty

P/N 12-02639 ..... $325.00

TO

AIRCRAFT JACKS

MEYERS HYDRAULICS AIRCRAFT JACKS

Meyers Hydraulics have been recognized as the industry standard for aircraft jacks for over 25 years. Professional mechanics rely on the AJS Jack Set for applications requiring heavy-duty lifting capacity, smooth maneuverability, and reliability. Refer to the Application Chart below for the components required for your aircraft, and then order from the price list accordingly.

Aircraft	Jacks	Tailstand	Legs	Tubes & Caps
Aero Commander	(2) A-6	(1) ATS	(2) AJL	(2) AT-4
Beech: Model 50, King Air, Queen Air	(2) A-6	---	---	---
	(1) A-5	---	---	(1) AT-3
Beech: Bonanza, Debonair, Travelaire, Baron	(2) A-5	(1) ATS	---	---
Mooney	(2) A-5	(1) ATS	---	---
Piper: All except Navajo & Aerostar	(2) A-5	(1) ATS	---	---
Piper Navajo & Aerostar	(2) A-6	(1) ATS	---	---
Cessna: Cardinal RG	(2) A-6	(1) ATS	---	(2) AT-4
				(2) ATC-8
Cessna: All high wings RGs except Cardinal	(2) A-6	(1) ATS	(2) AJL	(2) AT-4
				(2) ATC-8
Cessna: All 300 & 400 Series	(2) A-5	---	---	(2) AT-28
				(3) ATC-4
Navion	(2) A-5	(1) ATS	---	(2) AT-28

Part No.	Description	Price
12-21405	A-5 Jack w/ A42222 Tube	$675.00
12-21410	A-6 Jack	$785.00
12-21415	ATS Tail Stand	$209.95
12-02281	A427 Jack w/ AT42727 (27"/46")	$697.00
12-21435	AJL Leg	$94.95
12-21440	AT-1 Tube	$55.85
12-21445	AT-2 Tube	$79.95
12-21455	AT-3 Tube	$78.75
12-21460	AT-4 Tube	$95.80
12-21465	AT-28 Tube	$73.75
12-21470	ATC-4 Cap	$82.80
12-21475	ATC-8 Cap	$89.75

AJS	Height Ranges
A-5 w/AT-1*	22"/36"
A-5 w/AT-28	28"/42"
A-5 w/AT-3	34"/58"
A-6 w/AT-2*	34"/58"
A-6 w/AT-4	54"/78"
A-6 w/AJL	Legs+10"
ATC-4 Cap	+1 to 4"
ATC-8 Cap	+1 tp 8"
ATS Tailstand	30"/51"

(*) ATC Caps will not work on these tubes.

AJS UNIVERSAL AIRCRAFT JACK SET

The AJS Universal Aircraft Jack Set from Meyer Hydraulics has served as the general aviation industry standard for over 25 years. Professional mechanics rely on the AJS Jack Set for applications requiring heavy duty lifting capacity, smooth maneuverability, and unquestioned reliability. The AJS Set lifts all retractable gear aircraft weighing up to 8000 lbs.

AJS System:

1. A-5 Jack w/ AT-3 Tube
2. A-5 Jack w/ AT-1 Tube
3. ATS Tallstand
4. A-6 Jack w/ AT-2 Tube
5. A-6 Jack w/ AT-4 Tube & AJL Leg Set
6. AT-3 tube
7. AT-1 tube
8. AT-4 caps
9. AT-2 tube
10. AT-4 tube
11. AJL Leg Set

P/N 12-21476 ..... $3,204.00

AJS2 DELUXE JACK SET

Includes one complete AJS Jack system (describes above) plus one A-5 Jack with AT-1 tube, one AT-28 tube, and one ATC-4 cap. A very popular Jack system for general aviation maintenance.

P/N 12-01378 ..... $3,849.00

A419 AND A421 VERY LOW AIRCRAFT JACKS

Designed primarily for the new class of aircraft called Very Light Jets (VLJs). Ultra low height and the maximum stroke range necessary for the large landing gear movements found on these jets. Features: (A) Steady Knobs (B) Convenient hole spacing (C) Positive safety lock prevents accidental lowering. (D) Anti-snag round tube (E) Three 3" spring loaded casters (F) Low-height leg design.

A419 - height range 19"-34" ..... P/N 12-02290 ..... $721.00
A421- height range 21"-38" ..... P/N 12-02291 ..... $728.00

MEYER JACK REPAIR KIT

Meyer Hydraulic Jack repair kit for: A-5 Jacks (s/n 6417 plus), A-6 Jacks (s/n 5118 plus), A-60 Jacks (s/n 86 plus), A360A, A419, A421, A422, A427, A434. 1 lbs (0.5Kg) P/N 12-03246 ..... $64.95

JACK PADS

Jack pads provide a cradle for the main landing gear legs. The cradle design securely holds the landing gear providing a safe jack point. The adjustable jack pad fits flat spring gear. The round gear jack pad fits the models listed below. • Save time when servicing tires, wheel bearings and brakes • Lift only the wheel instead of the whole aircraft • Eliminate the unsafe practice of stacking wood blocks under a bottle jack • All parts pack away neatly into a sturdy weather resistant toolbox • Made in USA

FLAT PIVOT POINT ADJUSTABLE JACK PAD - * Adjust width, taper and angle adjustment. * Adapts to many jacks. Shown with bottle jack. * Fits: Cessna C-120, 140, 150, 170, 172, 175, 180, 185. 182, 188, 190, 195, 205, 206, 336, 337, flat gear 177RG, Piper Tomahawk, Beech Skipper, Champion, Bellanca, and similar spring steel landing gear. P/N 12-00837 ..... $96.75

ROUND JACK PAD ADJ-R - ack pads provide a cradle for the main landing gear legs.The ADJ-R has a half round design cradles the landing gear safely. Pivots on a machined bottle jack extension. Use with Cessna C-172RG, 177RG, 182RG, 210, T210, P210, and similar landing gear P/N 12-00679 ..... $73.50

C300 JACK PAD ADJ-300 - * Cessna 300, 400 & 500 series * Perfect for the Conquest & Citation. * Sold in Singles. P/N 12-00683 ..... $46.50

JACK EXTENSIONS

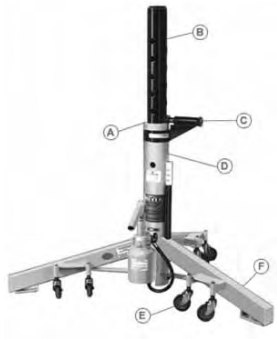
* Bottle Jack Extensions will fit any 1-1/4" O.D. ram. * Typical 6 ton jack has a 1-1/4" O.D. ram. * Extensions are machined & slide together for easy stacking. * Use on aircraft with a jack point pin. * Not the same extensions as found in the Aero Jack Kit below. * No special jack pad needed on tubular C-152, 172, 182 etc.

1.5" extension ..... P/N 12-00156 ..... $27.50
3" extension ..... P/N 12-00157 ..... $29.50
8" extension ..... P/N 12-00158 ..... $30.85

AUTO JACK ADAPTER

P/N 05-08297 ..... $32.85

MEYER HYDRAULICS A300 3-LEG SERIES AIRCRAFT JACKS



Today's jet and turbo-prop aircraft weighing up to 32,000 lbs. are too valuable to consider using anything less than the A300 Series Aircraft Jacks from Meyer Hydraulics. For over 45 years, Meyer Hydraulics has manufactured aircraft jacks that continue to set the standard for safe, dependable lifting. This line of professional lifting equipment handles aircraft weighing up to 32,000 pounds with the security and features one should demand in an aircraft jack. Features: (A) ANTI-SWAY ANTI-SNAG GUIDANCE SLEEVES (B) CONVENIENT HOLE SPACING (C) POSITIVE SAFETY LOCK: Spring loaded safety pin "pops" into the slide tube to prevent accidental lowering (D) LARGE DIAMETER ROUND FRAME TUBE (E) SIX 3" SPRING LOADED CASTERS: The steel leg pads never scuff across the hanger floor (F) LOW HEIGHT LEG DESIGN: Provides maximum gear door clearance with one section completely free of any protrusions. The three 26" legs create a wide stance insuring stability.

Meyer Model No.	Old No.	Capacity	Low	High	Lifting Range	Part No.	Price
A322B	A-10	16,000 lbs.	22"	36"	14"	12-02668	$1,215.00
A325B	A-2516	16,000 lbs.	25"	42"	17"	12-02669	$1,227.00
A328B	A-9	16,000 lbs.	28"	48"	20"	12-02670	$1,253.00
A330B	A-11	16,000 lbs.	30"	52"	22"	12-02671	$1,260.00
A334B	A-17	16,000 lbs.	34"	60"	26"	12-02672	$1,229.00
A334C	A-1724	24,000 lbs.	34"	60"	26"	12-02673	$1,280.00
A340C	A-15	24,000 lbs.	40"	71"	31"	12-02674	$1,403.00
A342B	A-13	16,000 lbs.	42"	75"	33"	12-02675	$1,358.00
A342C	A-1324	24,000 lbs.	42"	75"	33"	12-02676	$1,422.00
A355C	A-5524	24,000 lbs.	55"	95"	40"	12-02677	$1,709.00
A360A	A-60	10,000 lbs.	60"	100"	40"	12-02678	$1,474.00

TO

AIRCRAFT JACKS

AIRCRAFT JACKS

Constructed of welded square steel tubing. The three leg design clears close tolerance gear doors, such as Bonanzas and Barons. All models have machine jack point centering cap with casters, jack handle holder and positive locking jack point centering cap with casters, jack handle holder and positive locking collars. Oversize shipping charges apply.

Aircraft Jacks	Image	Part No.	Price
Piper and Mooney Jack and other light twins and singles Height 26"-45". Cylinder Capacity **6,000 lbs. Note: Mooneys require 26" clearance plus room for the cap or the Jack will not fit.		12-99115	$339.00
Tail Stand 18"-35":		12-99130	$198.75

JACK POINTS

Aircraft Jacks	Image	Part No.	Price
Cessna Jack Points Spring Gear Type		12-01374	$49.50
Mooney Jack Points (Sold Individually)		12-01375	$24.50 each

JACK LIFT PAD

This Jack Lift Pad is quality made of alloy steel and is adaptable to all bottle type hydraulic jacks. The serrated vee design provides positive holding. It is easy to install and proves a great variety of applications. P/N 12-30270 .....$45.60

REDLINE DOLLY-JACK

The Dolly-Jack is a self contained, portable system that can lift any main wheel or nose wheel with the turn of crank for routine maintenance and tire changes. It allows the plane to spin around in its own space. Made in the USA using 4130 Chromoly material. FITS THESE PIPER: Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole. FITS THESE BEECHCRAFT Bonanza, Baron, Travel Air, T-34 P/N 13-03380..... $878.00

LANDING GEAR SAFETY STAND

The "Landing Gear Safety Stand" is a must! Anyone that has ever seen a plane slip off a jack knows! The stand slips on over the axle when ever the wheel is removed. Put the nut back on and the plane can't slip off the stand. It adjusts for height with a quick release pin. The wide, stable "H" base is made from heavy gauge square steel tubing for strength, safety and durability. The unique stand is finished in an attractive, bright red powder coat finish. LGSS-2, has a 12" x 12" base with adjustable axle height of 10"-15", and LGSS-3 has an 18" x 18" base with adjustable height of 14"-21.5".

9" Stand..... P/N 12-02015 .....$79.85
12" Stand ..... P/N 12-00255 .....$68.85
18" Stand ..... P/N 12-00256 .....$90.75

THE PLANE SKATE

The plane skate is the fastest and safest way of moving a disabled aircraft with a flat tire from a hard surface runway or taxiway without having to go through the time consuming process of using jacks or removing the tire, brake assembly or wheel fairings. The Plane Skate reduces any unnecessary runway closure time and takes only minutes to load and move. The Plane Skate is made of 1/4" and 5/16" solid steel plates and six (6) 1200 lbs. heavy-duty casters (7000 lbs. per landing gear leg), making this durable platform capable of moving most aircraft as large as a King Air 90 series aircraft to as small as a Piper Cub. It is also designed with ample area on the platform to load most aircraft equipped with wheel fairings and even tail wheels.

P/N 12-03702 .....$1,695.00

AERO JACK KIT

The Aero Jack System saves time when changing tires or working on landing gear. Use a combination of innovative tools packed in a handy toolbox. Designed by an A&P, for do-it-yourselfers and other mechanics, three kits are available depending on your needs.

Description	Part No.	Price
Complete Aero Jack System - Service both flat and round gear from a handy toolbox.	12-00254	$269.00
Flat Gear Aero Jack Kit - Cessna C-120, 140, 150, 170, 172, 175, 188, 182, 190, 195, 205, 206, 336, 337, flat gear 177RG, Piper Tomahawk, Beech Skipper, Champion, Bellanca, and similar landing gear.	12-00681	$239.00
Round Gear Aero Jack Kit - Cessna C-172RG, 177RG, 182RG, 210, T210, P210, and similar landing gear.	12-00682	$231.95
Expandable Aero Jack System - Included in the tool box is: Bogert Tribal Jack with all the jack pads. (C210, RG, R, FPP, Moon, Musk, C300). Weight is 30 lbs.	12-02096	$947.00

TRIBAL JACK

Aid aircraft maintenance, such as servicing brakes, working on bearings, or changing tires. Maximum load of 2,500 pounds and can be used on Piper aircraft, Musketeer, Mooney, and many more aircraft with near-vertical landing gear. Lower clearance lifting pad which allows jack owners to begin lifting from a 2 1/2" starting position and up to 12". It can be used on main gear, nose gear and the tail wheel. Made in USA.

P/N 12-00838 ..... $217.95

LIL LIFTERS

LITTLE LIFTER P/N 12-00839 .....$142.75
* Lightweight, 8.5 lbs
* Lift Range 2.75" to 9.5"
* 4 pivoting pads included
* Use with 800X6 tires or smaller

LITTLE LIFTER II P/N 11-06948 .....$178.75
* Lightweight, 10 lbs
* Lift Range 2.75" to 13.5"
* 4 pivoting pads included
* Us with 800X6 tires or larger
* Picture shown with 2 liter bottle

LITTLE LIFTER III
P/N 11-06949 .....$164.95
* Lightweight, 13 lbs
* Lift Range 2.75" to 19.25"
* 4 pivoting pads included
* Use with 31" tires

TO

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

AIRCRAFT JACKS

BROWNELL AVIATION JACKS

For over forty years Brownell has been the leading name in boat storage equipment throughout North America and the world. The same commitment comes in our new line of aviation products. Brownell slightly modified our jack stands and dollies to fit the needs of aviation professionals and enthusiasts in order to help make the work place safer and more efficient. All of the products are made in America using skilled American labor and American steel.

Description	Height Mins (in/cm)	Weight (lb/kg)	Part No.	Price
AS3 Brownell Jackstands W/tops	25-38 / 64-97	97 / 15.0	12-03299	$121.75
AS2 Brownell Jackstands W/tops	29-46 / 74-117	37 / 16.5	12-03301	$128.75
AS1 Brownell Jackstands W/tops	33-50 / 84-127	38 / 17.0	12-03302	$135.75
AS0 Brownell Jackstands W/tops	41-58 / 104-147	46 / 21.0	12-03303	$149.75
AS0X Brownell Jackstands W/tops	54-72 / 137-183	46 / 22.5	12-03304	$171.75
AS0XX Brownell Jackstands W/tops	67-84 / 170-213	50 / 43.0	12-03305	$185.75

BROWNELL AVIATION FUSELAGE DOLLY

- Precision acme threads for easy, smooth adjustment.
- Very stable work or storage platform.
- Stays in place with no bleeding, etc.
- Small footprint of base and top pad allow for easy access.
- Stands stack neatly when not in use to free up valuable space.
- TPE surface resists slipping and scratching.
- SWL 20,000lbs/9,100kgs.
- Innovative design to easily and securely move aircraft on the hangar or shop floor.
- Allows maximum utilization of space.
- Disassembles for compact storage.
- Phenolic wheels with brakes.
- Width 28"-84".
- Length 32"-148".
- Height 34"-51".
- Weight capacity 10,000lbs/4,535kgs.

P/N 12-03307 ..... $2,375.00

RV JACK STAND KIT

Someday you'll need to jack up your aircraft to install new tires, clean & grease wheel bearings, or fix a flat. This nifty jack stand is safer than using an engine hoist or the wing tie down location. Requires a modification to the axle nuts (about 1 hour). Kit includes the axle jack arm, axle nut modification hardware, & directions to modify the nuts. For hollow axles (Wittman style) Gear only. Uses automotive bottle jack. Jack not included. Not for RV-8s. For RV Gear Legs with Hole in Axle.

P/N 12-00634 ..... $57.75

RV 8 TRAVEL JACK

The RV 8 Travel Jack was designed and manufactured by RV-8 builder / pilot Steve Jackson. All steel construction, weighs less than 3 pounds. Jack mast easily removes from base plate for compact storage. Uses 3/4" wrench to operate (wrench not included). Tested to 1350 pounds. Has securing arm that positions between the gear leg & brake to stabilize the jack - works on both left and right gear leg with a simple adjustment. Base measures 3-1/2" X 8"; mast stands 10" tall. Designed for RV-8 flat spring gear legs (only -- will not work on the other RVs with round gear legs).

Standard ..... P/N 12-03170 ..... $149.95
For Grove Gear ..... P/N 12-03243 ..... $149.85

BROWNELL AVIATION TAIL STAND

- Precision acme threads for easy, smooth adjustment
- Very stable work or storage platform
- Stays in place with no bleeding, etc.
- Small footprint of base and top pad allow for easy access
- Stands stack neatly when not in use to free up valuable space
- TPE surface resists slipping and scratching
- SWL 20,000lbs/9,100kgs
- 30-52"/76-131cm range
- Universal connection
- Base plate
- Accommodates ballast

P/N 12-03306 ..... $169.95

BEECHCRAFT B90 JACK PAD

Made in the USA. Note: Does not include jack or pump. Saves time and money. Adds mission capability. With the appropriate jack, this pad can be used to pick up a flat tire to tire changing height. Frees up full service and wing jacks for other work. Small, Portable and light weight compared to wing jacks. Should be used with Bogert hydraulic, 12", 15 ton long stroke bottle jack. The jack pad can be used with 6 ton, 1¼" ram or larger bottle jacks. Can be used with 3 ton or larger floor jacks.

P/N 12-03165 ..... $356.00

PROP SLING, (BOGI-LIFT)

The tool every mechanic needs!

* Lift nose wheel without jacking up whole plane.
* Service nose wheel & strut effortlessly.
* Support a new propeller during installation.
* Use with 2 and 3 blade props.
* 4-point stability with tail & wing jacks.

P/N 12-16718 ..... $99.95

SHOP TUFF ELECTRIC HOISTS

This handheld remote control electric hoist works great in your garage or shop. This item comes with Universal Mount brackets and has a 110 Volt, 3/4 HP motor. Lifting height: 36ft SL, 18ft DL. Cable length: 39ft. Handheld remote control 5ft cord. Motor: 110Volt, 1-1/4HP. Universal Mount with brackets.

Model No.	Description	Part No.	Price
STF-2244EH	220 lb Single line pull 440 lb Double line pull Motor: 110Volt, 3/4HP	12-03375	$117.50
STF-4488EH	440 lb Single line pull 880 lb Double line pull Motor: 110Volt, 1-1/4HP	12-03376	$149.00
STF-5511EH	550 lb Single line pull 1100 lb Double line pull Motor: 110Volt, 1-3/4HP	12-03377	$159.00

TO

AIRCRAFT JACKS

THREE TON HYDRAULIC AIRCRAFT JACKS

MODEL #324 3 TON LOW WING JACK - Eliminates the frustration of having unstable jacks that conflict with landing gear components and gear doors adjacent to your jack point. These jacks are especially appreciated by owners of Bonanza, Mooney, Comanche, & Twin Comanche Aircraft for the manner in which they may be positioned clear of the inner gear door hinge. Model #324 provides an easy slide under fit on aircraft with lower jack points. • double action 3 ton (6,000lbs) hydraulic cylinder • jack point centering cap • locking safety collar secures the load • rugged heavy gauge steel construction • stable three leg design clears gear doors • convenient handle storage.

Effective Range: 24"-40" Ram Capacity: 6000lbs
P/N 12-01724 ..... $248.95

MODEL #326 3 TON LOW WING JACK - 26" - 43" Eliminates the frustration of having unstable jacks that conflict with landing gear components and gear doors adjacent to your jack point. Owners of Beech-Craft Bonanza 33/35/36 aircraft especially appreciate these jacks for the manner in which they may be positioned clear of the inner gear door hinge. If the only plane you'll be lifting is the Bonanza… please see Model #324. • jack point centering cap to assure the aircraft stays on the jack. • double action 3 ton (6,000 lb) hydraulic cylinder. • locking safety collar secures the load. • rugged heavy gauge steel construction. • three leg design clears gear doors. • convenient handle storage

Effective Range: 26"-43" Ram Capacity: 6000lbs
P/N 13-05544 ..... $254.00

MODEL #332 3 TON LOW WING JACK - 26" - 43" & 32"- 49" Especially suited for use on Cessna 310/320 Aircraft. Supplied with a removable 6" riser to accommodate the higher jack points found on some aircrafts. Similar in design to Model #326, this unique design allows the Model #332 to be easily converted for use as a Model #326 by removing the 6" riser. Owners report this versatility to be of great benefit when aircraft of various types are housed together or the jacks are loaned out to others.•double action 3 ton (6,000 lb) hydraulic cylinder • jack point centering cap to assure the aircraft stays on the jack • 6" riser provided to accommodate higher jack points. Effective range 26"-43" & 32" - 49" • locking safety collar secures the load • rugged heavy gauge steel construction • three leg design clears gear doors • convenient handle storage

Effective Range: 26"-43" & 32" - 49" Ram Capacity: 6000lbs
P/N 12-01725 ..... $289.95

EIGHT TON HYDRAULIC AIRCRAFT JACKS

MODEL #838W 8 TON UNIVERSAL JACK - 26"-43", 32"-49", 38"-55" Model #838W provides all the strength and versatility needed to accommodate larger aircraft. This unique design allows the Model #838W to easily convert from a 26" low wing jack to a 32" or 38" jack, avoiding the high cost of having to purchase model specific jacks. Now with "Tilt & Go" wheels and convenient handle storage for greater value • DOUBLE ACTION 8 TON (16,000LB) HYDRAULIC CYLINDER • HIGHLY VERSATILLE- SHIPPED WITH ADAPTERD FOR 26" 32" & 38"HEIGHTS • JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK • LOCKING SAFETY COLLAR SECURES THE LOAD • STABRUGGED HEAVY GAUGE STEEL CONSTRUCTION • THREE LEG DESIGN CLEARS GEAR DOORS • "TILT & GO WHEELS FOR GREATER MOBILITY • CONVENIENT HANDLE STORAGE Height Range 26"-43", 32"-49" & 38"-55" Ram Capacity: 16,000 lbs.

P/N 12-01726 ..... $389.00
The Model 838HLW combines the strength and versatility of our Model 838W jack with the ability to provide a full 6" of additional ram travel. Ram travel that translates into additional ground clearance, working room and reduced set up time.
P/N 12-03328 ..... $429.00

MODEL #868W 8 TON UNIVERSAL JACK - The Model #868W combines all the strength and versatility of Model #838W with the necessary fittings to accommodate High Wing Cessna Aircraft such as 172RG, 177RG, 182RG, 210 and 337. Shipped with adapters, our unique design allows the Model #868W to easily convert from a 26" low wing jack through the 32" and 38" levels to a 68" high wing jack, avoiding the high cost of having to purchase model specific jacks. • DOUBLE ACTION 8 TON(16,000 LBS.) HYDRAULIC CYLINDER • HIGHLY VERSATILE- SHIPPED WITH ADAPTERS FOR 26", 32", 38", & 68" HEIGHTS • DOUBLE BRACED AT THE 68" HEIGHT FOR STABILITY • JACK POINT CENTERING CAP TO ASSURE THE AIRCRAFT STAYS ON THE JACK • LOCKING SAFETY COLLAR SECURES THE LOAD • RUGGED HEAVY GAUGE STEEL CONSTRUCTION • STABLE THREE LEG DESIGN CLEARS GEAR DOORS • TILT & GO WHEELS FOR GREATER MOBILITY • CONVENIENT HANDLE STORAGE Height Range: 26"-43", 32"-49", 38"-55", 68-87" Ram Capacity: 16,000 lbs

P/N 12-01727 ..... $519.00
The Model #868HLW combines the strength and versatility of our Model 868W high wing jack with the ability to provide a full 6" of additional ram travel. Ram travel that translates into additional ground clearance, working room and reduced set up time.
NOT RECOMMENDED FOR Beech Model 99, Beech 1900, Citation Series, Cheyenne I/II/III/IV, Conquest, King Air, Navajo, Pilatus, Queenaire, T28
P/N 12-03287 ..... $549.00

MODEL #375 TAILWEIGHT/POST - A tailweight that doubles as a tail post and can be moved easily about the shop. This unique design allows the secure anchoring of Compression or Torsion Loads without the need of numerous sand bags and anchor chains. The #375 Tailweight/Post is a safer and much more professional approach to securing the tail of an aircraft undergoing maintenance. Shipped knocked down, the Model #375 is easily assembled and weighted using Six (6) - 60 lb bag of Quickcrete - obtained locally. • SINGLE UNIT PROVIDES THE TAILPOST AND TAILWEIGHT FUNCTIONS • NO MORE SANDBAGS • TELESCOPING SQUARE TUBE POST PINS IN 3" INCREMENTS • RUGGED SWIVEL CASTERS • CORROSION RESISTANT GALVANIZED WEIGHT BOX • SHIPS AT 32 lbs. ~ FINISHED WEIGHT 375 lbs. Range of Adjustment: 17½" - 39½"

P/N 12-01728 ..... $199.95

ACCESSORIES

WHEEL KIT FOR HYDRAULIC AIRCRAFT JACKS

Add Wheels to our Model #324, #326 or #332 The base that comes standard with all of our aircraft jack models is pre-drilled to easily allow for the addition of a Wheel Kit. This Kit Includes: 1 Left Bracket, 1 Right Bracket, 2 Wheels, Hardware Packet, Installation Instructions P/N 12-02032 ..... $52.85

TAILWEIGHT EXTENSION FOR TAILWEIGHT POST

Adds on an additional 12 inches to the Tailweight Post model 375. For higher wing aircraft. P/N 12-02033 ..... $27.50

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

HOBBYAIR RESPIRATOR

The Hobbyair Pro 1 is a fresh air breathing system specifically designed for the amateur painter which allows only fresh air to reach the user's lungs. It features a comfortable, lightweight facemask with beltline hook, simple snap together fittings, and is very affordable. Includes the pump unit with two stage, single speed, air bypass type motor, mask, belt and 40 foot delivery hose, fittings, filter, cord and case. The Buddy System Hobbyair is designed for two people and includes two 40 ft. delivery hoses. 1 yr warranty. Excellent for use in homebuilt aircraft construction and painting.

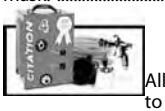
Hobbyair 1 (1/2 mask) 110V ..... P/N 12-15850 ..... $397.00
Hobbyair 1 (1/2 mask) 220V ..... P/N 12-15860 ..... $499.95
Buddy System Hobbyair (110V) ..... P/N 12-15870 ..... $532.00
Hobbyair I (Full mask) 110V ..... P/N 12-15851 ..... $498.00
Hpbbyair I (Full Mask) 220V ..... P/N 12-03520 ..... $545.00
Hobbyair II ..... P/N 09-00633 ..... $448.00
Hobbyair F01 Air Filters ..... P/N 09-01014 ..... $5.95
Hobbyair Cartridge Filter ..... P/N 09-01015 ..... $4.58

HOBBYAIRE BUDDY SYSTEM AIR RESPIRATOR

Hobbyair Buddy System comes standard with an air pump, 2-40' hoses and a half facemask (HF01)for one person. Locate the intake air pump in a fresh air location and breathe HEPA filtered clean fresh air in most contaminated breathing environments..... P/N 12-02365 ..... $733.00

Full Facemask Lens Protectors - Sold in package containing 25 lens protectors. Apply one at a time over full facemask lens. Clear covers protect your lens from overspray and lengthen the life of your facemask. ..... P/N 12-02366 ..... $25.00

CITATION 4 HVLP SPRAYER/ RESPIRATOR



Allows its' user to achieve 'show plane' quality results to a level never before possible with a turbine powered system. The CITATION '4' offers a much higher PSI range without sacrificing the benefits of HVLP such as lower overspray, the elimination of moisture and high transfer efficiency. This is all accomplished with a more powerful, yet quieter and cooler running turbine blower. Like the standard CITATION, this new system, of course, offers the additional benefit of a built-in supplied-air respirator to assure breathing protection for its' user. P/N 12-00973 ..... $1,176.00

CITATION 3 & 4 HVLP SPRAYER/ RESPIRATOR SYSTEM

CITATION 3 STAGE HVLP PAINT SPRAYER & RESPIRATOR W/ BOTTOM FEED GUN - Standard One man System Includes: Citation Dual HVLP Pump, Two 40' hoses, one sprayer & one respirator, Half facemask & belt, Bottom Feed HVLP Paint Spray , Gun with Quart Cup, Complete System and Spray Gun Manual, Introductory 'How to" Spray Manual, 3 Stage Sprayer Specs: 110-120V VAC, 50/60HZ, Amps: 11.5, PSI: 5.5 One Man Respirator: 110-120V VAC, 50/60 HZ, Amps: 1.6, Cfm: 7 @ Facemask Two Man Respirator: 110-120V VAC, 50/60HZ, Amps: 7, Cfm: 7.5 @ Facemask P/N 12-02372 ..... $993.00

CITATION 3 SPRAYER & RESPIRATOR W/ GRAVITY GUN - Standard

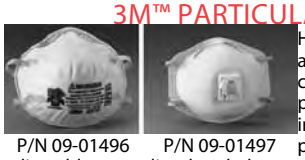
One man System Includes: Citation Dual HVLP Pump, Two 40' hoses, one sprayer & one respirator, Half facemask & belt, Gravity Feed HVLP Paint Spray Gun with 1000 ml Cup, Complete System and Spray Gun Manual, Introductory 'How to" Spray Manual 3 Stage Sprayer Specs: 110-120V VAC, 50/60HZ, Amps: 11.5, PSI: 5.5 One Man Respirator: 110-120V VAC, 50/60 HZ, Amps: 1.6, Cfm: 7 @ Facemask Two Man Respirator: 110-120V VAC, 50/60HZ, Amps: 7, Cfm: 7.5 @ Facemask P/N 12-02373 ..... $949.00

CITATION 3 STAGE HVLP PAINT SPRAYER & RESPIRATOR W/ BOTTOM FEED GUN - Standard One man System Includes: Citation Dual HVLP Pump, Two 40' hoses, one sprayer & one respirator, Half facemask & belt, Bottom Feed HVLP Paint Spray , Gun with Quart Cup, Complete System and Spray Gun Manual, Introductory 'How to" Spray Manual 3 Stage Sprayer Specs: 110-120V VAC, 50/60HZ, Amps: 11.5, PSI: 5.5 One Man Respirator: 110-120V VAC, 50/60 HZ, Amps: 1.6, Cfm: 7 @ Facemask Two Man Respirator: 110-120V VAC, 50/60HZ, Amps: 7, Cfm: 7.5 @ Facemask P/N 12-00973 ..... $1,176.00

CITATION 4 STAGE SPRAYER & RESPIRATOR W/ GRAVITY GUN - A standard system includes 2-40' hoses (one breathing, one spraying), the Accuspray Professional Quality Bottom Feed Gun -71000 and Half Facemask -HF01A and belt. Any other options including a two man respirator system can be added for this unit.

P/N 12-02374 ..... $1,283.00

3M™ PARTICULATE RESPIRATORS



Helps provide worker protection against certain non-oil based particles. Comfortable, easy to use, and promotes greater worker acceptance increasing wear time. Features 3M's P/N 09-01496 P/N 09-01497 patented filter media, nose foam, and adjustable noseclip that helps provide a secure seal and helps reduce eyewear fogging. Workplace applications: woodworking, grinding, sanding, sweeping, bagging, other dusty operations.

Description	Part No.	Price
8210 Standard dust mask	09-01496	$0.95
Vented dusk mask	09-01497	$2.40

3M™ PROTECTIVE EYEWEAR

PROFESSIONAL SAFETY GLASSES -

- For the professional or serious do-it-yourselfer
- Ideal for outdoor use (PN 13-90751)

Tinted grey and Black ..... P/N 13-90751 ..... $7.95

CENTURION TEAR-N-WEAR PROTECTIVE LENS COVERS

Each AOSAFETY Centurion® goggle TEAR-N-WEAR replacement lens protectors stack contains seven layers of high quality optically clear film. When the outer layer is soiled, scratched, or difficult to see through, simply "tear" the soiled layer off by pulling the tab horizontally from right to left. You now have clean and clear vision again and the next tab is automatically ready for your next tear away. P/N 12-00894 ..... $7.25

SAFETY SPECTACLES

These safety spectacles feature a contoured shape which offers unobstructed vision, excellent side protection and comfort fit bridge. Front color and temple color is black. Lens and sideshield color is clear P/N 13-01310 ..... $6.75/ea.

VENDETTA SAFETY GLASSES WITH GREY LENSES

Meets ANSI Z87.1+ (High Impact) and CSA 94.3 Standards. Sizes : One Size Fits Most Highly Flexible. Shiny Black Nylon Frame. Gray Polycarbonate Lens. CASC (Cordova Anti-Scratch Coating). Thermo-Plastic Temples and Nose Piece.

P/N 14-02172 ..... $6.95

OPTICOR SAFETY GLASSES

Meets ANSI Z87.1+ (High Impact) and CSA Z94.3 Standards. Sizes : One Size Fits Most Frameless. Black Nylon Temples. Polycarbonate Lens. CASC (Cordova Anti-Scratch Coating). Thermo-Plastic Temples and Nose Piece.

Clear ..... P/N 14-02170 ..... $6.95
Grey ..... P/N 14-02171 ..... $6.95

IMPACT GOGGLES

Protects eyes from flying objects. Can be worn over personal glasses. Perforated mask reduces fogging. Fully adjustable elastic headband. Clear polycarbonate lens, 050" thick, is easily removed for cleaning. Meets requirements of ANSI Z87.1 Goggles ..... P/N 91200 ..... $5.85
Replacement Lens, Clear ..... P/N 91202 ..... $1.75

SAFETY FACE SHIELD REPLACEMENT

Provides protection for the face and neck against chemical splash and flying particles.

Replace. Window, Clear ..... P/N 90030 ..... $7.25

SCARAB SAND BLAST HOODS

Features durable construction and large size to cover the head, face, neck and shoulders to protect against the impact of high velocity abrasives. Made with super-heavy 10.38 oz. army duck canvas treated with high water repellant and mildew resistance. Complete with an ERB Safety built-in construction type hard hat that that meets ANSI Z89.1-2003 (Type 1, Class E, G & C) and complies with OSHA regulations for industrial head protection.

Scarab Sand Blast Hood ..... P/N 12-01665 ..... $85.75
Scarab Lite Sand Blast Hood ..... P/N 12-01666 ..... $39.95

ACCESSORIES

Lens for Scarab Blast Hood ..... P/N 12-01667 ..... $14.95
Screen for Scarab Blast Hood ..... P/N 12-01668 ..... $11.95

TO

3M™ SAFETY GOGGLES

SAFETY GOGGLE BX

* BX protective eyewear are fully adjustable with three lens angles and adjustable nose bridge and temple length. Silver/Black frames. Soft adjustable nose bridge Three lens angles for cozy fit Integrated sideshields. Protect your eyes from impact and block 99.9% UV rays. Polycarbonate anti-fog lens. Meets the requirements of CSA Z94.3-2007 and the High Impact Requirements of ANSI Z87.1-2003

P/N 09-02154 ..... $4.60

SAFETY GOGGLE VIRTUA SPORT

* Meets ANSI Z87.1 * Sleek - Styling with both men and women * Lightweight - Less than 1 oz * Contoured flexible temples for comfortable fit * Hard Coat guards against scratching, static and chemical attack

P/N 09-02155 ..... $2.30

SAFETY DUST GOGGLEGEAR

* Vent channels at top and bottom for improved air flow * Lighter weight than most goggles for improved comfort * Soft foam backing seals out particulates * Meets the Impact Goggles requirements of ANSI Z87.1 * Made in U.S.A.

P/N 09-02156 ..... $9.95

SAFETY GOGGLE OC CHOPPER

* Extreme safety eyewear for indoor use * OCC styling * Clear anti-fog lens * Complies to ANSI Z87.1 high impact standards

P/N 09-02157 ..... $8.50

SAFETY LIGHTVISION 2 GOGGLE

* Hands free direct lighting; anti-fog lens; available w/reader lens * Two ultra bright, adjustable LED lights * Long-life, replaceable CR2032 3V battery; includes bag and lanyard * Flexible nose bridge fits virtually all faces * Meets ANSI Z87.1-2003 and CSA Z94.3 standards

P/N 09-02158 ..... $15.75

VIRTUA PROTECTIVE EYEWEAR AP

The Virtua protective eyewear line merges outstanding unisex style, protection and affordability, all while offering wearers an open, unobstructed viewing range and impact-resistant, 3-piece polycarbonate construction. Designed for indoor or outdoor use.

Clear Anti-Fog Lens ..... P/N 09-03053 ..... $2.65
Gray Hard Coat Lens ..... P/N 09-03055 ..... $1.82
Light Blue Hard Coat Lens ..... P/N 09-03056 ..... $1.78
Indoor/Outdoor Mirror Hard Coat Lens ..... P/N 09-03058 ..... $2.53
Clear Hard Coat Lens ..... P/N 09-03059 ..... $3.40

3M™ PELTOR™ DIGITAL WORKTUNES

Worktunes is a self-contained AM/FM noise attenuating headset (NRR 26db) which provides hearing protection combined with an AM/FM radio to provide. Features include: • Easy finger tip controls • 5 preset stations • Volume limited to a safe 82 dB level • Gel/Foam cushions • MP3 cord included • Peltor™ stainless steel spring arm headband provides even pressure all day. • Wide, soft padded headband, flexible antenna. • Quick and easy tuning and volume adjustments P/N 11-01589 ..... $85.75

3M™ PELTOR™ EARMUFFS

The only muff that lets workers listen safely without removing their muffs. When workers lift their muffs, they lower their protection. Now Peltor™ puts safe listening at their fingertips. Just push the button on the PTL muff and speech & sounds "outside" the muff cup can be heard "inside"-- clearly and safely. After 30 seconds, the muff automatically returns to its full protection with an NRR of up to 26 dB. Listen again? Just push again. It's that simple. P/N 11-04310 ..... $27.50

3M PELTOR JUNIOR EARMUFFS

Liquid foam ear cushions and adjustable stainless steel headband. Sized for junior and smaller adults. Features • NRR 22 dB rating • NRR allows range command to be heard for added safety • Designed and sized for youth and smaller adults • Liquid/Gel filled cushions • Comfortable for extended wear • Adjustable headband P/N 12-02845 ..... $91.25

3M ™ PELTOR™ PERSONAL HEARING PROTECTORS

OPTIME 105 - Over-the-head dual cup. NRR 30. Can be used for noise levels up to 105 dB. Color: Black and Red

P/N 12-00699 ..... $23.75

OPTIME 105 HI-VIZ - NRR 30. Can be used for noise levels up to 105 dB. Bright Hi-Viz Yellow great for recognition of workers. P/N 12-02568 ..... $26.95

OPTIME 101 - Over-the-head Hp. NRR 27. Can be used for noise levels up to 101 dB. Color: Green

P/N 12-16110 ..... $16.55

OPTIME 98 - Over-the-head Hp. NRR 25. Can be used for noise levels up to 98 dB. Color: Yellow and Black P/N 12-02569 $14.60

OPTIME 95 - Folding hearing protector. NRR 21. Can be used for noise levels up to 95 dB. Folding – Slim design. Color: Beige and Black. P/N 12-02570 ..... $18.50

3M™ E-A-R™ EARPLUGS

E-A-R CLASSIC - * Most popular earplug in the world * NRR 29dB * The E-A-R® Yellow color is your assurance of proven protection * Moisture resistant dermatologically safe foam is not irritating * Slow recovery PVC foam provides comfort with low pressure

P/N 9134 ..... $0.36
P/N 09-02148 w/ Cord $0.29

CLASSIC™ PLUS - * Classic Plus are longer than Classic earplugs to fit deeper into the ear canal and provide a higher level of protection. * Slow-recovery foam helps ensure comfort and minimize pressure. * Bright yellow color provides a quick visual compliance check. * Dermatologically safe foam is non-irritating, non flammable, and moisture-resistant. P/N 09-02149 ..... $0.24
P/N 09-02150 w/ Cord $0.27

E-A-R SOFT™ YELLOW NEONS™ - * NRR 33dB-Highest NRR available * THE WORLD'S SOFTEST EARPLUGS * Self-adjusting foam provides low pressure with excellent attenuation * Exciting designs and brilliant colors * Dermatologically safe foam is non-irritating to the skin P/N 09-02151 ..... $0.25
P/N 09-02152 w/ Cord $0.35

3M™ PISTONZ™ EARPLUGS - No need to roll down. Biaxially-stiff stem for easy insertion, yet designed to flex sideways if impacted. Tips look like metal, yet provides ultra-soft feel for all day wear. P/N 12-02571 ..... $0.65
P/N 12-02572 w/ cord $0.82

E-A-R EARBUDS 2600 HEADPHONES - * NRR 26dB * Noise Limited to 82dB * Convenient, Easy-Access Volume Control * Mp3 Compatible * Blocks out External Noise * Hear Your music while you work * Ultra Comfortable Design * Better fit for longer wear P/N 09-02153 ..... $43.75

DAVID CLARK DELUXE HEARING PROTECTOR

The David Clark Deluxe Model Hearing Protector provides maximum noise attenuation and optimum comfort. Features urethane covered ear seals, soft foam cushioned headband, military quality materials, finish and workmanship. P/N11-09205 ..... $38.95

NOISEBUSTER ANR EARMUFFS

Designed to reduce aircraft engine noise for airport ground support crews as well as aircraft maintenance and technical personnel, the NoiseBuster Active Noise Reduction (ANR) Safety Earmuff combines an ANSI-rated 26NRR passive earmuff with active noise reduction electronics that deliver up to an additional 20 db of low-frequency noise attenua Powered by a AA battery, the earmuff is resistant to water, moisture, contaminants, mechanical shock, and vibration. Perfect for users who do not mechanical shock, and vibration. Perfect for users who do not require two-way communications capability but who can benefit from protection. Includes: * NoiseBuster ANR Safety Earmuff * One AA battery * 3.5 mm audio interface cable * Warranty - 6 months

P/N 11-07369 ..... $149.95

DRAEGER RESPIRATORS – PROTECTIVE COVERALLS

X-PLORE 3300 SERIES RESPIRATORS

The 3300 Series Mask is an economical half mask made of TPE material with a continuous grey color neck strap.

Under the new particulate filter rules, there are three series of filters: N, R, and P. The N filters are Not resistant to oil; the R filters are resistant to oil; and the P filters are oil proof.

The N series of filters is appropriate for airborne particles such as silica or lead, when there are no oil-based products also in the air.

For example, an N series filter would be recommended during the removal of old lead paint. However, for spraying an oil-based lead paint, an R or P series filter would be recommended as protection against the airborne mist of oil-based solvent.

The R series (resistant to oil) should only be used for a single shift when solvent or oil mist is present in the air. This filter resists oil but may break down in contact with oil or solvent over a long time.

When using P series filters, check the manufacturer's instructions to determine how long the filter can be used when airborne particles are present. NIOSH originally thought that P series filters were oil-proof but recent tests have found there may be some breakdown of the filter material with long-term oil exposure.

Note: N, R, and P filters do not provide protection against organic vapors.

3300/N95 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each N95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02261..... $25.50

3300/R95 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each R95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02262..... $27.50

3300/P100 RESPIRATOR KIT

Kit includes 3300 Mask, 2 each P100 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02263..... $41.50

X-PLORE 3300 COMBINATION CARTRIDGE KIT

The combo cartridge is a P100 filter, and also filters out organic vapor/acid, gas, formaldehyde, chlorine dioxide, and hydrogen floride. Kit includes mask and one combo cartridge.
P/N 12-02267..... $34.00

X-PLORE 3500 COMBINATION CARTRIDGE KIT

The combo cartridge is a P100 filter, and also filters out organic vapor/acid, gas, formaldehyde, chlorine dioxide, and hydrogen floride. Kit includes mask and one combo cartridge.
P/N 12-02268..... $47.00

3M™ DISPOSABLE PROTECTIVE COVERALL 4530

The 3M™ Protective Coverall 4530 is disposable safety work wear made of lightweight, breathable polypropylene with flame resistance. Designed to be worn over primary FR garments, it helps provide protection against dusts and light liquid splashes. Features: Breathable material to help reduce heat buildup and promote comfortable wear. Knit cuffs with elasticized waist and ankles for increased comfort and freedom of movement Three panel hood design for compatibility with complementary PPE. Two-way zipper with sealable storm flap Reinforced gusset for increased durability. Flame resistant treatment offering secondary protection against heat and flames Anti-static coating on both sides.

L..... P/N 12-02663.....$6.25
XL..... P/N 12-02664.....$6.50
2XL..... P/N 12-02665.....$6.50
3XL..... P/N 12-02666.....$6.60
4XL..... P/N 12-02667.....$6.75

X-PLORE 3500 SERIES RESPIRATORS

The 3500 Series Mask is a premium half mask made of Draeger Flex Material. Clasped Slide-Down feature with a black neck strap.
Under the new particulate filter rules, there are three series of filters: N, R, and P. The N filters are Not resistant to oil; the R filters are resistant to oil; and the P filters are oil proof.
The N series of filters is appropriate for airborne particles such as silica or lead, when there are no oil-based products also in the air.
For example, an N series filter would be recommended during the removal of old lead paint. However, for spraying an oil-based lead paint, an R or P series filter would be recommended as protection against the airborne mist of oil-based solvent.
The R series (resistant to oil) should only be used for a single shift when solvent or oil mist is present in the air. This filter resists oil but may break down in contact with oil or solvent over a long time.
When using P series filters, check the manufacturer's instructions to determine how long the filter can be used when airborne particles are present. NIOSH originally thought that P series filters were oil-proof but recent tests have found there may be some breakdown of the filter material with long-term oil exposure.
Note: N, R, and P filters do not provide protection against organic vapors.

3500/N95 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each N95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02264..... $38.50

3500/R95 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each R95 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02265..... $40.50

3500/P100 RESPIRATOR KIT

Kit includes 3500 Mask, 2 each P100 filter pads, 2 each filter pad retainers, and 2 each filter pad bases. P/N 12-02266..... $54.50

REPLACEMENT PARTS FOR 3300/3500 KITS

Description	Part No.	Price
3300 Series Mask Only	12-02253	$12.50
3500 Series Mask Only	12-02254	$25.50
N95 Filter Pad Only	12-02255	$1.65
R95 Filter Pad Only	12-02256	$2.50
P100 Filter Pad Only	12-02257	$9.50
Filter Pad Retainer	12-02258	$2.35
Filter Pad Base	12-02259	$2.65
P100 Combination Cartridge Sold in pairs	12-02260	$21.50

3M™ DISPOSABLE PROTECTIVE COVERALL 4520

The 3M disposable protective coverall 4520 key features include: Breathable material (SMMMS) to help reduce heat stress and comfortable wear. Elasticated waist, ankles, and wrists for convenience and freedom of movement. Three panel hood design for compatibility with complimentary PPE. Two-way zipper with storm flap for convenience and to help provide additional protection. Anti-static coating on both sides. Protect against light liquid splashes and hazardous dusts.

XL..... P/N 12-02692.....$4.35
2XL..... P/N 12-02693.....$5.85
4XL..... P/N 12-02694.....$4.55

3M™ DISPOSABLE PROTECTIVE COVERALL 4540

The 3M™ Protective Coverall 4540 is disposable safety work wear made of a high quality laminated material with a breathable back panel for improved air circulation.Protection against light liquid splashes and hazardous dusts. Features: Constructed of a low-linting, non-woven, laminated microporous material with anti-static coating on both sides, Knit cuffs with elasticized waist and ankles for increased comfort and freedom of movement Three panel hood design for compatibility with complementary PPE Two-way zipper with sealable storm flap Reinforced gusset adds extra durability Breathable back panel to help improve air ventilation and reduce heat buildup.

L..... P/N 12-02658.....$6.50
XL..... P/N 12-02659.....$6.50
2XL..... P/N 12-02660.....$5.50
3XL..... P/N 12-02661.....$5.75
4XL..... P/N 12-02662.....$5.75

TO

OXYGEN SYSTEMS

AEROX HIGH-DURATION AVIATION OXYGEN SYSTEMS

Aerox 2D system

Aerox 4M system

Add to your flying comfort by using oxygen at altitudes as low as 5000 ft. Aerox Oxygen Systems include lightweight aluminum cylinders, regulators, all hardware, flow meter, and nasal cannulas (masks available as option). Oxysaver oxygen saving cannulas & Aerox Flow Control Regulators increase the duration of oxygen supply about 4 times, and prevent nasal irritation and dryness. Complete brochure available on request.

500 SERIES REGULATOR – AN AIRCRAFT SPRUCE EXCLUSIVE!

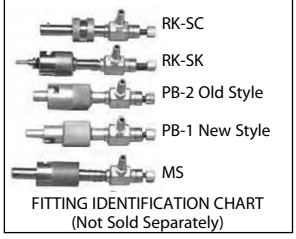
- Low profile
- 1, 2, & 4 place
- Standard Aircraft filler for easy filling
- Convenient top mounted ON/OFF valve
- Equipped with Aerox standard plug sockets
- Over pressure safety valve
- Built in cylinder pressure gauge

COMPLETE AEROX SYSTEMS (ADJUSTABLE FLOW)

Part No.	Model	Description	Price
13-18895	1A	1 outlet, 6 Cu Ft. Cyl. w/Flow Meter & Cannula	$377.60
13-18896	1C	1 outlet, 9 Cu. Ft. Cyl. w/Flow Meter & Cannula	$385.60
13-18897	1D	1 outlet, 13 Cu Ft. Cyl. w/Flow Meter & Cannula	$396.00
13-18898	2A	2 outlet, 6 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$464.80
13-18899	2C	2 outlet, 9 Cu Ft. Cyl. w/Flow Meters & Cannulas	$468.80
13-18900	2D	2 outlet, 13 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$477.60
13-18901	2E	2 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas	$495.20
13-18902	2M	2 outlet, 22 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$513.60
13-18903	4C	4 outlet, 9 Cu Ft. Cyl. w/Flow Meters & Cannulas	$580.00
13-18904	4D	4 outlet, 13 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$652.00
13-18950	4E	4 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas	$663.20
13-18906	4M	4 outlet, 22 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$666.40
13-18915	6M	6 outlet, 22 Cu Ft. Cyl. w/Flow Meters & Cannulas	$848.80
13-18905	6E	6 outlet, 33 Cu. Ft. Cyl. w/Flow Meters & Cannulas	$1,011.20

AEROX ACCESSORIES

Part No.	Description	Price
13-18910	CC Oxysaver Cannula	$26.85
13-18960	MSK-C Rebreather Mask (Child)	$8.00
13-18920	CR-A Regular Cannula	$6.40
13-18970	Metal Clamp Bracket for 13 or 22Cft cyl	$33.80
13-18930	CR-C Reg. Cannula (Child)	$6.40
13-18940	MSK-A Rebreather Mask	$9.97
13-03271	Aerox Oxysaver Pendant	$28.75
13-08023	MSK-A Rebreather Mask Child	$9.50
13-07737	1 Place Regulator With Gauge For 540 Valve	$197.50
13-07735	2 Place Regulator With Gauge For 540 Valve	$298.00
13-07736	4 Place Regulator With Gauge For 540 Valve	$354.00



FITTING IDENTIFICATION CHART (Not Sold Separately)

AEROX RETROFIT KITS FOR BUILT-IN SYSTEMS OR OTHER PORTABLES

1.) Oxysaver® Cannula—this comfortable device may be used in place of your mask up to 18,000 ft. MSL. It has a conserving feature which can extend your oxygen supply by up to four times. 2.) Aerox Flowmeter/indicator—this combination device conveniently reads both mask and cannula flow rates in MSL altitude. 3.) Aerox Adjustable Flow Restrictor—a thumb screw operated needle restrictor valve allows you to precisely control flow. Shown are most of the connectors for general aviation. If you want us to supply the connector, be sure to indicate which is your type.

Model	Retrofit Kits	Part No.	Price
RK-SC	Retrofit Kit plus Scott type fitting SC	13-18992	$112.00
RK-PB-1	Retrofit Kit plus Puritan-Bennett type fitting	13-18994	$89.60
RK-PB-2	Retrofit Kit plus Puritan-Bennett type fitting	13-18995	$89.60
RK-SK	Retrofit Kit plus Sky-Ox fitting (new style)SK	13-18996	$94.75
RKCPC	Kit with CPC fitting for Cirrus	13-05152	$98.50
RK-SC	RK-SC with - Flow Meter Needle Valve Option	13-05582	$104.95
---	Retrofit Kit for Aerox 350/400 Regulators	13-00787	$74.40
---	Retrofit Kit for Medical Regulator	13-07740	$96.00

AEROX GLOW IN THE DARK FLOWMETER AND GAUGE

AEROX'S PATENTED GLO-TEC FLOWMETER - Precision Adjustable, Direct inline oxygen flow indicator with photoluminescent technology for extended night-time visbility. PN 13-05251 ..... $51.80

AEROX'S PATENTED GLO-TEC PRESSURE GAUGE - Pressure Gauge, 0-3,000 PSI, Rear Mount, with photoluminescent technology for extended night-time visibility. PN 13-05250 ..... $29.50

FLOW METER WITH NEEDLE VALVE P/N 13-04683 ..... $47.20

AEROX PRO-O2 EMERGENCY HANDHELD OXYGEN SYSTEMS

Provides oxygen until the aircraft can reach a lower altitude. And because Pro-O2 is refillable, there is no need to purchase replacement O2 cartridges. During short flights at altitudes between 12,500ft. MSL and 14,000ft. MSL where maneuvering over mountains or turbulent weather is necessary, the Pro-O2 emergency handheld oxygen system provides oxygen to extend these brief legs. Included with the refillable Pro-O2 is a regulator with gauge, mask and a refillable cylinder.

Pro-O2-2 (2 Cu. Ft./1 mask) ..... P/N 13-02735 ..... $328.00
Pro-O2-4 (2 Cu. Ft./2 masks) ..... P/N 13-02736 ..... $360.00

AEROX EMT-3 PORTABLE OXYGEN SYSTEM

A small portable system designed for the occasional user who wants something smaller and less costly than a full portable system. The EMT-3 is also ideal for use as an emergency oxygen system. The system lasts 25 minutes at 2.5 LPM @ 25,000 FT. P/N 13-12773 ..... $323.00

AEROX 4110-712 SERIES OXYGEN MASK WITH MICROPHONE

The 4110-712 Series continuous flow oxygen mask with microphone is intended for crew and passengers in the general aviation industry at a maximum altitude of 25,000 feet. Optional equipment includes industry standard fittings for connection to portable and built-in oxygen systems.

Description	Aerox No.	Part No.	Price
Small Without Microphone	4110-711-1	13-06652	$195.75
Medium Without Microphone	4110-711-2	13-06653	$194.75
Large Without Microphone	4110-711-3	13-06654	$195.95
Small	4110-712-1	13-06655	$409.00
Medium	4110-712-2	13-06656	$423.00
Large	4110-712-3	13-06657	$431.00

AEROX SMOKE GOGGLES

Aerox has introduced Smoke Goggles with face forming elastomer seals to keep smoke out. Aerox Smoke Goggles are the choice of the U.S. Special Forces. The case features reflective tape to make goggles easy to locate as well as a velcro strip on the back for mounting.

Goggles ..... P/N 13-06173 ..... $96.00
Soft Case ..... P/N 13-06174 ..... $80.00

BR-M AEROX BRACKET

Bracket Assembly, SS, with Lock, or Cyl Diameter (2 needed per system) P/N: 13-04033 ..... $37.00

AEROX FBO-1 FILLING STATION

Whether making money or saving it, the Aerox FBO-1 Cascade Filling System makes it easy to fill all types of aviation systems, from portables to jets. The FBO-1 comes complete with 2 CGA 540 cylinder connectors, 6' high-pressure (3000 psi) braided stainless filler line, contents gauge, flow restrictor and adapters to fit Puritan-Bennett, Scott, and CGA 540 filler ports. P/N 13-04534 ..... $360.00

AEROX CGA-540 SINGLE CYLINDER FILLING STATION - Transfills between cylinders quickly and easily. 6' braided stainless line, gauge, restrictor, and CGA 540 filler. P/N 13-04535 ..... $171.95

OPTIONAL BUILT-IN ADAPTERS

Image	Description	Part No.	Price
	Aerox Scott Built-in Adapter Option (Piper, Beech, Mooney)	13-04536	$60.00
	Aerox Puritan-Bennett Built-in Adapter Option (all other makes)	13-04537	$87.00
Portable System Filling adaptors for standard CGA 540 supply cylinders:			
	Aerox Scott Portable Filling Adaptor	13-04538	$65.00
	Aerox Puritan-Bennett Portable Adapter Option	13-04540	$87.00

AEROX SEAT BACK DELUXE CARRIER

Fitted case with quick release, all point webbing. Available for "A", "C", "D", "E", and "M" cylinders. Doubles as a carrier with built in rubber handle. Webbing can remain on the seat when the case is detached. Internal velcro strap holds cylinder securely. Accessory pocket on side holds webbing for easy storage. Available in black. P/N 13-18990 ..... $59.16

NORAL OXYGEN CANNULA CARRIERS

See www.aircraftspruce.com for our full line of Noral Oxygen Canula Carriers.

PS

OXIMETERS - FACE MASKS

AEROX DILUTER DEMAND MASK

Comes standard with an electret microphone and an inflatable Quick Comfort head harness that provides maximum comfort The mask features a carbon fiber construction, and soft silicon rubber. Connectors are available for most built in systems. This mask is easily mounted with the available carbon fiber stowage cup, aerox® is also able to manufacture a portable walk around system with the same outlet plug that is on your aircraft, so you can easily disconnect from the on-board system and plug directly into a portable system allowing mobility. P/N 13-12359.....$3,850.00

PULSE OXIMETER CO DETECTOR 455

Designed for all aircraft with limited panel space. This small pulse Oximeter with CO Detector mounts easily in most panels and transmits data to the MFD'S via RS232. Current MFD manufacturers include Electronics International, Advanced Flight Technologies, Grand Rapids Instruments and on upcoming releases of Avidyne Entegra Release 9. The unit transmits the pilot's blood oxygen levels, heart rate statistics, CO Level, Cabin temperature and Cabin Altitude to the MFD's display units. The pilot inserts an index finger in the unit and quickly gets readouts so he/she can determine his/her general physical and his environmental condition. Aero-455 reminds the pilot when he/she passes 10K and every 30 minutes above 10K. P/N 11-07993.....$999.00

ONYX VANTAGE FINGERTIP PULSE OXIMETER

You can now get a trustworthy self-contained fingertip pulse oximeter with a 4 year warranty at an affordable cost! You don't have to settle for a cheap pulse oximeter that may break the first time it's dropped and/or give you erratic and unreliable oxygen saturation statistics. Small and lightweight, the 9590 can be carried in your pocket and will deliver your blood oxygen saturation within seconds.

P/N 13-15691.....$179.00

EDS-2IP BUILT-IN PULSE DEMAND OXYGEN SYSTEM

Kit includes the low-profile instrument panel or overhead-mountable EDS 2ip control head unit with a 2.25" X 2.25" form factor, two (2) remote-mountable oxygen outlet distributor units, the new IPR (Intelligent Peripheral Regulator) with light-weight carbon-fiber-wrapped cylinder with a 48 cu. ft. capacity allowing many round-trips without oxygen refills. In addtion, masks, cannulas, as well as necessary hardware and tubing are included. The pilot station comes with, FAA-CA-MI flight-level 250 tested 'Pulse-Demand' ALPS FaceMask that can be upgraded with a noise-cancelling microphone at any time. You can add the Alps face mask with or without microphone for your co-pilot as well.

EDS-4ip built-in Pulse Demand oxygen management systems are complete kits includes everything in the EDS-2IP but with the EDS 4ip control head unit with a 2.25" X 3.125" vertical form factor, and four (4) remote-mountable oxygen outlet distributor units

NOTE: The EDS ip systems automatically operate from a 12 or 24 Volt system at a mere 250 ma. of current. Therefore, if not specified, during your order the IPR will come with a 12 volt valve and the schematics will instruct that it be powered from the control head, via pin-19. The most preferred configuration. Otherwise the valve for the IPR must be specified for either 12 or 24 volt operation if you decide to power the IPR valve through system power and not from the control head.

EDS-2IP..... P/N 13-05745.....$5,295.00
EDS-4IP (Shown)..... P/N 13-05746.....$6,795.00

AEROX OXYGEN CONSERVING SYSTEM

Intended for use with current portable oxygen systems. Maximum Oxygen Duration with Minimal Effort. The device uses negative inspiration pressure to trigger pulse oxygen. Completely mechanical, no batteries required. When the user inhales, a supply of oxygen is delivered, simple, safe, and effective, reducing the demand on the users standard portable supplemental oxygen system, and increasing duration times. Includes a convenient strap for wearing around your neck. Outlet Hose with Flow Indicator, Inlet Hose with aerox® , CPC, or Skyox Plug-in Fittings.

P/N 13-09019.....$398.00

FINGER PULSE OXIMETER

MD300 C201 is intended for noninvasive spot-check measurement of function oxygen saturation of arterial hemoglobin(SpO2). It can be used with adult and pediatric and widely used in family, clinic and hospital. Features; • SpO2%, PR are displayed on screen. • Simple and convenient operation • Light, compact (the weight is 50g including batteries) Low power consumption, two AAA batteries can be continuously Operated for 30 hours • Indication of low power consumption • Two display modes P/N 13-05666 ..... $84.95

MOUNTAIN HIGH AVIATOR STANDARD CANNULA

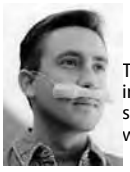
The Aviators Cannula is calibrated for use with the MH-4 flowmeter or any other device calibrated to the standard protocol of 1 liter per minute per 10,000 ft. per FAA-FAR 23.1447.

This Cannula works great with a headset! P/N 13-11590 .....$5.95

MOUNTAIN HIGH FLOWMETER MH-4

The MH-4 has two altitude flow scales. The left (compressed) scale is calibrated for the Oxymizer™ cannula and is limited to flight of 18,000 ft.and below. The right scale is calibrated for a standard cannula or facemask up to 25,000 ft. P/N 13-06128 ..... $69.50

MOUNTAIN HIGH OXYMIZER CANNULA



The Oxymizer 'M' type (mustache-style) oxygen-conserving cannula is the most popular version. The Oxymizer is standard issue with our XCR and XCP systems and may work with almost any adjustable constant flow regulator.

P/N 13-11592 ..... $28.50

MH E-Z BREATHE II BOOM CANNULA EDS FOR PULSE DEMAND

Mountain High has redesigned their Boom Cannula system to make it even better. The redesigned nylon boom arm affixes to your headset with a ball mount and adhesive pad. It can swivel about and slides in and out for best fit. The new improved arm incorporates an adjustable friction lock to eliminate slippage. The nasal tips and the entire feed-tube assembly are easily replaceable, as well as the aluminum mount ball. The arm can be easily removed from the headset when not in use. P/N 13-13067 ..... $98.95

MOUNTAIN HIGH ALPS FACE MASK

MH ALPS FaceMask and the MH ALPS-M (for microphone) FaceMask. The ALPS-M is outfitted with an electronic "Clear-Speak" ambient noise-canceling microphone that enables pilots to fly with safety and comfort with clear, crisp voice communication and is compatible with most aircraft systems. The mask is easy to put on and exceptionally comfortable as it does not require a polyvinyl bag. The ALPS or the ALPS-M FaceMask can be used with any of the MH oxygen systems.

Alps Constant Flow Feed Tube Use with MH-4 Flowmeter only
P/N 13-11388.....$4.85

Alps EDS Style Feed Tube..... P/N 13-13098.....$4.85

Description	Part No.	Price
Facemask Med.	13-04155	$169.80
FacemaskSmall	13-05136	$169.90
Facemask Large	13-05137	$169.75
Facemask w/ Mic Small	13-05134	$367.00
Facemask w/ Mic Med.	13-05135	$367.00
Facemask w/ Mic Large	13-04156	$382.00

NATURAL BOOST OXYGEN

Altitude or Mountain Sickness is a form of Hypoxia-a condition where the body is deprived of an adequate supply of Oxygen.

Recommended remedies for Altitude Sickness include proper hydration, abstaining from alcohol consumption, traveling back to lower altitudes, and SUPPLEMENTAL OXYGEN.

From an article in the Parker Adventist Hospital Quarterly in Parker, Colorado- "Ailing from the Altitude" : "And, yes, taking that "shot" of oxygen sold in mini-canisters at convenience stores or a mountain 'oxygen bar' can help alleviate symptoms Let Boost Oxygen help. Boost Oxygen is 95% Pure Oxygen and a few deep breaths can help you stay at your best.

4 ounce .....P/N 13-12975 .....$9.75
20 ounce .....P/N 13-12976 ..... $12.50

PS

OXYGEN SYSTEMS

MOUNTAIN HIGH XCP SYSTEMS

The MH-XCP Constant Flow series is our most economical single and multi-place, portable oxygen system for general aviation. Weight is kept to a minimum by our low profile, light weight regulators, MH-3 or MH-4 Flowmeters and Cylinders. The XCP systems come complete with Cylinder(of your choice), Regulator, Mountain High MH-3 or MH-4 Flowmeter, Oxymizer™ cannula, facemask, tote bag and cylinder carry case for easy transport and seat back mounting. Full-Pack The XCP System can be used up to 25,000 ft. with the MH-4 Flowmeter and Facemask. Choose the MH-3 Flowmeter fo flights up to 18,000 ft Each XCP System Includes: • Instructions • Cylinder with Valve, Gauge and carry case. • Pressure reducing Regulator with self sealing outlet for each user. • MH3 or MH4 Flow-Meter (Your choice when ordering) • Oxymizer (oxygen conserving) Cannula.• Facemask • Tote-Bag.

Model	Description	Part No.	Price
00XCP-0064-34	682 liter (24 cu. ft.) 4-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03657	$998.00
00XCP-0064-32	682 liter (24 cu. ft.) 2-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03658	$822.00
00XCP-0064-31	682 liter (24 cu. ft.) 1-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03659	$629.00
00XCP-0060-34	415 liter (15 cu. ft.) 4-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03660	$870.00
00XCP-0060-32	415 liter (15 cu. ft.) 2-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03661	$711.00
00XCP-0060-31	415 liter (15 cu. ft.) 1-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03662	$542.00
00XCP-0054-31	180 liter (6 cu. ft.) 1-place carry-on system with Full-Pack padded cylinder carry/strap-down case	13-03663	$513.00

MOUNTAIN HIGH HANDHELD OXYGEN SYSTEM

The CO-PILO2T oxygen system is a small, light-weight, hand-held oxygen system. Precision manufactured in Japan, this unit was especially designed for supplemental breathing while at high altitudes. The regulator has an on/off and volume control knob adjustable from off to a max setting of 2-ltr./min. which will last aprox. 9 minutes. The removable face mask can be replaced by an optional Oxymizer cannula for continuous "hands off" operation. When using the Oxymizer cannula each 18 liter replacement cylinder lasts up to 30 minutes at 15,000 ft. The regulator can hold a cylinder for several months without any noticeable drop in pressure. Cylinders can be changed by hand. Weight with cylinder 17oz. Cylinder weight 9.5oz.....P/N 13-01016.....$207.95
Single 18 Liter Replacement Cylinder.....P/N 13-02222.....$24.50
Pack of 3 18 Liter Replacement Cylinders.....P/N 13-13093.....$58.00

MOUNTAIN HIGH EDS O2D1 OXYGEN SYSTEMS

The EDS-02D1 System enables the general aviation pilot to fly at pressure altitudes up to 25,000 feet with safety and comfort. The EDS-O2D1 digital Pulse- Demand™ system reduces Oxygen consumption dramatically. Different from the "standard" constant flow systems, the EDS-O2D1 Pulse-Demand™ system wastes no Oxygen during the breathing cycle when oxygen is is not being delivered to the lungs. The average user will enjoy a duration increase of two to three times compared to the constant flow systems. The built in Barometer adjusts for Altitude increase while reducing the pilots work load. The unit operates for up to 100 hours on two AA batteries. The EDS-O2D1 should be used with any of our XCR, XCP, or 4-place FPR regulator. for correct pressure and oxygen delivery. The low-pressure service line is a high quality polyurethane line that is kink-resistant and flexible under varying temperatures. The cannula, face mask and service line connect to the EDS unit via color-coded "Quick-Connects" providing an air-tight fitting by hand. These fittings can be connected and disconnected many times. With the optional XCP connecting kit, the EDS can be used with an XCP system at the same time flow meters are being used. In addition, the optional ALPS Facemask with or without microphone, is the perfect addition to any EDS system. All systems are shipped empty.

Model	Description	Part No.	Price
00EDS-0084-01	EDS-O2D1 with CFF-480 Silica Cylinder and XCR-540 regulator with tote bag - 1 Place	13-02387	$1,545.00
00EDS-0054-01	EDS-02D1 with AL-180 Aluminum Cylinder and XCR-540 Regulator with tote bag - 1 Place	13-03668	$867.00
00EDS-0002-01	EDS-O2D1 with KF-011 Kevlar cylinder and XCR-540 regulator with tote bag - 1 Place	13-03666	$1,418.00
00EDS-0004-01	EDS-O2D1 with CFFC-022 carbon fiber cylinder, XCR-540 regulator with tote bag - 1 Place	13-03665	$2,095.00
00EDS-0004-02	(2) EDS-O2D1 with CFFC-022 carbon fiber cylinder, XCR-540 regulator with tote bag - 2 Place	13-03670	$2,687.00
00EDS-0060-02	(2) EDS-O2D1 units with AL-415 Aluminum cylinder, FPR-540 regulator with tote bag - 2 Place	13-03671	$1,565.00
00EDS-0084-02	(2) EDS-O2D1 and CFF-480 Silica cylinder, XCR-540 regulator with tote bag - 2 Place	13-03672	$2,229.00
00EDS-1084-00	EDS-02D1 Kit only- Regulator or Cylinder Not Included - 1 Place	13-02389	$629.00
00EDS-1052-00	EDS-02D1 with XCR-540 regulator	13-02390	$768.00
00EDS-1054-01	EDS-02D1 with XCR-540 regulator with gauge	13-02391	$794.00
00EDS-1062-02	EDS-O2D1 with XCR DIN-477 (Euro Inlet) Regulator with gauge	13-02392	$865.00

MOUNTAIN HIGH EDS O2D2 OXYGEN SYSTEMS

The MH EDS-O2D2 Pulse Demand Oxygen Delivery System is the only single unit, portable, two-place oxygen system currently available for general aviation. A variety of options allow you, the pilot, to customize a system to your specific needs. The O2D2 kit comes with (3) AA batteries, 2 standard cannulas, 2 flare tip cannulas, and 2 face masks all in a handy carry bag.

Note: Our EDS O2D2 and O2D1 are portable systems designed and calibrated to be used with our regulators (~15 psig. dynamic to 25 MAX. psig. static). However, if you wish to operate from the outlets of a built-in system, we offer the EDS-STR stabilizing regulator. This will allow our portable EDS systems to operate with built-in systems that supply up to 90 psig. to the outlets in the aircraft

Model	Description	Part No.	Price
00EDS-2060-02	EDS-O2D2 with AL-415 Aluminum cylinder and XCR-540 regulator - 2 Place	13-05068	$1,052.00
00EDS-2062-02	EDS-O2D2 with AL-647 Aluminum cylinder and XCR-540 regulator - 2 Place	13-05069	$1,091.00
00EDS-2053-02	EDS-O2D2 with AL-180 Aluminum cylinder and XCR-540 regulator with holster pack	13-07313	$995.00
00EDS-2060-04	(2) EDS-O2D2 units with AL-415 Aluminum cylinder, FPR-540 regulator - 4 Place	13-07315	$1,922.00
00EDS-2062-04	(2) EDS-O2D2 units with AL-647 Aluminum cylinder, FPR-540 regulator - 4 Place	13-07316	$1,960.00
00EDS-2064-02	EDS-O2D2 with AL-682 Aluminum cylinder and XCR-540 regulator - 2 Place	13-07317	$1,091.00
00EDS-2064-04	(2) EDS-O2D2 with AL-682 Aluminum cylinder, FPR-540 regulator - 4 Place	13-07319	$1,960.00
00EDS-2002-02	EDS-O2D2 with KF-011 Kevlar cylinder and XCR-540 regulator - 2 Place	13-07321	$1,475.00
00EDS-2004-02	EDS-O2D2 with CFFC-022 carbon fiber cylinder, XCR-540 regulator - 2 Place	13-07323	$1,985.00
00EDS-2084-02	EDS-O2D2 and CFF-480 Silica cylinder, XCR-540 regulator - 2 Place	13-07324	$1,475.00
00EDS-2000-00	EDS-02D2 Kit only- Regulator or Cylinder Not Included	13-07312	$798.00
00EDS-2084-02	EDS-O2D2, CFF-480 Silica cylinder, XCR DIN-477 (Euro Inlet) regulator,	13-07326	$1,552.00

PS

MOUNTAIN HIGH TRANSFILLER UNITS

TR-55 00GSE-1008-00 Standard length 18 inches. The TR-55 is the most economical way to fill your cylinder. One side has a CGA-540 nut & nipple with an O-ring seal, while the other end is equipped with a large hand nut with bare nipple. This allows you to slowly and safely bleed the line so the fittings can be easily removed from the cylinder.
P/N 13-03923.....$105.95

TR-75B 00GSE-1012-00 Standard length 24 inches. The TR-75b is our most popular personal transfiller. It is equipped with O-ring seals on both of the CGA-540 (oxygen) ends for a positive and air-tight fit by hand. A handy bleed valve is included to relieve the pressure in the system so that the fittings can be easily removed from the cylinder without damage to the O-ring seals. P/N 13-03924.....$217.95

TR-95B 00GSE-1016-00 Standard length 48 inches. The TR-95b is an economical transfilling system for soaring and flying clubs where many cylinders are serviced frequently. Both connecting ends have O-ring seals for a positive air-tight fit. The pressure/contents gauge shows how much oxygen remains in the master (rental) cylinder.
P/N 13-03925.....$314.00

02 TRANSFILLER FBO KIT - The standard kit comes with a non-venting style regulator, and the four most common fill adapters that you will need. Incorporates a flow restrictor to prevent filling too fast, as well as built-in filters. All Components are cleaned and ready for Oxygen use.
With 8t. Hose.....P/N 13-14949.....$1,260.95
Without Hose.....P/N 13-12735.....$1,155.00

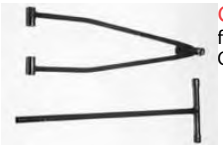
TA-916-S Adapts CGA-540 to the Scott fitting (9/16-18 threads). Commonly known as the Scott 26875, 5020-1 Airline or AS1046 fitting. A socket is on the CGA-540 end to attach to transfiller lines. P/N 13-14773.....$93.75

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

GROUND SUPPORT TOW BARS



CESSNA - This two piece telescoping tow bar fits all Cessnas with 5/8" lugs on nosegear. Overall length 42.5", collapsed 24".
P/N 13-01800..... $46.85

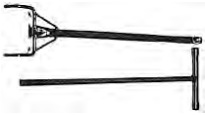
MOONEY - A simple "T" handle design for the Mooney axle. Overall length 33.5".
P/N 13-02000..... $48.95

CHEROKEE - This one piece tow bar has a retractable locking mechanism that gives a positive lock when installed. Overall length 31". P/N 13-01600..... $46.50

BEECHCRAFT - The compact design of this tow bar makes it very popular among Beech owners. Overall length 38", collapsed 21.5". P/N 13-01900..... $48.60

ARROW - This offset "T" handle design fits into the Arrow axle making it a simple and easy design to use. Overall length 33".
P/N 13-01700..... $46.75

TWIN CESSNA - The extra length provides extra nose clearance and leverage for Twin Cessnas and remains very compact. Overall length 55", collapsed 34". P/N 13-01850..... $47.85



TWIN PIPER - (HH-007) Piper Twin Comanche, Apache, Aztec, and Navajo Towbar. Two section until 28" collapsible, 49-1/2" overall length.
P/N 13-01778..... $49.85

COMANCHE - The same as our P/N HH-007 except one piece construction. Overall length 33". P/N 13-02100..... $49.85

DELUXE CESSNA - The deluxe Cessna towbar is very popular and designed for those who demand the ultimate in convenience and durability. Spring loaded forks allow easy one handed engagement without getting on your hands and knees. Length 45.5" extended, 26" collapsed. Wt. 3.75 lbs. Ideal for Cessna RGs Including 210 series.
P/N 13-01540..... $54.95

DUTCHESS/PIPER - Fits Dutchess and Piper nose gear axle. Telescoping design provides extra nose gear clearance. Overall length 48", collapsed 28". P/N 13-02210..... $47.50

DELUXE PIPER - The deluxe Piper towbar offers all the features of a standard Piper towbar plus the convenience of a two-piece design. When extended, this model provides additional propeller clearance and leverage. Length: 42" extended, 23" collapsed. Wt. 3.5 lbs. P/N 13-01550..... $54.95

UNIVERSAL TOW BAR WITH CLEVIS HITCH

CESSNA/ BEECH/ MOONEY - This universal tow bar is excellent for use with tug, tractor, or by hand. It fits most Cessna singles & twins with 5/8" lugs, Beech singles and twins with 1/4" lugs, all Mooneys, Twin Commanders, Lake and Commanche. Slide lock quickly adjusts and holds firmly. P/N 13-02350.....$169.85

PIPER - Same design as the universal tow bar above, this towbar fits Piper single fork design, Arrow, Malibu, Lance, Seneca, and Seminole. Slide lock quickly adjusts and holds firmly. P/N 13-02351.....$159.95

SCOTT TAILWHEEL - A tow bar designed for aircraft using a Scott 3000 series tailwheel. Overall length 48", collapsed 28".
P/N 13-02205..... $53.95

BEECHCRAFT AXLE - This two piece tow bar is designed for use in Beechcraft axles. Overall length 48", collapsed 27".
P/N 13-02215..... $54.95

CHEETAH/TIGER - This tow bar is designed to fit Grumman aircraft. Its collapsible design makes it easy to fit in the baggage area. Overall length 43", collapsed 26". P/N 13-02200..... $59.85

ERCOUPE -Specially designed for Ercoupes. This tow bar has a spring loaded lever action for ease of operation. Overall length 46.5", collapsed 28.5". P/N 13-01580..... $61.95

1-1/8" AXLE - This is a universal tow bar designed for aircraft with 1-1/8" axles such as Cessna Skymaster and Piper Seneca. Overall length 56", colapsed 33". P/N 13-02110..... $59.85

COMMANDER - This model fits Rockwell 112 and 114. Spring loaded forks for ease of operation. Overall length 46.5", collapsed 28.5".
P/N 13-01570..... $51.75

DELUXE MOONEY - The deluxe Mooney towbar is a longer, two piece version of a standard Mooney towbar. Attractive black caps accentuate deluxe appearance. Length: 38", collapsed 21". Wt. 3 lbs. P/N 13-01560..... $49.95

UNIVERSAL - For the FBO this is an ideal hand held universal tow bar. Fits Cessna, Beech, Piper, Scott Tailwheel and many others. Overall length 57", collapsed 34". P/N 13-02250..... $87.50

VIKING - Designed especially for Bellanca Viking axle. Collapsible design and spring loaded fork. Overall length 46.5", collapsed 28.5".
P/N 13-02220..... $72.75

DELUXE BEECHCRAFT - Spring loaded forks for ease of operation. Overall length 47", collapsed 28". P/N 13-01905..... $64.75

FBO UNIVERSAL TOW BAR WITH RING HITCH T-100

This heavy duty universal tow bar is standard equipment for FBOs. Fits most Piper, Cessna, Beech,Mooney, AeroCommander, and many others. The adjustable fork allows you to extend the fork assembly from 3" to 10". This tow bar is extra long at 7 ft. 6 inches.
The T-100 is not made for specific aircraft. It has spring loaded adapters that will fit and 1/4" to 5/8" towpins on the aircraft axle. This will not work with aircraft that have tow pins on the landing gear. P/N 13-02355..... $237.95

AIRCRAFT WINCH & MOUNTING KIT

AIRCRAFT WINCH - Hook cable to tail tie-down ring and press button. Easily moves aircraft up to 3,000 lbs. rolling weight. Includes wall mount. If a floor mount is desired order P/N 13-06124. Order bracket separately. Comes with 100' of cable and 75' of control cord and has an automatic safety shut off. Cable speed is 30 feet per minute. Voltage 110 DC..... P/N 13-01764..... $418.00

HEAVY DUTY AIRCRAFT WINCH - Winch includes metal wind up drum, 100' of cable 125' of control cord. Moves aircraft up to 6,000lbs. Includes a wall mount. If floor mount is desired P/N 13-06124 must be ordered. Code 7
P/N 13-06125..... $448.00

AIRCRAFT WINCH MOUNTING KIT - Aircraft Winch Mounting Kit Everything you need to secure the winch to the floor. Mounting kit only. Can be used with P/N's 13-01764 and 13-06125 in a floor mount is desired.
P/N 13-06124..... $51.75

PS

TOW BARS

BOGERT TOW BARS (BOGI-BARS)

Light enough to stow Built from a combination of steel for maximum durability comfort grips on the handle and spreader bar chip resistant red bar will look great for years. Operation: extend the handle easily with high shear wick release pin apply forward pressure on the spreader bar to open the wishbone jays. Line up the Bogi-Bar attachment at the tow points or axle depending on model. Release the tension on the spreader bar and you are locked on! The tow bar will not slip off the plane. Reverse for removal.

TAIL WHEEL AIRCRAFT				
Model	Fits	Extended Length	P/N	Price
4-API	Aircraft Products Tailwheel	48"	12-02097	$113.95
4-ABI	Alaskan Bushwheel 3400B	48"	13-06106	$108.50
04M-XP	Cessna XP Modification	48"	13-06107	$106.75
4-TDG	Scott 3200 & 3400/ABI 3200/3400	48"	13-10000	$108.50
4-F24	Fairchild 24, Beech Stagger Wing	48"	13-02410	$115.75
4-RV	Vans RV3, RV4, RV6 & RV8	48"	13-02408	$108.50
NOSE WHEEL AIRCRAFT				
Model	Fits	Extended Length	P/N	Price
4-35	Beechcraft- Bonanza, Debonair, Duchess, Duke & Skipper	49"	13-10030	$108.50
4-19/23B	Beechcraft-Musketeer, Sport, Super, Sierra & King Air	48"	13-01808	$109.00
4-17/30	Bellanca-Viking Series	48"	13-01809	$109.75
4-172	Cessna 150, 152, 172, 175, 177, 182, 310R, RV-4	48"	13-10040	$108.50
4-206	Cessna 205, 206 & 207	48"	13-10060	$108.50
4-210	Cessna 172RG, 177RG,182RG & 210 Series	48"	13-10050	$137.75
4-182-XL	Cessna 182 S (1996 and up) and T (2001 and up) models with long nose.	55"	13-11389	$119.95
4-SR	Cirrus SR 20 &22	48"	13-06108	$108.50
4-AA	Gulfstream American AA1 & AA5	48"	13-02407	$108.50
4-Lake	Lake Amphibian	48"	13-02411	$136.75
4-Moon	Mooney Aircraft	48"	13-01810	$109.75
4-24/30	Piper Comanche PA-24, PA-30 & PA-39 Also the Cherokee Six axle w/pants if tabs above wheel are broken	48"	13-10010	$108.50
4-22/28	Piper PA-22, & PA-28 Series (Not PA-28R)	48"	13-10020	$108.75
4-28R	Piper PA-28R Series - Hand Pull for dog-leg style	49"	13-02098	$24.95
4-34	Piper Seneca PA34 200/220/220T, and Aerostar 601P *handle extends to 78"	78"	13-01812	$183.00
4-PA46	Piper Malibu & Mirage– Vehicle Pull	72"	13-06112	$214.95
4-28R, 4-PA46	Piper PA-28R, PA- 32R, PA-46 Hand Pull Towbar. Malibu, Mirage, Meridiam and Saratoga Aircraft.	60"	13-11203	$213.95
4-RVA	Vans - RV6A, RV7A, RV8A, & RV9A	48"	13-01811	$108.50
4-LANCE	Lance Towbar	48"	12-02099	$188.75
4-20	Diamond DA20	--	13-06111	$107.75
4-DA40	Diamond DA40	--	13-06110	$125.80
4-DA42	Diamond DA42	--	13-06109	$196.75
4-RV10	Vans - RV10	48"	13-04282	$108.50
4-Socata	Socata Style Bogi Bar	49"	13-06113	$116.99
Agusta	Agusta Helicopter.Handle extends to 70"	70"	13-01813	$194.00

BOGI BAR EXTENDED T-HANDLE

Includes new grips and is 7" longer than the standard Bogi Bar T-Handle. The extra length can be quite beneficial for aircraft with extra-long noses like the Cessna 182 S (1996 and up) and T (2001 and up) models. Tall customers will find this T-Handle easier on the back since it lowers that overall angle of the tow. The Extended T-Handle works with any of the standard Bogi-Bars and will increase the overall length to about 55". Model 4-TXL. P/N 13-11199..... $34.95

BRACKETT AIRCRAFT TOW BARS

MODEL TH-5

The TH-5 is a scaled down version of the TR-3 tractor towbar. Excellent for operators and tee hangar owners who need a towbar which is lightweight (14 lbs), has good large pulling handles, and is sturdy enough for towing Cessna 150's to 310's. Size: 74"L. Wt: 14 lbs.

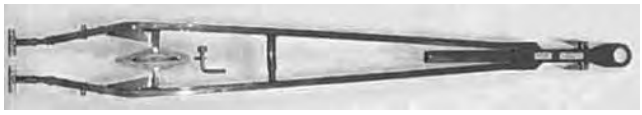
Ring Hitch..... P/N 13-10110 ..... $367.00
Ball Hitch ..... P/N 13-10111 ..... $387.00
Clevis Hitch..... P/N 13-01884 ..... $367.00

MODEL TR-6

Excellent for towing aircraft such as the T-6, P-51, Stearman, Staggerwing Beech, or any aircraft with 3/4" or larger eye bolts. Length: 12' Spread: 12 ft. Weight: 62 lbs.

Ring Hitch..... P/N 13-10131 ..... $840.00
Ball Hitch..... P/N 13-10130 ..... $840.00

MODEL TR-34



The TR-34 has the light weight of the TR-3, and the strength of the TR-4. It has the same universal features that fit most aircraft from C-150 through aircraft up to 14,500 lbs. Wt: 35lbs. Available in 3 hitch styles.....

Ring Hitch (TR-34R) P/N 13-10085 ..... $597.00
Ball Hitch (TR-34B)..... P/N 13-01886 ..... $535.00
Clevis Hitch (TR-34C) ..... P/N 13-01887 ..... $539.00

TWA-10 Scott Tail Wheel Adapter (2 pcs. req)
P/N 13-10089 .....$21.90

MODEL TH-53 -

Features a tow bar length of 80" to 94" (extended). Wt: 22 lbs., Max. aircraft Wt: 7,000 lbs.

TH-53R Towbar w/Ring hitch..... P/N 13-03338 ..... $535.00
TH-53B Towbar w/Ball hitch..... P/N 13-03339 ..... $539.00
TH-53C Towbar w/Clevis hitch..... P/N 13-03340 ..... $523.00

MODEL TR-71, 72, & 73

Lightweight aluminum designed for Waco, Stearman, & Cessna 195 type aircraft. Length: 100", Spread: 90", Wt: 22 lbs. Hook dia: TR-71 (.850), TR-72 (1.25)

TR-71B Towbar w/Ball hitch ..... P/N 13-01907 ..... $586.00
TR-72B Towbar w/Ball hitch ..... P/N 13-01908 ..... $586.00
TR-73B Towbar w/Ball hitch ..... P/N 13-01909 ..... $586.00
TR-71R Towbar w/Ring hitch ..... P/N 13-01910 ..... $586.00
TR-72R Towbar w/Ring hitch ..... P/N 13-01911 ..... $586.00
TR-73R Towbar w/Ring hitch ..... P/N 13-01912 ..... $586.00

CUSTOM TOWBARS & OPTIONS FOR UNIVERSAL TOW BARS

Model	Description	Part No.	Price
TWA-10	Scott Tail Wheel Adapter (2 pcs. req.)	13-10089	$21.90
T-MU2-10	Kit-Crank & head assembly for converting TR-34 to TR-44	13-01890	$144.75
TWA-11	Tail Wheel Adapter for DGA-Staggerwing (2 pcs. req.)	13-01891	$22.90
T-4W	Wheel Set (Set of 2) for TR-34	13-01892	$108.50
T-375	Adapter .375" for Aerospatiale-Trinidad, Tabago (2 pcs.)	13-01893	$19.50
T-475	Adapter .475" Outer Diameter (2 pcs. req.)	13-01894	$17.90
T-625	Adapter .625" for Augusta 109 & Others (2 pcs. req.)	13-01895	$17.85
T-750	Adapter .750" for Commander 114, S-76 & Other	13-01896	$19.50
T-Maule	Adapter for Maule Tail Spring (1 pc. req.)	13-01897	$86.75
T-34-04	Shock Absorbing Ring Hitch (1 pc. req.)	13-01899	$167.75
TR-PC	Towbar; Pilatus PC-12, 3 pcs., 30 lbs.	13-01686	$598.00
TR-PCS	Towbar; Pilatus PC-12, 1 pc., 19 lbs.	13-01903	$517.00
TR-S2	Towbar; Ayres; 3 pcs., 18 lbs.	13-01755	$335.00

PS

THE TAIL-DRAGGER DRAGGER

This manual tow bar has heavy-duty solid rubber 8-inch wide tread wheels and will move most tail-draggers up to 2,000 lbs. and tail wheel tires up to 10 inches in diameter. Options Available: 3rd Wheel for heavier ships, and RV tail wheel lift pin.

Tail-Dragger Dragger™ Features:
- Patented Design
- No Winches
- No Hydraulics
- No Metal To Metal Contact
- No Adapters Required
- Superior Traction
- 5 Second Loading & Unloading
- Will fit Almost Any Aircraft
- Tail Wheel Stays In Trailing Position
- Lifting Pins Grip & Lift Tail Wheel
- Maneuver In Any Direction
- Operator Has Good View Of Wingtips

Description	Part No.	Price
Standard tail Dragger	13-01510	$199.00
24V Electric Tail Dragger Dragger	13-03736	$1,695.00
Tail Dragger Dragger Gas	13-01824	$1,595.00

ACCESSORIES

Descriptions	Part No.	Prices
RV Tail Wheel Lift Pin	13-04936	$7.85

DELUXE 24-VOLT ELECTRIC TAIL DRAGGER-DRAGGER

The deluxe model comes with charger and batteries included so the unit is ready to be used immediately.
This powerful 24-volt electric tug has heavy-duty 11 1/2 -inch air wheels and will move most tail-draggers up to 6,000 lbs., tail wheel tires up to 16 inches in diameter. It utilizes a smooth twist-grip speed control for precise forward and reverse movements. Uses 2 garden tractor batteries hooked up in series.

P/N 13-07281.....$1,995.00

BOGERT UNIVERSAL BIG BOGI TOWBAR

The 04M-BBU is unique because it can attach to virtually any aircraft. It has interchangeable "Feet" that can be matched to any aircraft. Each of the "Feet" typically adapts to several models or series of aircraft and several sizes can be carried right on the tow bar. This is perfect for FBO's that deal with a variety of aircraft or aircraft owners that have more than one plane or shared hangars. "Interchangeable feet sold separately".

Description	Part No.	Price
Universal Big Bogi Bar	12-03168	$252.95
Jabiru Sport; Kit Fox	12-03171	$38.50
Cessna 150, 152, 172, 182, Vans, and many more	12-03172	$38.50
Duchess, PA-28R, Malibu, Mirage	12-03173	$38.50
Cirrus SR20, 22	12-03174	$49.50
PA22, 28, 32, Cherokee Six	12-03175	$38.50
Aerostar 601, Bellanca, Mooney	12-03176	$38.50
Glastar, Legend Cub, Rockwell	12-03177	$38.50
Alaskan Bushwheel, Scott 3200, 3400	12-03178	$38.50
Diamond DA-40	12-03179	$38.50
Diamond DA-20	12-03180	$49.50
Cessna 172RG, 177RG, 182RG, 210	12-03181	$49.50
Beechcraft Bonanza, 35	12-03183	$49.50

See www.aircraftspruce.com for complete application list

2" HITCH BALL RECEIVER

For the 12-03168 Universal Big Bogi Bar.
With Ring.....P/N 11-11516.....$69.00
With Clevis.....P/N 11-11517.....$69.00

NOSE WHEEL DRAGGER DRAGGER

The Nose-Dragger Dragger features a swing gate front roller (for easy loading), 10 ball bearing rollers (which push and guide the nose wheel), and does not require the use of adapters, winches, or hydraulics. Effortless ground handling is accomplished by its lightweight design and slow walking speed. The Nose-Dragger Dragger accepts nose wheels up to 600 x 6 (with or without wheel fairings), and no metal-to-metal or metal-to-fiberglass contact. Available in gas or electric power models. The 12V electric powered Nose-Dragger Dragger will accept aircraft up to 3,000 lbs. The Nose-Dragger Dragger Gas powered model accepts aircraft up to 6,000 lbs. Please call 1-877-477-7823 for freight quote.

Gas Powered, 6.5HP (up to 12,000 lbs).....P/N 13-05103.....$1,595.00
Elevtric Powered, 24V (up to 6,000 lbs).....P/N 13-04304.....$1,695.00
Electric Powered, 24V (up to 6,000 lbs).....P/N 13-03205.....$1,695.00

ACCESSORIES

Snow Chains.....P/N 13-04932.....$69.00
Battery Charger - 24V.....P/N 13-04934.....$105.95
Mag-Light / Head Lamp.....P/N 13-04935.....$58.75

DELUXE 24-VOLT ELECTRIC NOSE DRAGGER DRAGGER

This powerful 24-volt electric aircraft tug will fit and move any nose wheel airplane up to 6,000 lbs. without wheel fairings as well as those with wheel fairings that have 3" or greater of clearance from the fairing to the ground. It utilizes a smooth twist-grip speed control for precise forward and reverse movements. The Deluxe model (D) is shipped with batteries and a charger so the unit is ready to use immediately. Uses 2 garden tractor batteries hooked up in series. NDE-24D Deluxe Up to 6000 lbs. P/N 13-07278.....$1,995.00

HEAVY DUTY TOW BUDDY CORDLESS POWERBAR

Features:• No Flammable gasoline needed in hangar • Easy To Use • Infinite Speed Control • Versatile Applications • Push button forward and reverse controls • Nose gear quick attach for easy nose gear hook up. • The adjustable fork height fits virtually any light aircraft • Trickle charger for battery • Large 16 x 6.50 - 8 turf tire • For aircraft weight of 3500 to 4500lbs. P/N 13-04513.....$1,289.00

BRACKETT MULTI-LINK TOW BARS

User benefits: All tow bars and heads are interchangeable with other popular tow bar systems such as tronair© warranty on all materials and workmanship money saving alternative to multiple tow bars

Brackett aircraft's multi-link tow bar line consists of tow bars that utilize changeable heads which allow you to tow a large variety of turbo prop and jet aircraft. The tyga line offers a standard multi-link system for aircraft with maximum tow weights of up to 125,000 pounds. All heads and tow bars are interchangeable with many widely used multi-head tow bar systems. You now have a high quality and competitive source for tow bars, changeable heads, and accessories.

Description	Part No.	Price
TY-TB125 Multi-Link Towbar	13-04157	$1,557.00
TY-TB75 Multi-Link Towbar	13-04158	$1,195.00
TY-TB-FTD Flat Tire Dolly T/B	13-04159	$3,146.00

PS

TOW BARS – TUGS

ROBOTOW PORTABLE TOW BAR

Aircraft Spruce is pleased to offer the new all weather Robotow 24SL. It is lightweight (33 lbs.) and portable, making it ideal for carrying onboard your aircraft. When the Robotow's heavy duty all weather knurled drive drum is held against the nose wheel, the aircraft is easily moved. A trigger on the handle controls the speed while a switch reverses direction on command. Powerful, portable, and dependable, Robotow is an ideal motorized towbar for the aircraft listed below. Kits include Robotow, Battery, and Charger (US Charger or International Charger). Order axle adapters separately.

Description	Parts #	Price
Robotow 6420 24V Towbar Cordless Kit with International Charger	13-03896	$1,235.00
Robotow 6426 24V Towbar Cordless Kit with U.S. Charger	13-04222	$1,185.00
Robotow 6351 corded 120V, with 80ft. extension cord.	13-03897	$1,069.00
ACCESSORIES		
Robotow 6425 24SL 5 amp Battery	13-11264	$296.95
Robotow 6427 24SL 3 amp Charger	13-11265	$146.75
AIRPLANE ADAPTERS (SOLD SEPARATELY)		
Robotow Adapter Aero Commander	13-03904	$179.75
Robotow Adapter Beech 1 / Baron / Bonanza / Debonair Duke	13-03905	$103.75
Robotow Adapter Beech 2 / Queen Air / Twin Bonanza / Trigear 18	13-03906	$179.75
Robotow Adapter Cessna 1 / 150, 172, 182, 310, 340	13-03907	$103.75
Robotow Adapter Cessna 2/ 310R, 401, 414, 421	13-03908	$103.75
Robotow Adapter Cessna 3 / 182RG (Pre-1962), 206, 210 (Pre-1962)	13-03909	$103.75
Robotow Adapter Cessna 4 / 337, 303	13-03910	$179.75
Robotow Adapter Cessna 5 / 182RG and 210 (1962-1986)	13-03911	$179.75
Robotow Adapter Piper 1 / Apache, Comanche, Aztec, Navajo, Twin Comanche, Bellanca	13-03912	$103.75
Robotow Adapter Piper 2 / Colt, Cherokee, Tri-pacer	13-03913	$179.75
Robotow Adapter T28 Trainer	13-03914	$179.75
Robotow Adapter Navion	13-03915	$179.75
Robotow Adapter Commander 114B	13-03916	$179.75
Robotow Adapter Cessna Caravan	13-03917	$179.75
Robotow Adapter Trinidad	13-03918	$179.75

CESSNA TOWBAR EXTENSION

The "QUICK-FOLD COMPACT TOWBAR" also known as the "QFC--TowbarTM". No more back breaking, bend over towing. Simply attach the QFC-TowbarTM extension to your already existent Cessna tow bar and stand up straight. An added extension of 33". Folds flat and is stowed securely along side the factory tow bar. P/N 13-06722 ..... $86.75

POCKET TOW TAILWHEEL LEASH

Pocket tow makes tail wheel aircraft maneuvering easy. Made with one-inch heavy-duty nylon webbing, the lightweight tow bar alternative is small enough to fit in your pocket and works on tail wheel aircraft with a 360-degree full-swivel tail wheel assemblies. The small end loops around the tail wheel leaf spring and cinches up tightly to pull and steer the aircraft backwards without pushing or pulling on any flight surfaces.

Tailwheel leash - Black ..... P/N 13-04681 ..... $19.95
Tailwheel leash - Red ..... P/N 13-04682 ..... $19.95

DELUXE TAILWHEEL TOWBAR

The new Deluxe Tail wheel Towbar uses a positive locking control cable to attach to the wheel from a straight-on position. No extra maneuvering or lifting is required, and it can be adjusted for various tail wheel sizes. Towbar Weight: 26 lbs.

Note: Maximum weight to lift is 1,200 to 1,500 lbs. P/N 13-04918 ..... $268.95

STEARMAN TOWBAR

This towbar easily captures your tailwheel. Just push down on the bar and latch the pental hook or drawbar ball. It makes moving the Stearman from the rear quick and easy. Made with heavy duty wheels and pump up tires. Powder coated black.

P/N 13-11618 ..... $398.00

GLIDER & BANNER TOW HOOKS

GLIDER & BANNER TOW HOOK RELEASE

Bolt-on tow hook with bumper is designed to be directly bolted to a custom mounting bracket. The bumper is designed to reduce the kick-back that occurs when releasing a banner. The polyethylene bumper absorbs the force of the release and your tow hook release will last longer. P/N 13-06281 ..... $554.00

GLIDER & BANNER TOW HOOKS RELEASE

Bolt-on tow hook is designed to be directly bolted to a custom mounting bracket. This hook is similar in design to the Schweizer manufactured hook that is no longer available. Design improvements were made to increase emergency release capability at all towing loads and angles. The tow hook is not to be used on gliders. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations" and the included tow hook installation instructions. Tow hook release in not STC or PMA approved. P/N 13-04975 ..... $483.00

GLIDER & BANNER TOW HOOKS RELEASE

Weld-on tow hook designed to be directly welded to a custom mounting bracket. This hook is similar in design to the Schweizer manufactured hook that is no longer available. Design improvements were made to increase emergency release capability at all towing loads and angles. The tow hook is not to be used on gliders. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations" and the included tow hook installation instructions. Tow hook release in not STC or PMA approved.

P/N 13-04974 ..... $445.00

GLIDER & BANNER TOW RING

The tow rings is designed for use with the glider and tow hook release. The size of the tow ring is 2 ¼" OD. The material is forged steel, finished with cadmium plate with a proof load to 2500 lbs. Tow ring is for use with Wings Unlimited, Inc. tow hooks only. It is not STC or PMA approved.

P/N 13-06282 ..... $20.90

GLIDER & BANNER TOW RELEASE HANDLE

The release handle is attached to the support bracket in the cockpit of the airplane. A cable is attached to the handle and tow hook release. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations". The release handle is not STC or PMA approved.

PN 13-06283 ..... $179.00

GLIDER & BANNER TOW SUPPORT BRACKET

The support bracket is attached to the floor of the airplane in the cockpit and is the housing that holds the release handle. FAA approval can be obtained for the complete tow hook and release system by following the guidelines in FAA Advisory Circular 43.13-2B, Chapter 8, titled, "Glider and Banner Tow-Hitch Installations". The support bracket is not STC or PMA approved.

PN 13-06284 ..... $127.00

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

REDLINE TOW BARS

Sidewinder attached securely to the front wheel.

Sidewinder extended.

Sidewinder collapsed.

REDLINE SIDEWINDER POWER DRIVER

Powerful and portable, the Sidewinder will forever change the way you move your aircraft. Powered by Milwaukee's top of the line 28V power unit with a long-lasting, lithium ion battery pack, Sidewinder weighs less than 22 pounds, collapses to 27" and stows easily in your baggage compartment. Made in the USA using 4130 Chromoly material.
Comes with battery and charger.
Beechcraft bar fits: Bonanza, Baron, Travel Air, T-34
Cessna single engine bar fits: 172RG, 177RG, 182RG, 210, P210
15 inch Extension Tube is required on all models except 177RG
Cessna twin engine bar fits: C-310, C-320, C-340, C-414, C-421
Piper bar models: Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole. * Malibu and Matrix models require use of the 15 inch Extension Tube. * Meridian requires the 30" Extension Tube.
Mooney bar fits: All Mooney Models
Eclipse bar fits: All Eclipse Models 15 inch Extension Tube is required.

Sidewinder Application	Part No.	Price
Beechcraft	13-06838	$1,675.00
Cessna Single Engine	13-06855	$1,675.00
Cessna Twin Engine	13-06857	$1,675.00
Piper	13-06859	$1,675.00
Mooney	13-06860	$1,675.00
Eclipse	13-06861	$1,675.00
Cirrus	13-06862	$1,675.00
Rockwell 112/114	13-06863	$1,675.00
15" Extension Tube	13-06856	$139.95
30" Extension Tube	13-06858	$139.95
Sidewinder Carry Bag	13-06839	$55.75
Sidewinder Replacement Battery	13-06840	$189.95

REDLINE BE-3/BE-3XL TOWBARS

BE-3: 2-piece design for hand or powered use. Extends to 43.5", collapses to 24.5" and weighs 4 pounds. For attachment to a golf cart, tractor or other powered vehicle, please use the S-3 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.
BE-3XL: 2-piece design for hand or powered use. For attachment to a golf cart, tractor or other powered vehicle, please use the S-3 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
BE-3 Beechcraft - Fits Bonanza, Baron, Travel Air, T-34	13-06841	$294.00
BE-3XL Cessna - Fits 172RG, 177RG, 182RG, 210, P210	13-06843	$294.00
BE-3XL Mooney - Fits All	13-06846	$294.00
BE-3 Piper - Fits Arrow, Lance, Saratoga (RG)	13-06844	$294.00
BE-3XL Piper - Fits Arrow, Lance, Saratoga (RG), Malibu, Matrix	13-06845	$294.00

REDLINE BE-4 TOWBARS

2-piece design for hand or powered use for heavier airplanes. Extends to 61.5" and collapses to 33" and weighs 5 pounds. For attachment to a golf cart, tractor or other powered vehicle, please use the ST-1 Vehicle Adaptor. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
BE-4 Beechcraft - Fits Bonanza, Baron, Travel Air, T-34, Duchess	13-06849	$389.00
BE-4 Cessna - Fits 172RG, 177RG, 182RG, 210, P210	13-06850	$394.00
BE-4 Piper - Arrow, Lance, Saratoga (RG), Malibu, Matrix, Meridian, Seminole.	13-06851	$389.00
BE-4 Eclipse - Fits All	13-06852	$389.95
ST-1 Vehicle Adapter	13-04066	$59.50

REDLINE ST-1 TOWBARS

If you own models 33, 35 or 55, the ST-1 is the least expensive, most versatile option for hand or vehicle towing. With an overall length of 38.5" and 3 pound 8 ounce weight, it fits neatly on the floor of your baggage compartment. This is our recommended tow bar for the STIFFY. For attachment to a golf cart, tractor or other powered vehicle, please use the ST-1 Vehicle Adaptor. Length is 38.5" and weighs 3 pounds 8 ounces. Made in the USA using 4130 Chromoly material. FITS THESE BEECHCRAFT MODELS: Bonanza, Baron, Travel Air, T-34 P/N 13-06848..... $209.00
ST-1 Vehicle Adapter ..... P/N 13-04066..... $59.50

REDLINE PH-1 FOR ECLIPSE

Main gear axle adapter allow the use of floor jack or bottle jack for tire maintenance. Made in the USA using 4130 Chromoly material. FITS ALL ECLIPSE AIRCRAFT.
P/N 13-06853..... $349.00

REDLINE UL/UL-XT TOWBARS

UL: Very light weight, 2-piece design for hand towing only. Extends to 43.5" and stows to 25.5" and weighs 3 pounds 4 ounces. Made in the USA using 4130 Chromoly material.
U.L- XL: CESSNA Very light weight, 2-piece design for hand towing only. Extends to 48.5", collapses to 31.5" and weighs 3 pounds 6 ounces. Made in the USA using 4130 Chromoly material.
U.L. XL: MOONEY 2-piece design for hand or powered use for heavier airplanes. Extends to 61.5" and collapses to 33" and weighs 5 pounds. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
UL - Beechcraft - Fits Bonanza, Bonanza, Baron, Travel Air, T-34	13-01914	$209.00
UL-XT - Cessna - Fits 172RG, 177RG, 182RG, 210, P210	13-01917	$195.00
UL-XT Mooney - Fits All	13-06847	$195.00
UL - Piper - Fits Arrow, Lance, Saratoga (RG).	13-01915	$195.00

REDLINE STIFFY

A 1-pound, spring-loaded, reversable-ratcheting mechanism that greatly increases the "leverage" available to help move your plane. Must be used with either the ST-1 or BE-3 Towbar, purchased separately. Made in the USA using 4130 Chromoly material.

Application	Part No.	Price
Beechcraft - Bonanza, Baron, Travel Air, T-34	13-04064	$225.00

REDLINE WEDGE-LOC LINK

Provides a solid "link" between your airplane and other brands of tow bars or power tugs that were designed to connect to either your axle or tow pins. With the WLL, nothing touches any exterior surface of your plane -- the result is no scratching or other damage! Made in the USA using 4130 Chromoly material.
FITS THESE BEECHCRAFT MODELS: Bonanza, Baron, Travel Air, T-34 P/N 13-01913..... $249.95

REDLINE SLIDER FOR ECLIPSE

The Slider adapter inserts into the front axle and tightens securily. It provides a short "stub" on each side for any universal type tow bar attachment. With the Slider in place, nothing touches any exterior surface of the nose gear, avoiding scratching and other damage. Made in the USA using 4130 Chromoly material. FITS ALL ECLIPSE AIRCRAFT. P/N 13-06854..... $149.00

PS

AIRCRAFT TUGS

TRACE TOWBOTS REMOTE CONTROL AIRCRAFT TUG

The iTowBot's loading sequence is as easy as driving the unit directly under the nosewheel of your aircraft. It is engineered so that when the aircraft loads, the weight of the loaded aircraft does not inhibit its zero-turn capability. This allows the operator to articulate the aircraft in a manner that places it ahead of all other towing equipment. Releasing the aircraft is just as easy. A foot-operated release allows the operator to unlock the swivel carriage and merely back out from beneath the nosewheel. Can tow in any direction, allowing the user to position aircraft in close quarters with ease. It has the ability to rotate the aircraft inside of its own wingspan. The powerful 24VDC motors are regulated for smooth starts and stops while delivering the power you need to put your aircraft asset out on the ramp or back in the hangar. Specifically designed to provide adequate distance for the operator to tow an aircraft while stepping back to visually clear the areas around the aircraft. The operator should exercise caution in selecting the vantage point from which to operate the iTowBot. The front wheel remains stationery while the iTowBot is free to turn through 360°. With its hybrid zero-turn capability. The DX2.0 transmitter is designed to provide bulletproof 2.4 GHz spread spectrum radio link. There are no worries of frequency clip or radio interference from noisy motors or no reason to be concerned that someone may turn on a radio on your channel. The receiver is bound to the transmitter at the facility prior to shipment so that the receiver will only recognize its specific transmitter that comes with your iTowBot. During the binding process, the motor fail safe positions are also set to further provide another level of safety. Specifications: * Measures 38" Wide x 46" Long x 12" High * Powerful Reversible 24 Volt DC Motors * Rugged Steel Construction * Powder-Coated Frame * Virtually Zero Maintenance * Easy Ergonomic Remote Control Handset * Max Towing Speed 1.7 Feet Per Second * Overvoltage Thermally Protected * Tows Aircraft up to 15,000+ Pounds Gross Weight * Trouble Free Cast Iron Rims with Non-Marking Moldon * Solid State Heavy Duty Fully Articulating Motor Control Wheels * Hybrid Zero Turn Capability about Stationary Nosewheel * Equipped with Solid State Battery Charger/Maintainer * Also available with built-in 24V Auxiliary Power Plug (APU) & Power Cord

Descriptions	Part No.	Price
Standard Model (No APU) Up to 15,000 lbs.	13-05252	$8,405.00
Standard Model (With APU) Up to 15,000 lbs	13-05253	$9,224.00
Dual Wheel Carriage (No APU)Up to 15,000 lbs.	13-06896	$8,995.00
Dual Wheel Carriage (With APU)Up to 15,000 lbs.	13-06897	$10,495.00
Wheel Pant Unit (No APU) Compatible with many helicopters as well. Up to 15,000 lbs.	13-06898	$8,995.00
Wheel Pant Unit (With APU) Compatible with many helicopters as well. Up to 15,000 lbs.	13-06899	$10,495.00

Descriptions	Part No.	Price
Heavy Duty - Incorporates Gear Reduction and is 36V (No APU) up to 30,000 Lbs.	13-05734	$9,495.00
Heavy Duty - Incorporates Gear Reduction and is 36V (With APU) up to 30,000 Lbs.	13-05735	$9,689.00
Heavy Duty, Dual Wheel Carriage - Incorporates Gear Reduction and is 36V (No APU) up to 30,000 Lbs.	13-06901	$9,495.00
Heavy Duty, Dual Wheel Carriage - Incorporates Gear Reduction and is 36V (With APU) up to 30,000 Lbs.	13-06902	$9,588.00

TRANSAXLE BATTERY OPERATED TUG

Easily move small aircraft quickly and safely in tight areas. The model 701 is collapsible for compact stowing. Optional ball hitch attachment for movement of small trailers and campers. Model 701 - Move aircraft weighing up to 4,500 lbs. Max Tow. Tug performance data based on level, smooth, paved surfaces. Features: • 400W effective power • 24 V DC Electric motor • Operator can easily control steering • Rocker switch for forward/reverse • Adjustable speed • Virtually silent when moving • Environmentally friendly - no exhaust • Average battery life: 3 hr • Dual Battery Pack - 24v system • Easily remove 24v battery • Collapsible design • Easy adjust handle for user comfort • Universal adaptor attachment for quick tool-free connection to a wide range of aircraft. P/N 11-10807.....$2,220.00

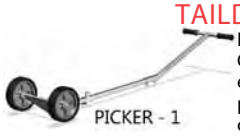
TRANSAXLE GAS OPERATED TUG

Designed and built to save time and money for FBOs, Maintenance Shops, Corporate aviation or anyone needing to move aircraft. The 707 Tug makes it easy for one person to maneuver aircraft quickly and safely in tightly stacked hangars or staging on the ramp. Model 707 - Move aircraft weighing up to 9,500 lbs. Max Tow. Tug performance data based on level, smooth, paved surfaces. Features: • 340cc Honda OHV Engine - EPA approved • Gasoline (87-100LL) • Electric start • Heavy-Duty transmission • Disc brake • High-floatation pneumatic drive tires • Lazy Susan • Quick-Lock strap to secure nosewheel • Headlight.

P/N 11-10808.....$4,797.00

See www.aircraftspruce.com for Aircraft Application Charts

TAILDRAGGER PICKERS



Fits: LSA, Pitts, Vans-RV, Extra 300, Super-Cub, Citabria, Decathlon, Stearman, Waco... etc. Contacts tire with a 1,000 + Lbs capacity per wheel. Beautiful yellow hi-gloss powder coat finish. Corrosion Resistant mfg., (CRES). Old & worn tires now fit perfectly again every time. (-1) & (-2) Handlebars are "interchangeable" Soft comfort heat & cold resistant grips feel good to hold. You will get your "best-fit" every time for the reach, width & diameter of your tail wheel. No visible protruding hardware that could damage aft flight control surfaces. (-2) comes standard with ergonomic handlebars designed to the comfort of your wrist. Fits the popular RV tail dragger's, with no additional purchased parts, accessories, adapters or hardware. Simple to use as usual, just push handlebar down and Pivot the "Picker Pins" over to capture the tire. In a nut shell, these Picker's fit a J3-Cub thru 450 Stearman or any tire up to 3.5 inches wide. Long Lasting, Premium Quality, 2-Wheel Tow System. Designed by an aerospace product & tool engineer and former tail dragger pilot.

PICKER-1, the standard (-1) has fully adjustable "Picker-Pins" on 1 side of the frame only. This will still fit "any size" tail wheel tire.

PICKER-2, The larger big brother (-2) also has fully adjustable "Picker-Pins", but they are on "both sides" of the frame and is much wider and therefore you once again have the option of picking 2 tail wheel sizes without having to make adjustments each time. This model is perfect for hangars with more than one tail dragger inside that has different sized tail wheels. Also liked by A&P's, FBO's, Repair Stations etc.., or the person who just wants it all.

Picker-1.....P/N 13-14774.....$209.00
Picker-2.....P/N 13-14775.....$217.00

SPORT PICKER

LSA ONLY... Works great, due to the efficiency, the recommended use of this product is based on smooth hard Flat surfaces like concrete. That being said... This very affordable inexpensive tow bar is specially designed for tail draggers that fall into the Light-Sport Aircraft category. This simple yet unique tow bar still has (2) fully adjustable Picker-Pins on (1) side for tail wheels up to a max 8-inches in diameter. The "SPORT" PICKER-3 assembly you see here is also a quality built Powder Coated tail dragger tow bar made with durable materials and hardware. Make an infinite number of adjustments to ensure a perfect fit for many aircraft with smaller tail wheels. The "SPORT" PICKER-3 can even be dialed-in using NO TOOLS most of the time. You can even adjust the location of the tail wheel.

P/N 13-15504 ..... $149.00

BABY BUSH PICKER 1A /1B

-1A vs -1B Explained below:

PICKER-1A Baby Bush - comes with flat free high capacity 10-inch wheels and still fits LSA and aircraft up to 1,800 pounds. The use of this tow bar is designed for door lips, door tracks, grass/turf and packed gravel. PICKER-1A now has an ergonomically engineered handlebar. PICKER-1B Baby Bush - comes with (count'em), 4 Flat Free extra high capacity 10-inch wheels and still fits LSA thru Stearman. The use of this tow bar is designed for door lips, door tracks, sand, wet soft grass or turf and loose rocky gravel even snow. Baby Bush PICKER-1B also has an ergonomically engineered handlebar.

-1A.....P/N 13-16047..... $229.00
-1B.....P/N 13-16048..... $274.00

BABY BUSH PICKER 2A / 2B

Baby Bush PICKER-2A is one of the FBO favorites and comes with flat free high capacity 10-inch wheels and still fits LSA and aircraft up to 1,800 pounds. The use of this tow bar is designed for door lips, door tracks, grass/turf and packed gravel. The Baby Bush PICKER-1A now has an ergonomically engineered handlebar. Because of your option to set up the Picker-Pins for two or more different sized tail wheels "at the same time", it's an FBO/A&P favorite. Baby Bush PICKER-2B handles this Ryan PT-22 Recruit War-Bird with no problems. Get all the control back in your hands with this "best of the best" Baby Bush PICKER-2B.

-2A.....P/N 13-16049..... $252.00
-2B.....P/N 13-16050..... $296.00

PS

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AIRCRAFT SPRUCE EAST
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Prices Subject to Change Without Notice

AIRTUG® 6-S GAS POWERED

The AIRTUG Model 6-S model is extremely easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission as the heart of the Airtug, a heavy duty variable speed , 6 horsepower gas engine. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling makes this unit a great choice. All of these features simply make this aircraft tug the best in the industry! Features: • Loading System: Winch Strap/ Strut Strap with Accessory options • Parts Warranty: 1 Year • Tow Weight: Up to 8,100 lbs. • Turning Radius: 360° with handle-mounted Caster • Construction Details Specifications: • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle 16"x 6" - 6 ply on 8" Drive Wheels • Drive wheels capable of handling nosewheel weights up to 2000 lbs. • Welded load platform mounted between the drive wheels for added traction.

P/N 13-07284 .....$3,595.00

AIRTUG® 6-H GAS POWERED

The 6-H aircraft tug model is the tug of choice for those who need to lower the tail to enter a hangar, and might also need to handle nose-wheel fairing aircraft. The nose-wheel is loaded the same as the Model 6-H, and then it can be raised by a hydraulic jack up as much as needed to a maximum of roughly 9'', thus lowering the tail by approximately double this amount. Additionally, it is easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission and a 6HP variable speed gasoline engine. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling makes this unit a great choice. Features: • Loading System: Hydraulic Lift Shoe with Winch Strap/ Strut Strap • Parts Warranty: 1 Year • Type of Starter: Recoil • Engine: Four Stroke 6-HP • Tow Weight: Up to 8,100 lbs. • Turning Radius: 360 degree Specifications: • 2 Ton Hydraulic Jack for Lift Shoe • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive Wheels Capable of Handling Nose-wheel Weights up to 2000 lbs. • Low Profile unit for avoiding low aircraft hulls and flight controls with low axle and optional 13" Drive Wheels.

P/N 13-07285 .....$3,795.00

AIRTUG® 10-S GAS POWERED

Extremely easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission as the heart of the Airtug, a heavy duty variable speed gas engine, with a built in electric starter. They garantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling makes this unit a great choice. A light is built in for ease of seeing under the fuselage at night. Features: • Loading System: Winch Strap/ Strut Strap with Accessory options • Parts Warranty: 1 Year • Engine: Heavy Duty 10hp electric and recoil start • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360° with handle-mounted Caster. Specifications: • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive wheels capable of handling nosewheel weights up to 2000 lbs. • Welded load platform mounted between the drive wheels for added traction.

P/N 13-07288 .....$4,595.00

AIRTUG® 10-H GAS POWERED

The 10-H aircraft tug model is the tug of choice for those who need to lower the tail to enter a hangar, and might also need to handle nose-wheel fairing aircraft. The nose-wheel can be raised by a hydraulic jack up as much as needed to a maximum of roughly 9'', thus lowering the tail by approximately double this amount. Additionally, it is easy to use because of its' unique "Throttle Grip Control" system utilizing a hydrostatic transmission, electric starter and a heavy duty variable speed gasoline engine. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. A light is built in to ease seeing under the fuselage at night. Features: • Loading System: Hydraulic Lift Shoe with Winch Strap/ Strut Strap • Parts Warranty: 1 Year • Type of Starter: Electric • Engine: Four Stroke 10-HP or greater, electric or recoil start • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360 Degree Specifications: • 2 Ton Hydraulic Jack for Lift Shoe• 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive Wheels Capable of Handling Nosewheel Weights up to 2000 lbs. • Low Profile unit for avoiding low aircraft hulls and flight controls with low axle and optional 13" Drive Wheels

P/N 13-07289 .....$4,795.00

AIRTUG® EL3-S ELECTRIC POWERED

Same great power and moving capacity as the larger gas powered unit, but in a QUIET electric model! Extremely easy to use because of its' unique "Throttle Grip Control" system utilizing a Hydrostatic Transmission, Heavy Duty Electric Motor, powerful Batteries, and built-in Battery Charger. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. Finally, its' pinpoint handling combining twist grip control with a large, handle-mounted Caster makes this walk-behind Airtug a great choice. A light is also built in for ease of of seeing under the fuselage at night. Features: • Loading System: Winch Strap/Strut Strap with Accessories • Parts Warranty: 1 Year • Engine: Heavy Duty 3HP Permanent Magnet Motor • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360 Degree Specifications: • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive wheels capable of handling nosewheel weights up to 2000 lbs. • Low Profile unit for lower axle clearances and 13" Drive Tires option

P/N 13-07286 .....$5,395.00

AIRTUG® EL3-H ELECTRIC POWERED

Same great power and moving capacity as the larger gas powered unit, but in an electric model! The choice for those who need to lower the tail to enter a hangar, and might also need to handle nose-wheel fairing aircraft. The nose-wheel can be raised by a hydraulic jack up to a max. of 9''. It is easy to use because of its' unique "Throttle Grip Control" system. They guarantee your safety with their "Return to Brake" feature that absolutely prevents any unintentional movement of the plane when the throttle grip is released. There is no metal to metal contact, no gears to shift and no jerky clutching systems to quickly wear out. A light is also built in for ease of seeing under the fuselage at night. Features: • Loading System: Hydraulic Lift Shoe with Winch Strap/ Strut Strap • Parts Warranty: 1 Year • Engine: Heavy duty 3HP Permanant Magnet Motor • Tow Weight: Up to 16,000 lbs. • Turning Radius: 360 Degree. Specifications: 2 Ton Hydraulic Jack for Lift Shoe • 11 Gauge Heavy Steel Frame • Hydrostatic Transaxle • 16"x 6" - 6 ply on 8" Drive Wheels • Drive Wheels Capable of Handling Nose-wheel Weights up to 2000 lbs.

P/N 13-07287 .....$5,395.00

AIRTUG NFE-4 ELECTRIC FOR CIRRUS

Moves the CIRRUS Aircraft and other castering nose-wheel aircraft easily and makes moving the aircraft a simple task for a single person!

The BEST TUG for CIRRUS aircraft or any other castering or non-castering nose- fairing aircraft. Simply attach the small towbar by hand to the aircraft and then winch the tow-bar / nose-wheel onto the raised platform for total control by the tug. Much easier to hookup and control the aircraft than a single wheel tug that is not able to lift the nose wheel off the ground. Can move most nose-fairing aircraft including the Diamond and other aircraft weighing less than 4,000 lbs. Easy to Use and Economical with pin point handling allowing the operator to pivot as tight as desired as a result of the transmission Differential. 24 Volt Electric motor so no need to worry about gas going bad Twist grip for infinite speed control forward and reverse with no gears to shift and no jerky clutching system. Reduces repair cost from accidents that result from moving aircraft while not having good control and good visibility and knowledgeable help. Assembles in minutes. Powder coated Frame & Handle. Dimensions: 85" long x 36" wide x 42" tall. 1 Year Warranty. 30 Day Money Back Guarantee!

P/N 13-14974 .....$2,595.00

ADDITIONAL ADAPTERS

Description	Part	Price
Airtug Nfe-4 Cirrus Adapter	13-14975	$285.00
Airtug Nfe-4 Diamond Da20 Adapter	13-14976	$285.00
Airtug Nfe-4 Diamond Da40 Adapter	13-14977	$285.00

PS

TIE-DOWNS

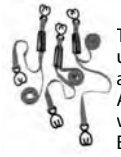
FLY TIES TIE DOWNS

FlyTies Tie Downs Rated "Top Choice" by Aviation Consumer

FlyTies® unique design allows quick insertion and quick removal using the easy-out extraction tool provided. Rugged, die-cast steel rods are 3/8" x 14" for deeper penetration into harder ground. Cumulative load capacity is 3,600 lbs. Kit includes 3 eas. Delrin hubs, 9 eas. steel rods, 3 ea. 3/8" x 12 ' ropes, easy-out extraction tool, and rugged compact canvas tote bag. Complete kit weighs only 6 lbs. (less than 1 gal of Avgas) and has a lifetime warranty. P/N 13-22751 ..... $98.85

TIE-DOWN EYE BOLT

For non-structual applications. The 7/16" dia. threaded shaft is 7/8" long. Hole is 5/8" dia. Overall length 2-1/2". Furnished with AN365-720 elastic stop nut and wide-area AN970-7 washer P/N 13-04303..... $8.25



AIRCRAFT TIE-DOWNS

These Aircraft Tie-Downs offer strong, durable, and easy to use tie downs for any weather condition. These tie downs are rated up to 3,000lbs. and tighten up with one quick pull. A sliding cap protects the buckle from freezing during cold weather and keeps grit out during windy field conditions. Each kit comes with: * Three 9 foot long tie down straps * Choice of tie down strap colors: black, red, or royal blue * A Dupont Cordura carrying bag with choice of colors; black, forest green, red, royal blue or navy. Embroidery is available for an additional $5. Color is Red. P/N 13-06328 ..... $67.75

TAIL TIE DOWN GUARD 162TG

Fits Cessna 162 And Other Light Aircraft.

P/N 05-08294..... $131.95

AIRCRAFT TIE-DOWN WITH EMBROIDERY

Aircraft Tie-Down offer strong, durable, and easy to use tie down for any weather condition. Rated up to 3,000lbs. and tighten up with one quick pull. A sliding cap protects the buckle from freezing during cold weather and keeps grit out during windy field conditions. Kit Contains: A Dupont Cordura matching carrying bag. Specifications: • Strap Color: Red • Embroidery Color: White. P/N 13-12672..... $77.75

THE PILOT BUDDY

A pillot actuated safety and restraint system for hand propping and tail tie down.Constructed to meet and exceed the load for purpose of positive restraint. Has a Black Velour storage Pouch (4" x 5"), and a slighty smaller restraint loop ring. The entire device and storage package weighs less than 2 OZ, and fits in the palm of your hand. Both the restraint loop (Left side-4 Yards=12'); and the release lanyard (Right side -6 yards = 18') are constructed of MIL Specification, MIL-C-5040, 750 pound test line. The Swing Latch Shackle release is test certified to 800 pounds tensils strength for operating loads. The Swing Latch mating ring on the Restraint loop (Left Side), is a ring contructed to MIL Specification. MS27762, with a tensile strength of more than 750 pounds. Package comes with instructions, a checklist for use, and other increasing safety materials. P/N 13-04259..... $32.50

AIRCRAFT TIE-DOWN STRAPS

Monogramming available (max 10 letters or numbers). Monogramed items are noncancellable and nonreturnable. *Note - Picture shows and example of the monograming option. Actual tie-down is blank unless monograming option is purchased.

Tie-down strap red ..... P/N 13-04344 ..... $14.95
Tie-down strap orange ..... P/N 13-04342 ..... $14.95
Tie-down strap black ..... P/N 13-04343 ..... $14.95
Tie-down strap blue ..... P/N 13-04341 ..... $14.95
Monogram Tie-down (specify color) ..... P/N 13-06073 ..... $28.45

TIE DOWN STRAPS

MEDIUM STRAP KIT - 1500 lb. universal, 14 foot tie-down straps with 3000 lb. spring clip climbing type carabiners and 3000 lb. ground stakes.

P/N 13-11228..... $119.00

LARGE STRAP KIT - 3000 lb. universal, 14 foot tie-down straps with 3000 lb. spring clip climbing type carabiners and 3000 lb. ground stakes. ..... P/N 13-11229 ..... $129.00

HEAVY STRAP KIT - 5000 lb. universal, 14 foot tie-down straps with 5000 lb. spring clip climbing type carabiners and 5000 lb. ground stakes ..... P/N 13-11230 ..... $139.00

16" CORKSCREW TIEDOWN KIT

A versatile, general-purpose spiral anchor made from cold, rolled steel. Design for lightweight applications. Folding ring reduces profile to minimize obstruction in high traffic areas. Bright orange color powder coating resists corrosion and helps provide added visibility. Use to secure small tents, trees, recreational use and patio furniture. Features: • Strong, durable cold rolled steel •Powder Coated for long life and weather resistance • Spear end of anchor allows for easy installation into all soil types • Collapsible ring to adjust any angle • Orange color for easy detection • High pull force performance; 500 pounds per anchor (results may vary dependent on soil types) • Installs in most soils in minutes • Lightweight, individual weight of 1 lb 13 oz. or 5 lbs. 7 oz. per kit • This kit includes: three 16" corkscrew tiedown anchor, one 3/8" nylon tiedown rope, and one tiedown bag - all complete with a manual including installation instructions! P/N 13-09652..... $59.50

PIPER/BEECH TIE DOWN RINGS

FAA PMA Certified Tie Down Rings. Rated at 140+ MPH front, rear, and side wind speeds. Rings are 8 times stronger and are directly interchangeable with all OEM versions

Piper Tie Down Rings ..... P/N 13-11221 ..... $198.00
Piper Tie Down Rings (plated) ..... P/N 13-11220 ..... $198.00
Beechcraft/Hawker Tie Down Rings (plated) ..... P/N 13-11222 ..... $198.00
Beechcraft/Hawker Tie Down Rings ..... P/N 13-11223 ..... $198.00

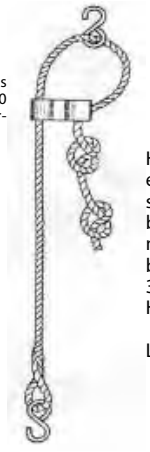
PIPER/BEECH SKID & STRIKE PLATES

FAA PMA Certified BEECHCRAFT/HAWKER aluminum skid & strike plate.

Beechcraft/Hawker Skid & Strike Plate ..... P/N 13-11227 ..... $198.00
Beechcraft/Hawker Skid & Strike Plate (plated) ..... P/N 13-11226 ..... $198.00
Piper Skid & Strike Plate ..... P/N 13-11225 ..... $198.00
Piper Skid & Strike Plate (plated) ..... P/N 13-11224 ..... $198.00

Tie-down bar is guaranteed for 10 years under normal use.

When making your own length of tie-downs, add at least 30" for rope reversal and knots.



HOOK-N-PULL TIE DOWNS

Hook-N-Pull Tie downs feature closed end "s" hooks made from high quality steel with heavy plating, and tie down bards are made from high grade aluminum, hardened for strength and ball burnished and anodized. Furnished with 3/8" diameter nylon rope.

High wing
P/N 13-00448..... $24.50
Low wing or tail
P/N 13-00449..... $23.85

TITANSTRAP SUPER UTILITY STRAPS

Remaining supple in extreme temperatures and climates, TitanStraps® are made from a stretchy, high performance polymer that's been injected with a 10-year UV additive for extra longevity. A polished, heat-treated aircraft aluminum buckle is over-molded in the manufacturing process for bombproof strength. Simple in design, high in function, you'll find hundreds of uses for TitanStraps®. The high-visibility strap doesn't use hooks, making them safer than typical bungee cords. Made in USA. P/N 13-12361..... $7.99

AEROSPOILER KIT, AEROSPOILER EXTENSION KIT

Kit contains 10 cup/receiver assemblies and 8 30"X3" inch blade assemblies. Each kit contains 20' of wing coverage. The AeroSpoiler will reduce the lift producing capability of your aircraft wing by as much as 96% on the area of wing covered by the Spoiler. Extension kits are available for aircraft requiring more than 20' of wing coverage.

Aero Spoiler Kit..... P/N 13-06505..... $179.00
Extension Kit..... P/N -13-06506..... $99.00

PS

TIE-DOWNS

"THE CLAW" TIE-DOWN SYSTEM

Advanced Aircraft Anchoring System – The Claw® Aircraft Tiedown kit comes complete with three earth anchors, rope, spikes, hammer and canvas carry bag. The Harder You Pull, The More It Grips The Earth. Features: Easy installation...Easy removal. No more struggling with screw-in anchors The "Claw®" is designed exclusively for aircraft. The "Claw®" system has a 3600 lb. combined capacity. The last tie down you will ever have to buy - Lifetime Warranty, Tremendous holding strength. The harder you pull, the more The "Claw®" grips. Ideal for all aircraft, Works in hard clay, sandy soil or anything in between Large foot print spreads the load over a larger area for maximum holding power, Low profile will not puncture tires, Complete System weighs only 8 lbs (Including Hammer), Light-weight aircraft aluminum with hardened corrosion resistant die cast zinc plated steel spikes 25 ft 3/8" dia. solid braid polyester rope, Anchoring System hammer doubles as removal tool The "Claw®" includes: Bag that is easy to carry and store that contains: 3 Anchors; 9 spikes; 1 hammer; 25-ft rope Wt: 8 lbs.

P/N 13-02448 ..... $84.95

JEB'S REMOTE TIE-DOWN KIT

Remote Release System - This new safety device will be appreciated by anyone who hand starts their plane.Release and retrieve without leaving the cockpit - get off to a safe start.

P/N 13-04787 ..... $59.95

BAGGAGE TIE-DOWN

A very strong, light weight, and quick way to secure your baggage. The photo shows two units; One with the clamp/ring installed in the base and one with the clamp/ring removed to show more detail. The unit parts are made of anodized 6061 T-6 aluminum with a stainless ring. 2 rivnuts and 2 countersunk 10-32 cad-plated screws are furnished with each complete unit. Extra bases can be purchased individually, and include rivnuts and screws. Note: Use rivnuts to attach to surfaces with no rear access - simply drill a .25" hole and install rivnut. By installing additional bases you can tailor your baggage tie-down options to suit your current needs. P/N 13-01729 ..... $43.85

E-Z LOCK TIE DOWNS

EZ-Lock Tie Downs feature a braid slip lock which provides excellent tie-down security without the need to tie any knots.72" fully extended P/N 13-00159..... $12.95

SLIDEDOWN AIRCRAFT TIE DOWN

Made as a "one size fits most aircraft", the SlideDown is easily adjustable to reach most anchor points. Maximum reach on the wings are approximately 100 inches and the maximum reach on the tail is approximately 54 inches. The SlideDown can be shortened to accommodate just about any length. The SlideDown is proudly Made in the USA and available in a variety of colors. Features: Powder Coated Aircraft Grade Aluminum Slide, 7/16" Kernmantle Braided Rope available in a variety of colors, Vinyl Coated Hooks, and a maximum Reach: Wings 100", Tail 54".

Color	Part No.	Price	Color	Part No.	Price
Orange/Blue	13-14797	$82.75	Red/White	13-14804	$69.85
Orange	13-14798	$69.85	Red	13-14805	$69.85
Yellow	13-14799	$69.85	Blue/White	13-14806	$69.85
Green/Blue	13-14801	$82.75	Blue	13-14807	$69.85
White/Red	13-14802	$69.85	Black	13-14808	$82.75
White/Blue	13-14803	$69.85			

SUPER ROPE CINCH®

The Super Rope Cinch™ is a simple handheld device that allows anyone to tie or untie rope with a simple twist. It can be used to tie or untie 1/8" to 5/8" rope, with nothing more than a simple twist.

The Super Rope Cinch® can hold a great amount of vertical or horizontal pressure, yet can be tied and untied in less than 1 second. Use the Super Rope Cinch® for tying boats, tents, luggage, backpacks, snowboards, wakeboards, tools, and everything else you fasten with a rope. The Super Rope Cinch® is considered by many to be the safer consideration to using bungee cords, which have a somewhat high rate of failure and cause thousands of injuries every year. Rope not included.

P/N 13-11641 ..... $4.90

NELSON AIRCRAFT TIE-DOWNS

- Three 15" welded (not bent) steel anchors with sharp tips for easy installation
- Three 15' nylon ropes• Cordura, Int'l. Orange, 8"x15" case
- Wt: 4 lbs. P/N 13-00663..... $73.85

SECURIT TIE-DOWN

Super-strong and simple to use, Securit has a unique braid lock that provides holding action automatically, even when the line is slack. It releases quickly and easily, but positively will not release by itself. Adjustable to 100". Tensile strength of the polypropylene rope exceeds 4000 lbs. Hooks are cadmium plated. Rope is resistant to water, oil and gas. Wt. 19 oz..... P/N 13-22750 ..... $22.85

Less 10% for 3 or more. Price shown is for one unit.

NYLON TIE-DOWN ROPE

American-made 100% duPont filament fiber nylon rope. Over twice the strength of manila. Highly resistant to sunlight, rot & mildew. Don't be fooled by foreign imitations.

3/8" Rope (4000 lb. test)
P/N 13-05400 ..... $0.19 /Ft.

1/2" Rope (6250 lb. test)
P/N 13-05500 ..... $0.61 /Ft.

15% Discount on 100 ft.

AIRCRAFT TIE DOWNS

Three 17" x 3/8" plated steel cork screw stakes. Three 10' x 3/8" polypropylene ropes. Cloth draw string bag.

P/N 13-06634 ..... $28.75

GENUINE VELCRO

5819 Genuine Velcro Two 4 1/2" pressure sensitive hook and loop strips. P/N 13-06404 ..... $1.80

RANS TIE DOWN SHACKLES

This stainless steel tiedown shackle will fit any 1 inch wide attach point, but is made special for most RANS aircraft that have RANS aluminum lift struts.The shackle is designed to accept chain or rope without marring the struts.

P/N 13-10435 ..... $29.85

TOUGHMAN TIE-DOWN

The Toughman™ Tie-Down is a new and unique multi-use rope based tie-down system. The Toughman™ Tie-Down incorporate the patent protected Toughman™ Rope Clamp which has only two moving parts and is manufactured from high performance engineered nylon resin. It is very easy to use, extremely lightweight, high strength and permanently corrosion proof. The Toughman™ Tie-Down product package includes one rope clamp, ten or fifteen feet of rope and one corrosion resistant steel hook. Military Tough: The Toughman™ Rope Clamp has undergone rigorous testing by the US Army Soldier Systems Center, "Natick" test labs and has been approved for use on cargo nets and rope support lines on military tents.

3/8" Camo 10' ..... P/N 13-05115 ..... $11.75
1/2" Red & Yellow 15' ..... P/N 13-05116 ..... $16.95
3/8" Red & Yellow 10' ..... P/N 13-06142 ..... $11.75

SECURENET AIRCRAFT TIE DOWNS

Aircraft Type	Net Size	Anchors	Frame Ratchets	Tie Downs	Foam Pads	Part No.	Price
Low Wing Aircraft	3-5'x 12'	10	4	12	15	13-06781	$779.00
High Wing Aircraft	2-5'x 18' 1-5'x12'	10	4	12	15	13-06782	$869.00
Amphibian Aircraft	3-5'x 18'	10	16	0	15	13-06783	$999.00

STUBAI CARIBINERS

Incredible strength, 1400 lb capacity, quick release. Order teal 3.25 in (8 cm) x 2.5 in (6 cm) x .375 in (1 cm) (approximate) Weighs 1.5 ounce (45 gm)

Teal ..... P/N 10-03736 ..... $15.00

PS

CHOCKS

ASA WHEEL CHOCKS

These tire stops are for keeping aircraft securely parked. A pair of black molded plastic wheel stops are connected with 22" bright yellow and black braided nylon rope that won't rot or retain water. The bottom cleats keep aircraft securely parked. Lightweight; 7-3/4" x 2-1/2" x 4-1/2"; concave design fits any aircraft tire. One pair is needed for each wheel.

P/N 13-05752 ..... $23.95

FOLD DOWN MINI CHOCKS

These mini chocks are so small and light you can take them with you. They work perfectly on both hard and dirt surfaces. Anodized aluminum, each wheel pair folds down to 3.75"x 2"x.5" & weighs just 4 oz. A 18" lanyard is attached.

P/N 5229 ..... $17.95

MOLDED WHEEL CHOCKS

The "Perfect" lightweight orange urethane aircraft wheel chocks. Oil and chemical resistant and connected by a 22-inch nylon rope. Concave design that fits into tire. Larger sizes available.

Orange ..... P/N 13-03550 ..... $22.85
Yellow ..... P/N 13-11857 ..... $41.50

CHOCK-IT ALUMINUM CHOCKS

Chock-It is made from 6061-T6 aircraft grade alumium with black anodized coating. Internal bungee retracks wheel arms for handy storage. Wheel arms snap in place while in use. Chock-It is designed for use on most front 5" tires.

Plain ..... P/N 12-02303 ..... $49.95
Engraved ..... P/N 12-02304 ..... $82.00

CHOCK-O-LITES BY WORD WORKS

These wheel chocks are made of POLYETHYLENE which makes them light weight, compact, oil resistant & durable with a self adjusting cord. Features: • Pilot friendly & locks in place • Totally adjustable & reversible to ground conditions • Choose between standard chocks or chocks with your N# or company name. Price per chock.

Small: 4.75" L X 4" W X 2.5" T ..... P/N 13-05776 ..... $23.65
Small with N# or company name ..... P/N 13-05778 ..... $29.95
Large: 6.5" L x 5" W x 3.25" T ..... P/N 13-05777 ..... $29.95
Large with N# or company name ..... P/N 13-05779 ..... $38.50

HANDY CHOCKS

5904 "Handy Chocks"* Light Weight - 8 oz* Powder Coated Aluminum Chock* 1 Pair per Package

Red ..... P/N 13-06405 ..... $18.75
Yellow ..... P/N 13-06406 ..... $18.75

CUSTOM WHEEL CHOCKS FOR LARGE JETS

This product is unique compared to some of the other wheel chocks out there. These custom wheel chocks are lightweight aluminum for large corporate jets. These wheel chocks are carefully fabricated, engraved and then covered with durable powder coating available in grey, black, or orange. These are extremely high quality and are a great addition for corporate jet operators to carry with them for many times when you fly to a ramp that doesn't have wheel chocks readily available. In addition to being stylish, these wheel chocks are very durable, long lasting and won't corrode. These are offered as a single pair for nosewheel or as two pair (one for each main wheel). Designed for single main wheel aircraft and are 12" long and made of .25" thick aircraft grade aluminum.

Description	Part No.	Price
Bare Aluminum - 1 Set	13-16051	$99.95
Bare Aluminum - 2 Sets	13-16052	$174.95
Powdercoat Black - 1 Set	13-16053	$149.95
Powdercoat Black - 2 Sets	13-16054	$249.95
Powdercoat Orange - 1 Set	13-16055	$149.95
Powdercoat Orange - 2 Sets	13-16056	$249.95
Powdercoat Grey - 1 Set	13-16057	$149.95
Powdercoat Grey - 2 Sets	13-16058	$249.95

TRAVEL CHOCKS

Very light weight wheel chock designed for airplanes and other vehicles. Compact and easily stored. Powder coated in durable red, blue, or yellow finish. Available in 3 sizes.Chock set is for one wheel only. Small - 1 1/2" angle x 6" long x 1/8" Thick Heat Treated Alum. Medium - 2" x 2" x 8" 1/8 Thick Angle Heat Treated Alum. Large - 3 1/2" x 3 1/2" x 8" Heat Treated 3/16" Thick Alum.

Description	Part No.	Price
Sm. Bare Alum.	13-01120-A	$21.65
Sm. Blue	13-01120-B	$21.65
Sm. Red	13-01120-R	$21.65
Sm. Yellow	13-01120-Y	$21.65
Med. Bare Alum.	13-01130-A	$23.50
Med. Blue	13-01130-B	$23.50

Description	Part No.	Price
Med. Red	13-01130-R	$23.50
Med. Yellow	13-01130-Y	$23.50
Lg. Bare Alum.	13-01140-A	$33.50
Lg. Red	13-01140-R	$33.50
Lg. Yellow	13-01140-Y	$34.85

LIGHTWEIGHT CUSTOM ALUMINUM WHEEL CHOCKS

Extremely lightweight compared to chocks made out of steel. Very Durable Powdercoat finish that will withstand the elements. Extremely corrosion resistant. The chocks include a front and rear chock, connected with a lightweight cable. Small Wheel Chocks- 1.5" angle and 8" wide. Available in Black Powdercoat, Orange Powdercoat, and Grey Powdercoat....Weight is only 9oz per pair, or 18oz for complete set of two pair. These wheel chocks are designed for aircraft up to approximately 3,000 lbs. They are low profile and will fit under the wheel pants of aircraft such as RVs.

Large Wheel Chocks- 2.5" angle and 10" wide. Available in Black Powdercoat, Orange Powdercoat, and Grey Powdercoat- 18oz per pair, 36 oz for two pairs.

Description	Part No.	Price
1.5 inch Bare Aluminum - 1 Set	13-13118	$49.95
1.5 inch Bare Aluminum - 2 Sets	13-13120	$69.95
1.5 inch Powdercoated - 1 Set	13-13119	$69.95
1.5 inch Powdercoated - 2 Sets	13-13089	$99.95
2.5 inch Bare Aluminum - 1 Set	13-13121	$69.95
2.5 inch Bare Aluminum - 2 Sets	13-13123	$99.95
2.5 inch Powdercoated - 1 Set	13-13122	$99.95
2.5 inch Powdercoated - 2 Sets	13-13124	$159.95

Specify color for Powdercoated Chocks.

WOOD WHEEL CHOCKS

These chocks feature heavy duty wood construction and are finished in bright safety yellow. Connected with 18" of braided nylon rope.

Attention: Total of charactors may not exceed 6.

Example: (N#) xxxxx - (Text) abcdef

Standard chocks ..... P/N 13-01765 ..... $28.50
Chocks w/ your N# or company name ..... P/N 13-01766 ..... $35.50

RUBBER WHEEL CHOCKS

These ribbed rubber wheel chocks measure 4"x4"x8" and have reflective tape on all three sides. Connected with nylon rope. Very popular with corporate operations & FBOs.

P/N 13-01767 ..... $54.50

AIRGIZMOS WHEEL CHOCKS

These chocks are unique because they are stackable. Cuts down on the amount of space required to carry them in the plane. Durable plastic sides are lightweight, but are made to take a lot of abuse. There is space on the sides to put your airplane's n-number (you supply the vinyl lettering). The edges of these chocks are made of non-skid material, so they stay where you put them.

P/N 13-04298 ..... $17.95

VECTOR CHOCKS

Hangar rash is the leading cause of ground handling insurance claims. Vector Chocks reduces the chance of hangar rash and will save you a considerable amount of money.

Vector Chocks cradle the wheel with their unique ramp design and the energy yellow colored industrial grade safety tape will help guide you from the hangar door to your safe parking place.

Installation is a snap with the peel-n-place feature, which sticks to asphalt as well as concrete.

Vector Chocks come as a complete kit, each kit containing two Vector Chocks and a roll of industrial grade energy yellow safety tape.

P/N 13-11694 ..... $39.95

PS

WINDSOCKS

SCOTT'S WINDSOCKS

Scott's windsocks are manufactured of long-life polyester fabric that is treated to resist the effects of wind and weather. All seams are double stitched with polyester thread for strength. The windsock throat is reinforced and has solid brass grommets for easy attachment and corrosion resistance. Nylon ties are included with each windsock to attach it to the frame. Windsocks are available in high visibility orange, white or alternate orange and white stripes. Fully extended at 20 MPH or 15 Knots.

BRIGHT ORANGE			
Throat Dia.	Length	Part No.	Price
8"	30 inches	13-04147	$28.50
10"	36 inches	13-02026	$31.65
13"	55 inches	13-04145	$34.85
18"	5 feet	13-20200	$48.95
18"	8 feet	13-20202	$56.90
24"	8 feet	13-20204	$73.75
28"	7 feet	13-20205	$75.95
36"	10 feet	13-20206	$119.85
INTENSE WHITE			
Throat Dia.	Length	Part No.	Price
18"	5 feet	13-20210	$49.50
18"	8 feet	13-20212	$58.75
24"	8 feet	13-20214	$72.50
WHITE/ORANGE STRIPE			
Throat Dia.	Length	Part No.	Price
18"	5 feet	13-20220	$62.75
18"	8 feet	13-20222	$71.75
24"	8 feet	13-20224	$87.75
28"	7 feet	13-20225	$101.75
36"	10 feet	13-20226	$139.75
36"	12 feet	13-20228	$148.75

SCOTT'S STANDARD WINDSOCK FRAMES

These very popular frames are constructed of welded steel for strength & durability. They have 2 ball bearings for easy swiveling and are painted for corrosion resistance. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4" size pipe or conduit. Order windsocks separately.

8"....P/N 13-20229....$49.50
24"....P/N 13-20232....$87.85
10"....P/N 13-20005....$52.85
13"....P/N 13-20231....$58.95
36"....P/N 13-20235....$99.85
18"....P/N 13-20230....$59.95

SCOTT'S EXTENDED WINDSOCK FRAMES

The extended frame turns much easier and keeps the windsock headed into the wind like a weathervane. The frame holds the windsock open fully so it will "fly" in lighter winds. Constructed of all welded steel with 2 ball bearings. The frame is mounted to a 1-inch diameter support pipe threaded to fit a 3/4-inch size pipe or conduit. ORDER WINDSOCKS SEPARATELY

18".....P/N 13-20244.....$81.95 24"..... P/N 13-20245 .....$119.90

STANDARD WINDSOCK FRAMES

These windsock frames are perfect for both our "long life" and "extra long-life" series windsocks.

The "Long Life" windsock is made of 100% nylon and is very durable. Even in tough weather conditions, this windsock can hold its own.

The "Extra Long Life" windsock is a heavy-duty cross-woven Aviation blend Poly. Nylon material with special Rip-Stop characteristics, Medium-weight for more flexibility, chemically resistant treated, and Polyurethane coated for bonding strength and water repellency. Ultra-violet dyed for best retention. Nylon support webbing on intake opening with brass grommets. Colorfast International Bright Orange in color. "Extra Long Life" windsocks have an estimate 50% longer life and color retention.

Size (in)	Part No.	Price
12 x 48	13-04318	$74.50
13 x 48	13-04319	$76.85
15 x 55	13-04320	$68.75

Size (in)	Part No.	Price
18 x 60	13-04326	$77.85
20 x 60	13-04327	$76.80
24 x 96	13-04328	$99.85

MINIATURE 15" WIND SOCK

For home, office, hangar or workshop. The 15" long wind cone of Flame-Orange sailcloth material swivels on 23" high steel shaft. Wind directionals are cast aluminum with flat black finish. Furnished with mounting hardware and instructions.

Complete Kit.....P/N 13-03747..... $53.75
Replacement Sock.....P/N 13-03748.....$12.50

27" VINYL WINDSOCK

Features 27" long x 6-1/2" diameter fluorescent orange vinyl sock. Aluminum mast adjusts from 33" to 54" and up to 12 ft. with extension kit. Perfect for private strip, helicopters, or runway threshold.

Complete Windsock w/frame .....P/N 13-20015.....$57.95
Replacement Sock.....P/N 13-20025.....$21.85

8 FOOT VINYL WINDSOCK

18" diameter sock is double stitched, durable, fluorescent orange vinyl coated nylon. Ball bearings let sock turn easily even in light winds. Aluminum frame holds mouth open. Mount on appropriate pipe. Order frame and sock separately

8 Foot sock only....P/N 13-20035 $49.85

NYLON WINDSOCKS

These socks are windtunnel tested and designed for conditions in which safety and wind direction are of greatest importance. They are constructed of nylon oxford cloth for strength and flyability and dyed a bright orange for higher visibility. The throat and tail bands are stitched with multiple rows of tough synthetic thread. The throat band is finished with #1 brass grommets and nylon ties are included. Unlike canvas or vinyl, these Socks fly in the slightest breeze.

Part No.	Throat Diameter	Length	Price Each
13-20040	10"	36"	$29.95
13-20045	18"	48"	$39.50
13-20060	36"	144"	$138.95
13-20050	18"	60"	$48.95

LONG LIFE WINDSOCKS

All Long Life Windsocks are made of heavy-weight cross-woven Aviation blend material having special Rip-Stop characteristics, flexible, chemically resistant treated, Polyurethane Coated for bonding strength and water repellancy, Ultra-violet dyed, with Nylon Web support and brass grommets. Color: Colorfast International Orange. Estimated 50% longer life and color retention. Aviation sized windsocks. FAA approved sizes per FAA Advisory Circular #AC 150/5345-27C dated 07/85. Estimated wind speeds: Fully extended shape for all sizes listed below, (wind tunnel tested) to be special cut Specification of 15 knots = 16.5 mph. 18" - 28" diameter windsocks 96" in length. 36" diameter 144" in length.

Size (in)	Part No.	Price
6 x 18	13-04306	$28.75
9 x 30	13-04307	$34.85
10 x 36	13-04308	$37.75
12 x 48	13-04309	$41.75
13 x 48	13-04314	$43.90

Size (in)	Part No.	Price
15 x 55	13-04315	$45.50
18 x 60	13-04321	$52.85
20 x 60	13-04323	$53.65
24 x 96	13-04324	$79.95

EXTRA LONG LIFE WINDSOCKS

"Extra Long Life" is a heavy-duty cross-woven Aviation blend Poly./Nylon material with special Rip-Stop characteristics, Medium-weight for more flexibility, chemically resistant treated, and Polyurethane coated for bonding strength and water repellency. Ultra-violet dyed for best retention. Nylon support webbing on intake opening with brass grommets. Colorfast International Bright Orange in color. "Extra Long Life" windsocks have an estimate 50% longer life and color retention.

Size	Part No.	Price
6"X18	13-20110	$32.50
9X30	13-20111	$36.50
10X36	13-20112	$41.95
13X48	13-20113	$49.95
18X60	13-20114	$49.95
20X60	13-20115	$57.95
12"X48"	13-04316	$46.75

Size	Part No.	Price
15"X55"	13-04317	$52.85
20"X96"	13-02039	$69.75
18"X96"	13-02038	$59.85
24"X96"	13-02040	$87.90
28"X96"	13-02041	$122.75
36"X144"	13-02042	$154.85

PS

WINDSOCKS

AIRPORT WINDSOCKS

What makes these aviation windsocks different?
Two major things make a windsock, its material and its construction. Starting off with a premium nylon fabric that is made right here in the USA to exact standards. Nylon offers unparalleled windsock durability to the elements and will not become rigid in cold weather, keeping these windsocks extremely responsive in even the slightest of wind. From there it gets urethane coated and UV protected, giving the windsock superior fade resistance and color retention. The material is subjected to a variety of tests by an independent lab to verify its structural integrity and UV resistance. This superior material is then cut and sewn. Our reinforced double stitched hems and heavy duty brass grommets, assures these windsocks long life reliability.
The added expense of a superior material and manufacturing process meets the needs of even the most demanding windsock customers. Such as: US Military, US Coast Guard, US Embassies, State Airports, Offshore Oil Rigs, Nuclear Power Plants, Medical Heliports, Government Bio Hazard Units.

ORANGE WINDSOCKS

Description	Size	Part No.	Price
Orange Windsock	4" x 15"	13-06386	$16.95
Orange Windsock	6" x 24"	13-06387	$17.85
Orange Windsock	8" x 36"	13-06388	$23.75
Orange Windsock	10" x 36"	13-06389	$29.75
Orange Windsock	13" x 54"	13-06465	$35.50
Orange Windsock	18" x 60"	13-06466	$42.50
Orange Windsock	18" x 72"	13-06467	$52.75
Orange Windsock	18" x 96"	13-06468	$53.75
Orange Windsock	20" x 96"	13-06469	$57.75
Orange Windsock	24" x 96"	13-06470	$66.85
Orange Windsock	36" x 144"	13-06471	$133.75

ORANGE AND WHITE WINDSOCKS

Description	Size	Part Number	Price
Orange & White Windsock	4" x 15"	13-06472	$19.50
Orange & White Windsock	8" x 36"	13-06473	$27.90
Orange & White Windsock	10" x 36"	13-06474	$36.50
Orange & White Windsock	13" x 54"	13-06475	$39.50
Orange & White Windsock	18" x 60"	13-06476	$52.50
Orange & White Windsock	18" x 72"	13-06477	$58.75
Orange & White Windsock	18" x 96"	13-06478	$63.75
Orange & White Windsock	24" x 96"	13-06479	$71.75

BALL BEARING FRAMES

The ball bearing windsock frames are a rugged design constructed of a welded steel construction and then a powder coated finish for corrosion protection. They incorporate a two bearing pivoting design for effortless pivoting. These frames are ready to be mounted on a ¾" female pipe thread for the 8", 13", 18" and 24" and a 1" pipe thread for the 36".

Description	Size	Part No.	Price
Ball Bearing Frames	8"	13-06481	$39.50
Ball Bearing Frames	13"	13-06482	$61.75
Ball Bearing Frames	18"	13-06483	$59.95
Ball Bearing Frames	24"	13-06484	$74.75
Ball Bearing Frames	36" Non Collapsible	13-06485	$129.85
Ball Bearing Frames	36" Collapsible	13-06486	$269.95

EXTENDED BALL BEARING FRAMES

These windsock ball bearing extended frames are a rugged design constructed of a welded steel construction and then a powder coated finish for corrosion protection. They incorporate the same high quality construction as our standard ball bearing frames with the added performance of an extened frame. They incorporate a two bearing pivoting design for effortless pivoting. These frames are ready to be mounted on a ¾" female pipe thread for the 13"and 18" frames. Use 1" female pipe thread for mounting the 24" and 36" frames.

Description	Size	Part No.	Price
Extended Ball Bearing Frames	13"	13-06487	$77.90
Extended Ball Bearing Frames	18"	13-06488	$91.50
Extended Ball Bearing Frames	24"	13-06489	$114.95

VERTICAL SOCK KITS

These complete kits include our standard frame, windsock, windsock ties, pole, and brackets. They are a stand alone unit for mounting on a flat vertical surface or they can be installed right onto an existing 3/4" pipe thread pole.

Description	Size	Part No.	Price
Vertical Mount Windsock Kit	8" x 36"	13-06491	$87.80
Vertical Mount Windsock Kit	13 " x 54"	13-06494	$89.95
Vertical Mount Windsock Kit	18" x 60"	13-06495	$95.75
Vertical Mount Windsock Kit	18" x 96"	13-06496	$103.95

TRIPOD MOUNT WINDSOCK KIT

These complete kits include our standard frame, windsock, windsock ties, pole, and tripod. They are a stand alone unit for mounting on a flat horizontal or peaked roof surface or they can be installed right onto an existing 3/4" pipe thread pole.

Description	Size	Part No.	Price
Tripod Mount Windsock Kit	8" x 36"	13-06497	$89.95
Tripod Mount Windsock Kit	13" x 54"	13-06498	$103.75
Tripod Mount Windsock Kit	18 x 60"	13-06499	$113.95
Tripod Mount Windsock Kit	18" x 96"	13-06501	$119.95

PORTABLE WINDSOCK KIT

This rugged, stand alone unit comes complete with the pole, frame, windsock and windsock ties. This free standing system measures over 7' tall in its assembled configuration. * It features an extremely rugged design that incorporates a pole with a foot lug and handle for easy installation and removal. The two part pole disassembles for easy transportation. * The frame conveniently screws onto the top of the pole. Its aluminum hoop and bail pivot on a stainless steel shaft for years of reliable and responsive action. These high quality socks are constructed from U.S. made nylon fabric that is urethane coated and UV protected.

Description	Size	Part No.	Price
Portable Windsock Kit	6 " x 24"	13-06502	$104.75
Portable Windsock Kit	8 " x 36"	13-06503	$111.75
Portable Windsock Kit	13" x 54"	13-06504	$118.75

AVIATION UNLIGHTED WINDSOCK FRAMES

Non-lighted, heavy duty ball-bearing frame, with 1-75 to 300W lamp, extended to 30" double hoop frameworks. (3/8" round metal frameworks) FAA approved sizes per FAA Advisory Circular #AC150/5345-27C dated 07/19/85. Furnished complete with windsocks.

Description	Part No.	Price
13" w/ Windsock	13-04330	$97.50
18" w/ Windsock	13-04331	$169.00
20" w/ Windsock	13-04332	$179.85
24" w/ Windsock	13-04333	$233.95
36" w/ Windsock	13-04334	$510.00
Windsock Stationary Base	13-04335	$79.50
Windsock Hinged Base	13-04336	$179.95
Windsock Heavy Duty Pole	13-04337	$93.80
Windsock Galvanized Pole	13-04338	$50.75

AVIATION LIGHTED WINDSOCK FRAMES

Internally lighted, heavy duty ball-bearing frame, with 1-75 to 300W lamp, extended to 30" double hoop frameworks. (3/8" round metal frameworks) FAA approved sizes per FAA Advisory Circular #AC150/5345-27C dated 07/19/85. Furnished complete with windsocks.

18" dia.....P/N 13-02043 ..... $598.00
20" dia.....P/N 13-05729 ..... $562.00
24" dia.....P/N 13-05730 ..... $585.00
36" dia.....P/N 13-05731 ..... $978.00

WINDSOCK FRAMES

Totally enclosed housing prevents heavy duty ball-bearing from lock-ups, corrosion, and excessive premature wear. Bearings are grease packed, metal shielded. Self contained unit easily attaches with 3/4" standard threaded pipe.

6" dia. ..... P/N 13-20120 ..... $59.95
9" dia. ..... P/N 13-20121 ..... $66.50
10" dia. ..... P/N 13-20122 ..... $69.95

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

WINDSOCKS – RUNWAY/TAXI LIGHTS

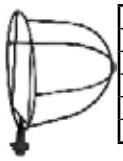
STANDARD WINDSOCKS

These windsocks are fabricated with doubly sewn seams and brass grommets for attachment. Bright red/orange nylon provides good long distance visibility.

Description	Part No.	Price
8" x 30"L Sock	05-05222	$42.55
13"x 55"L Sock	05-05223	$51.95
18" x 71"L Sock	05-05224	$56.75
24"x 120"L Sock	05-05225	$86.75
36"x 120"L Sock	05-05226	$115.75

STANDARD FRAMES

Internally supports the windsock for more accuracy. Frames are finished using a powder coated weather guard finish. Smooth free swiveling movement with low maintenance. Mounts on standard pipe.



Description	Part No.	Price
8" Frame requires 3/8" pipe mount	05-05227	$51.75
13" Frame requires 1/2" pipe mount	05-05228	$58.75
18" Frame requires 3/4" pipe mount	05-05229	$53.75
24" Frame requires 3/4" pipe mount	05-05230	$60.00
36" Frame requires 1-1/4" pipe mount	05-05231	$194.75

LIGHTED FRAME & WINDSOCK

Internally lighted frame creating super night-time visibility!

Description	Part No.	Price
13" Frame & Sock	05-06245	$222.95
18" Frame & Sock	05-06246	$396.00
13" Replacement Lighted Frame	05-06247	$216.95
18" Replacement Lighted Frame	05-06248	$249.95

REPLACEMENT WINDSOCK FOR LIGHTED FRAME

Description	Part No.	Price
13" x 55" long Sock	05-06249	$29.95
18" x 60" long Sock	05-06250	$38.95

MINI WINDSOCK & FRAME

For home, office, workshop or clubhouse. Gives wind direction and velocity. 23" steel shaft with black directional headings.

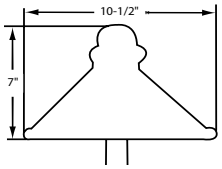
Mini Windsock & Frame, 22-1/8"H X 10"W ..... P/N 05-06251 ..... $69.90

Mini Replacement Sock, 14-1/2" Length ..... P/N 05-06252 ..... $23.85

RUNWAY LIGHTS / TAXI LIGHTS

- 10 Watts
- Operates on standard 115V
- Equipped with long-life outdoor bulb
- Uses No. 8 or No. 10 standard underground cable. Check w/State & local building codes
- Uses standard 1" wood or steel stake
- Marker cone has high luster baked-on finish
- High illuminated optical lens
- Equipped with 6" attached pigtail
- Constructed of lifetime aluminum components
- Preassembled - Strip kits ready for hookup.

Excellent Quality • Economical Pricing • High Optical Output • Immediate Delivery • Lowest Operating Cost •Minimum Installation & Maintenance Cost



RUNWAY LIGHT KITS

These realistically priced lights are inexpensive to install, require little maintenance, and are economical to operate. The shield has a baked on finish equipped with high illuminating lens. Also includes 6" attach pigtail. Operates on standard 115V. Code 7

3200 FT. STRIP KIT

Includes: 18 white lamps and 4 green threshold lamps.

P/N 05-05198 ..... $1,162.00

2200 FT. STRIP KIT

Includes: 10 white lamps and 4 green threshold lamps.

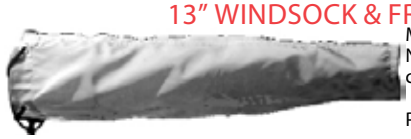
P/N 05-05199 ..... $745.00

THRESHOLD DUAL RED/GREEN ASSEMBLY

Designed for threshold installations requiring this type of configuration. Includes 6 red/green lamps. Set of 6.

P/N 05-05201 ..... $369.00

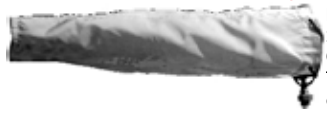
13" WINDSOCK & FRAME



Made of bright red-orange Nylon and a white powder coated frame.

P/N 05-05232 ..... $79.75

36" COMMERCIAL/ MILITARY WINDSOCK



Designed to conform to rigid Federal Standard #595 with International Orange Mil Spec CCC-C-476 nylon. This sock has a four-fold reinforced collar, throat, and tail, with double-stitching. Incorporates precipitation drain, and has direct frame attach clinch fastener. Includes fastening hardware. 135" mounted length. Frame not included.

P/N 05-05233 ..... $374.00

INTERNATIONAL EUROSOCK™

Multi-panel sock of bright red/orange and white provides very distinctive visibility, both from air and ground. Fits the standard frames (sold separately).

13" Eurosock x 55"Length ..... P/N 05-05234 ..... $58.75

18" Eurosock x 71"Length ..... P/N 05-05235 ..... $74.75

WINDSOCK-IT WINDSOCK

Windsock-It is a small calibrated windsock for accurate wind speed and direction information. The orange windsock measures 6.5" dia. x 27" long. Sock is mounted on a specially designed internal frame, which keeps the mouth open at all times. The windsock provides information in breezes as light as 2 mph, and is fully extended at 15 mph. Included chrome plated steel mast, adjustable in length from 33" to a full 4.5 ft. This windsock is not a toy, but an honest-to-goodness windsock! Ideal for heliports, hangers and private airstrips.

Windsock-it ..... P/N 13-20015 ..... $57.95

Replacement Sock ..... P/N 14-01012 ..... $23.50

PS

MONTAGUE FOLDING BICYCLES

MONTAGUE CROSSTOWN BIKE

Color: Ghost White/Black. Frame: Custom drawn 7005 Series, Aluminum tubing with FIT System. Fork: Rigid Unicrown, with CLIX™ Rims: Alex. Alloy, 36 hole, Silver. 700c. Tires: Kenda Kwick. Spokes: 14 Gage Saddle: Performance comfort with Internal Springs and "Center Gap". Seatpost: 27.2 X 300mm Alloy. Handlebars: Riser style 30mm rise. 600mm wide. Alloy, Black. Stem: Octagon™ height adjustable stem. No tools required. Crankset: Single chainwheel. Alloy 170mm crank arm. Speeds: 7 Pedals: Trekking pedal with all-weather non-slip tread Folded Size: 36" x 28" x 12" Approx Weight: 27lbs

17in Frame: 4'8" - 5'2" 700C ..... P/N 13-07241 ..... $659.99
19in Frame: 5'3" - 5'10" 700C ..... P/N 13-07242 ..... $659.99
21in Frame: 5'11" - 6'4" 700 C ..... P/N 13-07243 ..... $659.99

MONTAGUE PARATROOPER PRO

Color Matte Black. Frame Custom drawn 7005 Series Aluminum with FIT System. Alloy one piece lower. Disc Compatible. Rims Alloy, 32 hole. Double Wall. Black. Tires CST Critter. Knobby. 26 x 1.95". Hubset Formula Disc. Black, Alloy. Sealed front & rear with CLIX™ front quick release. Spokes 14 Gauge Stainless. Shifters Shimano RAPIDFIRE Plus Trigger Shifters. 27 Speeds. Brakeset Tektro Novela. Front & rear mechanical disc w/ pad adjustment. Alloy Levers. Pedals Platform pedal with steel cage. Bottom Bracket Sealed Cartridge. Frame Sizes 18", 20". Stand over heights 30", 31". Folded Size 36" x 28" x 12". Approx Weight 29lbs.

18in Frame: 5'3" - 5'10" ..... P/N 13-12970 ..... $999.99
20in Frame: 5'11" - 6'4" ..... P/N 13-12971 ..... $999.99

MONTAGUE BOSTON BIKE

Color: Matte Black Frame: Custom drawn 7005 Series. Aluminum tubing with horizontal dropouts and FIT System. Fork: Full Cro-Mo, with CLIX™ Rims: Alex. Alloy, 36 hole, Black. 700c. Tires: Kenda Kwick Roller Sport 700c x 28mm slick. Rear. Spokes: 14 Gage Handlebars: Riser style 30mm rise. 530mm wide. Crankset: SR Suntour. Alloy 42T chainwheel withIntegrated chain guard. Alloy 170mm crank arm. Speeds: Single Speed Pedals: Platform trekking pedal. Aluminum Cage. Folded Size: 36" x 28" x 12" Approx Weight: 24lbs

19 in Frame: 5'3" - 5'10" 700C ..... P/N 13-07244 ..... $699.00
21in Frame: 5'11" - 6'4" 700C ..... P/N 13-07245 ..... $699.99

MONTAGUE BOSTON 8 SPEED 700C

Color Matte Black. Frame Custom drawn 7005 Series. Rims Alex. Alloy, 32 hole, Black. 700c. Tires Kenda Kwick Roller Sport 700c x 28mm slick. Hubset Formula. Alloy, with CLIX™ front quick release. Shimano Nexus internal rear. Spokes 14 Gauge Stainless. Shifters Shimano Nexus 8-speed. Frame Sizes 17", 19", 21". Folded Size 36" x 28" x 12". Approx Weight 27lbs.

17in Frame: 4'8" - 5'2" 700C ..... P/N 13-12972 ..... $1,049.99
19in Frame: 5'3" - 5'10" 700C ..... P/N 13-12973 ..... $1,049.99
21in Frame: 5'11" - 6'4" 700 C ..... P/N 13-12974 ..... $1,049.99

MONTAGUE NAVIGATOR BIKE

Color: Midnight Blue/Black Frame: Custom drawn 7005 Series Aluminum with FIT System. Fork: Full Cro-Mo, with CLIX™ Rims: Alex. Alloy, 32 hole, Silver. Tires: Kenda Kwick Roller Sport 700c x 26mm semi-slick. Spokes: 14 Gage Handlebars: Alloy, 30mm rise. Stem: Octagon™ height adjustable stem. No tools required. Shifters: Shimano Rapid Fire Road for Flat Handlebar. 3-Speed Left. 9-Speed Right Crankset: SR Suntour. 48/38/28. Alloy 170mm crank arm. Black. Speeds: 27 Speeds Folded Size: 36" x 28" x 12" Weight: 27lbs

19 inch Frame ..... P/N 13-07246 ..... $949.99
21 inch Frame ..... P/N 13-07247 ..... $949.99

MONTAGUE FIT BIKE

Hunter: Green/Black Frame: Custom drawn 7005 Series Aluminum with FIT System. Fork: Full Cro-Mo, with CLIX™ Rims: XERO 700c. 28c hole rear, 24 hole front. Silver. Tires: Kenda Kwick Roller Sport 700c x 26mm slick. Spokes: 14 Gage Saddle: Double Density Performance, with "Center Gap" Comfort Technology. Handlebars: Kalloy. Alloy, double butted. 25mm rise, 8 degree backsweep. Stem: Octagon™ height adjustable stem. No tools required. Shifters Shimano trigger shifters. Speeds: 27 Speeds Pedals: Aluminum trekking pedal. Cro-Mo Spindle. Silver Aluminum Body. Folded Size: 36" x 28" x 12" Approx Weight: 26.5lbs

19 in Frame ..... P/N 13-07248 ..... $1,449.99
21 in Frame ..... P/N 13-07249 ..... $1,449.99

MONTAGUE PARATROOPER™

The Paratrooper is one of the many folding mountain bikes that Montague offers. Its patented folding design was developed to allow airborne soldiers to drop out of airplanes and helicopters and into combat. The Paratrooper offers advanced features with 24 speeds and front and rear mechanical disc brakes. Known for its durability and load bearing capabilities, this folding bike has also developed a following with everyday commuters and weekend warriors. The Folding Integrated Technology (F.I.T.) is based around frame construction concepts designed for serious full suspension downhill bikes.

18" ..... P/N 13-01068 ..... $849.99
20" ..... P/N 13-01069 ..... $849.99

MONTAGUE SWISS X50 BIKE

The Montague SwissBike X50 is designed to fold and fit anywhere. With front suspension and all terrain tires, this 18-speed folding mountain bike makes for the perfect light trail bike for weekend excursions, or a rugged commuter bike. The X50 uses all standard 26" mountain bike wheels and components serviceable at any bike shop.

Color: Gloss Black. Frame: Custom drawn 7005 Series Aluminum with FIT System. Power Angle geometry. Fork: SR Suntour. Suspension XCT V2. 80mm travel. Alloy one piece lower. Disc Compatible. Rims: Alex. Alloy, 36 hole. Tires: Kenda. Knobby. Front and Rear Specific. 26 x 1.95".

16in Frame: 4'8" - 5'2" ..... P/N 13-07250 ..... $629.99
18in Frame: 5'3" - 5'10" ..... P/N 13-07251 ..... $629.99
20in Frame: 5'11" - 6'4" ..... P/N 13-07252 ..... $629.99

MONTAGUE SWISS X70 BIKE

A brand new model that will be sure to keep the adventurer out on the trails. This bike is well-built to tackle rugged mountains and hidden dirt paths. The X70 has 27-speeds and features a Clix compatible Rock Shox Dart 3 fork. Like all SwissBikes, the X70 is designed to fit on the bus or train, and easily fit in your car trunk or boat. Speeds: 27 Wheel Size: 26" Folding Time: 20 sec. Folded Size: 36"x28"x12" Approx Weight: 29lbs

18in Frame: 5'3" - 5'10" ..... P/N 13-07253 ..... $1,199.99
20in Frame: 5'11" - 6'4" ..... P/N 13-07254 ..... $1,199.99

MONTAGUE SWISSBIKE X90

The Montague SwissBike X90 is an aggressive 30-speed folding hardtail with a stiff frame providing both performance and portability. With 26" wheels, it's a full-size bike with full-size performance, but folds to fit in the trunk of a car or in a small closet. These rugged folding bikes are built to outlast, handle any terrain, and carry a ton of gear.

Clever integration of the patented CLIX System allows the SwissBike X90 to be folded in under 20 seconds without the use of tools. A flip of the CLIX quick release lever on the top tube and the bike folds to a compact size.

The SwissBike X90 features top-of-the-line components including: SRAM Elixir 7 front and rear hydraulic disc brakes, a RockShox Sektor RL suspension fork, and a Truvativ X-9 crankset.

18in Frame: 5'3" - 5'10" ..... P/N 13-12006 ..... $2,949.99
20in Frame: 5'11" - 6'4" ..... P/N 13-12007 ..... $2,949.99

MONTAGUE ACCESSORIES

MONTAGUE FOLDING PEDALS - These pedals reduce the width of the folded bike by 4 inches. While not ideal for high performance riding, they do serve a purpose for those with tight space constraints.

P/N 13-03745 ..... $34.95

MONTAGUE CARRYING CASE ..... P/N 13-08406 ..... $99.95

MONTAGUE KICK STAND - We offer a traditional steel kickstand that attaches to the Montague bike like a standard kickstand without interfering with the unique folding feature. ..... P/N 13-03744 ..... $19.95

PS

DAHON FOLDING BICYCLES

DAHON SPEED UNO

The answer for no-hassle riding anytime. Last year Dahon introduced the functional, simple, stealthy-looking Mu Uno and it quickly became the favorite of all who touched it. The Speed Uno is just as stealthy and portable but even simpler and more affordable. Take one everywhere. BioLogic FreeDrive keeps chain and clothes clean. Folds completely in under 10 seconds. Luggage Socket for attaching a variety of bags and baskets. Color: Shadow Black P/N 13-10419 ..... $399.00

DAHON SPEED D7 FOLDING BICYCLE

The Speed combines sporty performance with terrific value. Year after year it remains Dahon's most popular bike because of this. The frame is hand-welded from custom-drawn 4130 chromoly Sonus tubing and incorporates six different patented technologies, resulting in what is probably Dahon's stiffest frame. The Neos derailleur is fast-shifting and has a nice wide, gear range – perfect for urban riding in most cities. Low profile Neos derailleur delivers super fast shifts and is protected from damage beneath the chainstay. Folds in less than 15 seconds so you can take it anywhere. The SuperLite 4130 chromoly frame is strong, light and responsive. The Radius Telescope adjustable handlepost adapts to all riders and riding styles. P/N 13-04094 ..... $549.00

DAHON SPEED P8

Probably the best combination of performance and value in our product line, the Speed P8 is perfect for long commutes, weekend exploring, or touring. The Speed P8 shares the same frame as the Speed Pro and combines it with our no compromise Premium component package. The Speed P8's stiff frame, rigid Radius handlepost, and plush-riding Schwalbe Big Apple tires inspire confidence on even the worst roads. Wheel Size: 20". Speed: 8. Folded Size: 30 x 77 x 64 cm (11.7" x 30" x 25"). Folding Time: 15 Seconds. Weight: 12.6 kg (27.8 lb). Max Rider Weight: 105 kg (230 lb). Colors Available: Fire Red, Obsidian.

P8 20" Fire Red ..... P/N 13-00043 ..... $699.00
P8 20" Obsidian ..... P/N 13-10420 ..... $699.00

DAHON MU P8

The Mu P8 is one of Dahon's most versatile, all-around bikes. It's wonderfully light, fast enough for long weekend rides, and stylish enough to turn heads everywhere you go. Great performance and a good value. Lighter, stronger, and faster are the goals and the Mu P8 delivers on all three. 20" Cloud White ..... P/N 13-00789 ..... $799.00

DAHON JACK D7

The Jack is designed to go at any pace you choose and to roll over anything in your path. Forget leaving your urban machine in that communal bike garage and getting nicked and scratched; keep it inside and safe… with you. That's how it should be, right? The Jack is designed around a beefy 7005 aluminum frame and phat Schwalbe Big Apple tires. The Jack has seven nicely-spaced gears to keep things simple, enough for most anything you're likely to encounter in the city. What kind of bike is this? It's a human powered urban machine, Jack. Color: Shadow Black.

Jack D7 16" ..... P/N 13-04795 ..... $749.00
Jack D7 18" ..... P/N 13-10423 ..... $749.00
Jack D7 20" ..... P/N 13-10424 ..... $749.00

DAHON ESPRESSO

The Espresso is the bike for urban adventures: to the park on a sunny weekend; down the street for a lazy Sunday brunch; or to the market for some fresh penne, tomatoes, and a bottle of wine. For 2010, the Espresso gets a complete makeover. The patented new Dahon Axis stem lets you fold the Espresso with a minimum of effort and Schwalbe Big Apple tires mean that you go faster, in a lot more comfort. The new Espresso is a shot of caffeine to your cycling lifestyle.

Espresso 16" ..... P/N 13-10421 ..... $699.00
Espresso 18" ..... P/N 13-10422 ..... $699.00
Espresso 20" ..... P/N 13-00791 ..... $699.00

DAHON ACCESSORIES

Description	P/N	Price
Kickstand	13-08310	$5.95
Rear Rack	13-08340	$11.80

PS

FOLDING ELECTRIC BIKES – SCOOTERS

CARRYME FOLDING BIKE

Tangerine ..... P/N 13-11637 ..... $640.00
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Carry Bag ..... P/N 13-11640 ..... $70.00

TRIKKE TRIBRED PON-E

Trikke Green ..... P/N 13-06835 ..... $1,699.99
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RIVIERA FOLDING ELECTRIC BICYCLE

Rivera ..... P/N 13-04070 ..... $849.99

PATMONT GSR CRUISER

Patmont ..... P/N 13-06077 ..... $795.00

GO-PED LIGHTWEIGHT MOTORIZED SCOOTER

Go-Ped (Sport Model) Blue ..... P/N 13-08380 ..... $485.00
Go-Ped (Sport Model) Red ..... P/N 13-08381 ..... $485.00
Go-Ped Carry Bag ..... P/N 13-08390 ..... $26.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR PHOTOS AND DESCRIPTIONS

PARA-CUSHION PARACHUTES

PARA-CUSHION 311 - WEDGE

The Para-Cushion 311 Wedge measures 24" (61cm) tall by 16" (40.5cm) wide by 1" (2.5cm) at the shoulders and 3" (7.5cm) at the lower back, and weighs approximately 16 lbs. (7.3 kg). This unique configuration allows for maximum comfort for the pilot by using the shape of the parachute system to put you in a slightly reclined position. The parachute assembly is designed to be used in airplanes where headroom is at a minimum and the backrest is at a straight upright angle with the seat bottom, such as a Pitts S1, Pitts Model 12, Christen Eagle, RV-4, RV-6, Harmon Rocket, and many others.

System Comes Complete with: Harness/Container, Mid-Lite Parachute, Ripcord, Lil Grabber Pilot Chute, Carry Bag, and Manual. TSO - C23c cat. B P/N 13-14779 ..... **$2,433.00**

PARA-CUSHION 304 - SEAT

The Para-Cushion 304 Seat, measures 12" (30.5 cm) tall by 16" (40.5 cm) wide by 1/2" (1.3 cm) thick throughout the back, and 3" (7.5 cm) thick in the seat cushion, and weighs approximately 18.5 lb. (8.4 kg).

The 304 is designed to be used in place of a seat cushion. By using an additional Confor© Foam cushion the seat thickness of the pack may be from 1" (2.5 cm) to 6" (15 cm) thick depending on the type of airplane and how high the user desires to be in the cockpit. The parachute assembly is designed to be used in airplanes where head room is not restricted or moving forward in the cockpit is not possible including: Skybolt, Yak 52, Yak 55, CJ-6, Stearman, Great Lakes, Pitts S 2B, Decathlon, RV-4 and many others.

For RV-4 and RV-8 aircraft the seat container is modified slightly to fit the exact size of the seat pan. The options for the RV version remain the same as the standard version.

System Comes Complete with: Harness/Container, Mid-Lite Parachute, Ripcord, Lil Grabber Pilot Chute, Seat Cushion, Carry Bag, and Manual. TSO - C23c cat. B. P/N 13-03441 ..... **$2,500.00**

PARA-CUSHION 306 - SQUADRON SEAT

The Para-Cushion 306 Squadron Seat measures 16.5" (42 cm) tall by 13" (33 cm) wide by 6.5" (16.5 cm) thick and weighs approximately 19.5 lbs. (8.8 kg). The pack and cushion combination are shaped to fit fully into the seat to provide a large stable, and comfortable seating area for the pilot. The harness is fully adjustable in the main lift webs (vertical straps), as well as in the lumbar area to ensure proper fit, provide support, and remain comfortable. The parachute assembly is designed to be used with the bucket style seat pan found in most warbirds such as: SN-J, T-6, Harvard, T-34, T-28, P-51, Stearman, and many others.

System Comes Complete with: Harness/Container, Mid-Lite Parachute, Ripcord, Lil Grabber Pilot Chute, Seat Cushion, Carry Bag, and Manual. TSO - C23c cat. B. P/N 13-14781 ..... **$2,582.00**

ACROPRO PARACHUTE

The AcroPro is designed with Aerobatic pilots in mind. At just 16 lbs., this lightweight, thin, and comfortable pack supports the pilot during high G maneuvers while maintaining comfort and safety.

The AcroPro, measures 24" (60 cm) tall by 16" (40 cm) wide by 3" (7 cm) thick and weighs approximately 16 lbs (6.5 kg). In many cases, by removing the back cushion of the seat pan, the pilot may place the AcroPro in its place.

Choose our Standard Harness or the Aerobatic Harness at no additional charge.

AcroPro comes with: Harness/Container, Mid-Lite Parachute if desired or C-9 (call for price), Ripcord, Lil Grabber Pilot Chute, Carry Bag, and DVD Manual. TSO - C23c cat. B & SAE AS-8015A

P/N 13-15954 ..... **$2,049.00**

PARA-CUSHION 305 - CHAIR

The Para-Cushion 305 Chair measures 42" long (105 cm) by 16" (40 cm) wide by 2.5" (6cm) to 1" (2.5cm) thick and weighs approximately 16.5 lb. (7.5 kg).

This back mounted container is built to extend from the shoulders of the user to just above the knees. This long design allows the parachute to be packed in a larger area keeping the system as thin as possible. Confor© Foam padding throughout the system allows the user to comfortably sustain flight for many long hours. The parachute assembly is designed to be used in airplanes where your seat is reclined such as a Grob, Giles 202, the rear seat of an Extra, and many others.

System Comes Complete with: Harness/Container, Mid-Lite Parachute, Ripcord, Lil Grabber Pilot Chute, Carry Bag, and Manual. TSO - C23c cat. B P/N 13-03442 ..... **$2,096.00**

PARA-CUSHION 303 - BACK

The Para-Cushion 303 measures 24" (60 cm) tall by 16" (40 cm) wide by 3" (7 cm) thick and weighs approximately 15 lbs (6.5 kg). In many cases, by removing the back cushion of the seat pan, the pilot may place the 303 in it's place. The 303 Back is recommended for use in airplanes where head room is at a minimum and moving forward in the cockpit is not a problem. Recommended for use in airplanes such as: ASW-27, PW-5, Cap-10, Zlin 50, and Christen Eagle.

System Comes Complete with: Harness/Container, Mid-Lite Parachute, Ripcord, Lil Grabber Pilot Chute, Carry Bag, and Manual. TSO - C23c cat. B.

P/N 13-03440 ..... **$2,433.00**

PARA-CUSHION L-39

The Para-Cushion L-39, measures 27" (68.6 cm) tall by 17" (43.2 cm) wide by 3.5" (8.9 cm) thick and weighs approximately 25.9 lb. (11.7 kg). The L-39 is designed exclusively for the L-39 Albatross. The design incorporates existing Russian designed pilot restraint system found on the original assembly, including shoulder roller guide for inertial reel and seat belt buckles at the hips. This provides you with fit-and-fly technology that perfectly replaces the original equipment and gives you peace of mind knowing that you have a comfortable, top of the line system.

System Comes Complete with: Harness/Container, 28' C-9 Parachute, Ripcord, Travel Cushion, G-Pad, Static Line, Lil Grabber Pilot Chute, Carry Bag, and Manual. TSO - C23c cat. B.

P/N 13-15068 ..... **$3,398.95**

MID-LITE CANOPY

The 26' Mid-Lite is the finest reserve canopy available! It is a highly reliable 24 gore canopy. It is tested and approved to FAA TSO C23c Category B.

The canopy has been tested to withstand a 5000lb shock load, which means it is built to withstand the rigors of an emergency bail-out. In production since 1987 the Mid-Lite has proven time and time again that it is the most rugged and reliable reserve you can own!

Canopy Shape	Conical	**Canopy Cloth**	30-50 cfm (PIA-C-44378d)
Size	26'	**Turn Speed**	Approx. 7 sec
Number of Gores	24	**Forward Speed**	6 -8 mph (10-12 km/h)
Line Length	17' 6"	**Opening Time**	1.1 - 2.3 sec
Panels Per Gore	4	**Rate of Descent**	18.5 fps @ 225 lbs (5.7 mps)
Suspension Line Material	Type 1A	**Canopy Weight**	Approx. 7 lbs
Suspension Line Strength	400 lbs	**Maximum Weight**	254 lbs (115 kg)

P/N 13-14782 ..... **$1,183.00**

ACCESSORIES

CUSTOM MONOGRAMMING - Monogram your name, N number, or anything that space will allow on the front of your container.
P/N 13-04907 ..... **$42.90**

CAPEWELL RISER RELEASE - For landing in high wind conditions allows the pilot to release the parachute, to prevent dragging. Disadvantages -- Heavy and expensive hardware. P/N 13-04908 ..... **$355.00**

LUMBAR SUPPORT PAD - A rounded Tempor® foam pad that attaches in existing channel. Adjustable to just the right position in the small of your back. P/N 13-15065 ..... **$84.95**

PARA-CUSHION G-PAD CUSHION - An auxiliary pad that attaches to the back pad of any Para-Cushion. G-pad is formed to snugly fit around the pilot's sides providing extra support during high G maneuvers.
P/N 13-15066 ..... **$149.95**

ELT POCKET - This external pocket snaps onto the system and holds the pilots ELT system. P/N 13-15949 ..... **$115.95**

STATIC LINE - 15' Static Line including B-12 Snap and RW-3 Ring.
P/N 13-16009 ..... **$40.00**

SHEEPSKIN BACK PAD - Sheepskin pads keep you cool in the summer and warm in the winter.
Smoke ..... P/N 13-11307 ..... **$179.00**
Natural ..... P/N 13-11309 ..... **$179.00**
Black ..... P/N 13-04911 ..... **$195.00**

QUICK EJECTOR SNAPS - This is the Military type hardware that can be used in place of the standard B-12 snaps. Works best for former military pilots who have become accustomed to this type of hardware.
Snaps ..... P/N 13-04909 ..... **$155.00**
Aerobatic Snaps . P/N 13-04910 ..... **$115.00**

AEROBATIC HARNESS - This is an option that can be added at no additional cost. This harness option moves the snaps that normally sit on top of the pilots legs, to your chest, where there is no pressure from a seat belt. This works best where a Hooker Harness Ratchet type seat belt is used. ..... P/N 13-04912

AERO PAD - A zip-on seat pad held in place by the pilot's weight to restrain the Para-Cushion and prevent shifting during high G maneuvers.
P/N 13-15067 ..... **$104.95**

PS

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NATIONAL 360 PREMIUM BACK PARACHUTE

360 Premium Trim Emergency Back Parachutes: Standard design includes a tapered width and teardrop shape that hugs the back and also provides comfortable lower lumbar support.
National parachutes are the choice of numerous aerobatics champions and professionals. Designed thin, light weight and with comfort in mind and incorporates a user-adjustable main lift web (hip junction) harness.
Color Choice: Black or Red or Navy Blue (Black Trim & Harness)

Description	Part No.	Price
B2 = 2 ea B12 Snaps Legs & (TT) Thread Thru Adapter Chest	13-06263	$1,875.00
B3 = 3 ea B12 Snaps Legs & Chest	13-12280	$1,895.00
T3 = 3 ea (TT) Thread Thru Adapters Legs & Chest	13-15773	$1,845.00
O2 = 2 ea OE Snaps Legs & (TT) Thread Thru Adapter Chest	13-15772	$1,989.00
O3 = 3 ea OE Snaps Legs & Chest	13-15780	$2,075.00

NATIONAL PARACHUTE 360 PREMIUM SEAT

National's Seat Pack is especially desirable when the cockpit has more vertical space than horizontal. For added comfort, the seat pad has one inch of "Astronaut Foam" above the parachute container (user accessible/adjustable via Velcro closure).
Color choices include: Navy blue, Royal Blue, Red, Red and Black. All four color choices are available with matching binding and harness or black binding, diamond quilting and harness.
*360 = Recommended Pilot Weight is up to 177 lbs.

Description	Part No.	Price
B2 = 2 ea B12 Snaps Legs & (TT) Thread Thru Adapter Chest	13-15784	$1,999.00
B3 = 3 ea B12 Snaps Legs & Chest	13-15786	$2,115.00
O2 = 2 ea OE Snaps Legs & (TT) Thread Thru Adapter Chest	13-15785	$2,145.00
O3 = 3 ea OE Snaps Legs & Chest	13-15787	$2,230.00

NATIONAL 425 PREMIUM BACK PARACHUTE

Standard design includes a tapered width and teardrop shape that hugs the back and also provides comfortable lower lumbar support. National parachutes are the choice of numerous aerobatics champions and professionals. Designed thin, light weight and with comfort in mind and incorporates a user-adjustable main lift web (hip junction) harness.
Color Choice: Black, Red, Royal Blue or Navy Blue (Black Trim & Harness)

Description	Part No.	Price
B2 = 2 ea B12 Snaps Legs & (TT) Thread Thru Adapter Chest	13-06264	$1,875.00
B3 = 3 ea B12 Snaps Legs & Chest	13-12281	$1,895.00
T3 = 3 ea (TT) Thread Thru Adapters Legs & Chest	13-15775	$1,893.00
O2 = 2 ea OE Snaps Legs & (TT) Thread Thru Adapter Chest	13-15774	$2,035.00
O3 = 3 ea OE Snaps Legs & Chest	13-15781	$2,125.00

NATIONAL PARACHUTE 425 PREMIUM SEAT

National's Seat Pack is especially desirable when the cockpit has more vertical space than horizontal. For added comfort, the seat pad has one inch of "Astronaut Foam" above the parachute container (user accessible/adjustable via Velcro closure).
Color choices include: Navy blue, Royal Blue, Red, Red and Black. All four color choices are available with matching binding and harness or black binding, diamond quilting and harness.
*425 = Recommended Pilot Weight is up to 208 lbs.

Description	Part No.	Price
B2 = 2 ea B12 Snaps Legs & (TT) Thread Thru Adapter Chest	13-15788	$2,045.00
B3 = 3 ea B12 Snaps Legs & Chest	13-15790	$2,060.00
O2 = 2 ea OE Snaps Legs & (TT) Thread Thru Adapter Chest	13-15789	$2,189.00
O3 = 3 ea OE Snaps Legs & Chest	13-15791	$2,278.00

NATIONAL 490 PREMIUM BACK PARACHUTE

490 Premium Trim Emergency Back Parachutes: Standard design includes a tapered width and teardrop shape that hugs the back and also provides comfortable lower lumbar support. National parachutes are the choice of numerous aerobatics champions and professionals. Designed thin, light weight and with comfort in mind and incorporates a user-adjustable main lift web (hip junction) harness.
Color Choice: Black or Red or Navy Blue (Black Trim & Harness)

Description	Part No.	Price
B2 = 2 ea B12 Snaps Legs & (TT) Thread Thru Adapter Chest	13-06265	$1,995.00
B3 = 3 ea B12 Snaps Legs & Chest	13-12283	$1,995.00
T3 = 3 ea (TT) Thread Thru Adapters Legs & Chest	13-15779	$1,950.00
O2 = 2 ea OE Snaps Legs & (TT) Thread Thru Adapter Chest	13-15778	$2,095.00
O3 = 3 ea OE Snaps Legs & Chest	13-15783	$2,125.00

SOFTIE EMERGENCY PARACHUTES

MINI-SOFTIE - Extremely small, lightweight and comfortable backpack parachute system designed for use in today's restricted cockpit enviroments, and by persons weighing up to 240 lbs. Choice of Conventional Harness or Aerobatic Harness. Container is 2.25" thick x 15" wide x 23" long. Canopy Type: Steerable Conical. Total weight: 15 lbs. P/N 13-03505-X.....$2,335.00

MICRO-SOFTIE - Designed to fit and stay secure over the shoulder of smaller individuals. Used by persons weighing up to 180 lbs. Choice of the Conventional or Aerobatic harness. Container is 2.25" thick x 13" wide x 22" long. Canopy Type: Steerable Conical*. Total weight: 14 lbs.
P/N 13-03510-X.....$2,335.00

LONG-SOFTIE - Designed to conform to and maximize the comfort of the seating found in todays high performance gliders and aerobatic aircraft. Available in either 180 lb.(13" wide) or 240 lb. (15" wide) versions. Choice of standard H harness or the unique crossover style Aerobatic Harness. Container specifications: 2.25" thick x 13" or 15" wide x 35" long. Canopy Type: Steerable Conical. Total weight: 16 lbs.
P/N 13-03515-X.....$2,385.00

SOFTIE-SEAT PACK - Designed for use in aircraft that have no room for a backpack style parachute. Used by persons weighing up to 240 lbs. Container is 15" wide 14" fore & aft 2 1/2" thick. Canopy Type: Steerable Conical. Total weight: 16 lbs. P/N 13-09052-X.....$2,085.00

WEDGE-SOFTIE - Designed specifically to add lumbar and sacral support during high, positive G maneuvers. Ideal for the upright seating found in Pitts style seating. Available in either 180 lb. or 240 lb. versions. Choice of standard H harness or our unique crossover style Aerobatic Harness. Container is 2 1/2" thick at bottom, 1/2" thick at top x 15" wide x 23" long. Canopy Type: Steerable Conical*. Total weight: 15
P/N 13-03524.....$2,335.00

WARBIRD SEAT PACK SOFTIE - Designed to fit into the older style "bucket" seats found in warbird aircraft, and for persons weighing up to 240 lbs. The container is 14" wide 11" fore & aft 6" thick. Canopy Type: Steerable Conical. Total weight: 17 lbs P/N 13-03520-1A.....$2,085.00

VISIT OUR WEBSITE FOR ADDITIONAL OPTIONS AND HARNESS CHOICES.

NOTE: Complete the Part Number with Color (-1) Red, (-2) Black (-3) Royal Blue, (-4) Navy Blue, (-5) Grey, (-6) Sage Green or (-7) Olive Drab. Also complete P/N with "C" for Conventional or "A" for Aerobatic. Example: P/N 13-00000-5A.

NATIONAL PARACHUTE 490 PREMIUM SEAT

National's Seat Pack is especially desirable when the cockpit has more vertical space than horizontal. For added comfort, the seat pad has one inch of "Astronaut Foam" above the parachute container (user accessible/adjustable via Velcro closure).
Color choices include: Navy blue, Royal Blue, Red, Red and Black. All four color choices are available with matching binding and harness or black binding, diamond quilting and harness.
*425 = Recommended Pilot Weight is up to 208 lbs.

Description	Part No.	Price
B2 = 2 ea B12 Snaps Legs & (TT) Thread Thru Adapter Chest	13-15793	$2,105.00
B3 = 3 ea B12 Snaps Legs & Chest	13-15792	$2,120.00
O2 = 2 ea OE Snaps Legs & (TT) Thread Thru Adapter Chest	13-15794	$2,248.00
O3 = 3 ea OE Snaps Legs & Chest	13-15795	$2,337.00

PS

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Checkmate is the only checklist that contains virtually all data desired by pilots to fly the airplane while excluding the extraneous information which leads to inefficiency, confusion and even refusal to use. They eliminate the tedious and cluttered 15-page flip-book that pilots quickly become discouraged from using.

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Available for over 300 single and twin engine aircraft. All follow a standard format. Used by some of the best flight schools in the country. Checkmate Standard Checklists is 6.5" x9" size. Checkmate Compact Checklist 5"x7" size.

Description	Part No.
Alarus/Zenith CH2000	13-04627
Aviat Husky A1-B	13-05490
Aviat Husky A1-B Amphibian	13-05491
Beechcraft Baron B55 64'-76'	13-04649
Beechcraft Baron B55 77'-82'	13-04650
Beechcraft Baron 58 285 HP	13-04651
Beechcraft Baron 58 300 HP	13-04652
Beechcraft Baron 58P 310 HP	13-04653
Beechcraft Baron 58P 325 HP	13-04654
Beechcraft G58 G100	13-04655
Beechcraft Bonanza A36 '84 & On	13-08699
Beechcraft Bonanza F33A	13-04601
Beechcraft Bonanza G36 G1000	13-04608
Beechcraft Bonanza JKM35	13-04602
Beechcraft Bonanza NP35	13-04604
Beechcraft Bonanza V35	13-04605
Beechcraft Bonanza V35TC	13-04606
Beechcraft Bonanza A36 thru '83	13-04607
Beechcraft Debonair CEF33	13-08697
Beechcraft Duchess 76	13-04648
Beechcraft Bonanza S35	13-08698
Beechcraft Sundowner	13-08696
Cessna 150 D-K	13-08605
Cessna 150 '59-'63 Quickmate	13-00708
Cessna 150 '59-'63	13-07301
Cessna 150L	13-08606
Cessna 150M	13-08607
Cessna 152	13-08610
Cessna 172 F, G, H	13-08612
Cessna 172 I, K, L	13-08613
Cessna 172 M	13-08615
Cessna 172 N	13-08620
Cessna 172 P	13-08625
Cessna 172 P 6.5"x4"	13-08630
Cessna 172 R G1000	13-04575
Cessna 172 RG	13-08635
Cessna 172 S	13-04576
Cessna 172 S G1000	13-04577
Cessna 177	13-08636
Cessna 177 RG	13-08637
Cessna 182 E-M	13-08638
Cessna 182 P	13-08639
Cessna 182 Q	13-08640
Cessna 182 R	13-08641
Cessna 182 RG	13-08645
Cessna 182 S	13-04578
Cessna 182 T	13-04579
Cessna 182 T G1000	13-04580
Cessna T182T	13-04581
Cessna T182T G1000	13-04582
Cessna 206H	13-04583
Cessna 206H G1000	13-04584
Cessna T206H G1000	13-04585
Cessna T206H G1000,GFC700 S	13-05637
Cessna T206H G1000,GFC700 C	13-05638
Cessna T206H G1000 Amphibian	13-05394
Cessna 210M	13-05476
Cessna T210M	13-05483
Cessna 210N	13-05482
Cessna T210N	13-05484
Cessna 303 Turbo Crusader S	13-05635
Cessna 303 Turbo Crusader C	13-05636
Cessna 310Q	13-04629
Cessna 310R	13-04630

Description	Part No.
Cessna 340A	13-04631
Cessna 402B	13-04632
Cessna 421B	13-04634
Cessna 421C	13-04637
Cirrus SR20-Electric	13-04614
Cirrus SR22	13-04615
Citabria 7ECA	13-11858
Citabria 7KCAA	13-11859
Citabria 7KCAB	13-11860
Citabria 7GCBC	13-11861
Diamond DA20 C1	13-04621
Diamond DA20-100	13-04622
Diamond DA40-180	13-04623
Diamond DA40-180 G1000	13-04624
Diamond DA40-180 FP	13-04625
Diamond DA40-180 FP G1000	13-04626
Diamond A42 G1000	13-04656
Maule MT 7-235	13-04613
Mooney 201 (M20J)	13-08700
Mooney Encore M20K	13-05492
Mooney M20K-231	13-04616
Mooney M20K-252	13-04617
Mooney M20M/Bravo	13-04618
Mooney M20M/Ovation	13-04619
Mooney M20R/Ovation	13-05493
Mooney M20R/Ovation G1000	13-04620
Mooney M20S/Eagle	13-05494
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Mooney M20TN/Acclaim Compact	13-04715
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Piper Cherokee 140	13-08655
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Piper Cherokee 235	13-08685
Piper Cherokee Six/26	13-05485
Piper Cherokee Six/30	13-05486
Piper Lance	13-04594
Piper Lance II Turbo	13-05488
Piper Malibu 310	13-04598
Piper Mirage 350	13-04599
Piper Navajo 310	13-04645
Piper Navajo 350 Chieftan	13-04647
Piper Saratoga FG	13-04595
Piper Saratoga SP	13-05489
Piper Saratoga II HP	13-04596
Piper Saratoga II TC	13-04597
Piper Seminole	13-08690
Piper Seneca I	13-04639
Piper Seneca II	13-08695
Piper Seneca III	13-04640
Piper Seneca IV	13-04641
Piper Seneca V	13-04642
Piper Tomahawk	13-08650
Piper Twin Comanche	13-04638
Piper Warrior	13-04588
Piper Warrior II	13-08665
Piper Warrior III	13-04590
Piper Warrior III with Avidyne Entegra	13-05640
Piper Warrior III	13-05639
Symphony SA160	13-04628

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CHECKMATE IFR

In the IFR environment organization and management lead to smoother, stress-free and safer outcomes. CheckMate IFR will assist you through preflight planning to touch-down on the IFR flight. Whether you are cleared for the complete approach or radar vectored to the FAF, CheckMate IFRs format will help keep the flight business orderly and functional. It is precise & specific to the different phases of those sometimes precarious flights. You will be reminded when to prepare and look ahead to each phase. A quick review of CheckMate IFR before flight will help you determine pilot and aircraft preparedness and legalities, how to give those greatly appreciated pilot reports on icing and turbulence, and what ATC expects you to do after radio failure; Professional information in a concise and orderly manner. Standard (6" x 9.5").....P/N 13-08805.....$14.95
Compact (5" x 7").....P/N 13-08810.....$13.95

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Surviving the First 24 Hours CheckMate® clearly details the procedures and equipment that you will need to survive a forced landing and the subsequent 24 hours. The preparation before a flight can easily make the difference between surviving or not surviving. This is one of the most important pieces of equipment in a pilot's pre-flight planning.

Available in three sizes.
Standard (6.5"x 9").....P/N 13-00444.....$14.95
Compact (5"x 7").....P/N 13-00446.....$14.50
Pocket (3.75"x 3.25").....P/N 13-00447.....$8.50

CHECKBOOK CHECKLISTS

Aviation Checkbook is a high quality, multi-page laminated checklist utilizing factory type information for FAA Part 141 and 61 schools. Designed as a primary checklist giving all details and responses needed by new students or pilots wanting a multi-page checklist without the usual bulk. Shirt pocket size with mark and erase surface for notes. The various checklists for your aircraft are stacked and color tabs allow you to locate the checklist you need.

Part No.	Description (Checkbook Checklist for:)	Price
13-03091	Cessna150 D-K	$17.95
13-01262	Cessna 150M	$9.95
13-01264	Cessna 172FGH	$9.95
13-01268	Cessna 172R	$17.95
13-01270	Cessna 172P	$9.95
13-03102	Cessna 172RG	$17.95
13-01272	Cessna 182E-M	$17.95
13-01273	Cessna 182N	$9.95
13-01288	Piper Seminole	$13.95
13-01291	Piper Seneca I	$13.95
13-01275	Cessna 182Q	$9.95

Part No.	Description (Checkbook Checklist for:)	Price ea.
13-01276	Cessna 182R	$9.95
13-01277	Cessna 182S	$9.95
13-01278	Cessna 182RG	$9.95
13-01280	Cherokee160	$9.95
13-01282	Piper Warrior	$9.95
13-01283	Piper Warrior II	$9.95
13-01284	Piper Archer II	$9.95
13-01286	Piper Arrow II	$17.95
13-01287	Piper Arrow III	$9.95

FLYWRITE COCKPIT WRITING PAD

FlyWrite™ is not another "flight planning" layout. It is designed to give you a dedicated place for all the information that flows while in the cockpit of the aircraft. Convenient top-bound writing pad. Each pad contains 50 5" x 8" sheets and can be used with or without standard junior legal vinyl binders. IFR clearances, ATIS, AWOS, frequencies, flight times, hobbs times, tach times, airport information , frequency changes, hand-off's, altitude changes, weather, etc, now have a home. There is also an area for random information or diagrams. FlyWrite™ also contains a handy vertical scale which measures mileage for WAC, SEC, TAC, NOS, JEPP, & ELA charts, eliminating the need for that ruler you can never find.

P/N 13-03307.....$5.95

MOUNTAIN FLYING CHECKMATE

CheckMate Aviation's new Mountain Flying CheckMate™ is a full color, plastic card that is a compilation of the special knowledge required for mountain flying. Competent flying in mountainous terrain requires knowledge far beyond what is taught in standard flight courses; and as most pilots discover, sooner or later, flying in mountainous terrain is inevitable.

CheckMate Aviation's Mountain Flying CheckMate™ covers both the rules and common sense of flying that are critical when in this aspect of flight. Available in 3 sizes.
Standard (6.5"x9").....P/N 13-02713.....$14.95
Compact (5"x7").....P/N 13-02714.....$13.95
Pocket (6.75"x3.25").....P/N 13-02716.....$8.95

PS

PROPILOT CHECKLISTS

Step up to professional quality with ProPilot Checklist! These handsome booklets are fully laminated and wire-bound for durability and long life, and are perfect for VFR and IFR pilots of all skill levels. All Preflight, Normal, and Emergency procedures are included. IFR checklist items are integrated into phase of flight, and IFR Approach and Departure Briefing sections are also provided. Flight planning is simplified by the inclusion of aircraft-specific performance data (V-speeds, takeoff distance, climb performance, cruise power settings, true airspeed, fuel burn, and landing distance), as well as weight and balance graphs. No more digging through a bulky POH for critical performance numbers! Additionally, a wealth of other useful information is included, such as VFR communications and weather requirements, METAR & TAF codes, IFR Holding Procedures, illustrated Airport Signs & Markings, Light Gun Signals, and Intercept Procedures. Conveniently sized at 6" wide by 9" high, ProPilot Checklist fits easily on your kneeboard. It's truly "The Last Checklist You'll Need!"™

Description	Part No.	Price
ProPilot Checklist Cessna 150M	13-06103	$29.95
ProPilot Checklist Cessna 152	11-05187	$29.95
ProPilot Checklist Cessna 172P	11-05188	$29.95
ProPilot Checklist Cessna 172R	11-05189	$29.95
ProPilot Checklist Cessna 172RG	11-05192	$29.95
ProPilot Checklist Cessna 172S/SP	11-05190	$29.95
ProPilot Checklist Cessna 172S/SP NAV	11-05191	$29.95
ProPilot Checklist Cessna 172M	13-05121	$29.95
ProPilot Checklist Cessna 182R	13-05122	$29.95
ProPilot Checklist Cessna 182S	13-05123	$29.95
ProPilot Checklist Cessna 182T	13-05124	$29.95
ProPilot Checklist Cessna 182T NAV III	11-05193	$29.95
ProPilot Checklist Cessna R182RG	13-05125	$29.95
ProPilot Checklist Cessna TR182RG	13-05126	$29.95
ProPilot Checklist Cessna Turbo T182	11-05194	$29.95
ProPilot Checklist Cessna 172N	13-04940	$29.95
ProPilot Checklist Cessna 206 NAV III	13-04941	$29.95
ProPilot Checklist Cessna Turbo T206H	13-04942	$29.95
ProPilot Checklist Cessna Turbo T206H NAV III	13-04943	$29.95
PropPilot Checklist Cessna A36-927 up	13-05127	$29.95
ProPilot Checklist Diamond DA20-C1	11-05195	$30.99
ProPilot Checklist Diamond DA40-180	11-05196	$29.95
ProPilot Checklist Piper PA28-161	13-04792	$29.95
ProPilot Checklist Piper PA28-181	11-05197	$29.95
ProPilot Checklist Piper PA28R-201	13-04794	$29.95
ProPilot Checklist Piper PA28-161 Warrior II	13-04944	$29.95
ProPilot Checklist Piper PA28R-201 Arrow	13-04945	$29.95
ProPilot Checklist Piper PA34-200T Seneca II	13-04946	$29.95

THE PRECIFLIGHT CHECKLIST

More than just a checklist, PRECIFLIGHT® will actually help pilot along all phases of flight: from preparation to tie-down and through emergencies. It is a brightly colored 18 pages booklet at is logically divided to minimize page flipping. Once used to it, it is a natural as good landings.

It regroups important information such as light gun signals, VFR minimums, weather symbols and all that with easy to interpret drawings. Even better, it has features that pilots have to look for in other publications and equipment like a built-in 1/500 000 ruler, frequently used aviation phone numbers and Internet sites and more.

PRECIFLIGHT® was also designed for convenience: it will fit in your shirt pocket or clip on the aircraft yoke where it will be available to use with one hand. Made of a sturdy waterproof paper, it will last a lifetime. It is designed to conform to FAA and Transport Canada regulations by a team of flight instructors and airline pilots

Description	PN	Price
Cessna 150/152	13-04979	$28.50
Cessna 172	13-04980	$28.50
Piper PA 28-160	13-04981	$28.50
Piper PA 28-180	13-04982	$28.50
Universal Model	13-04983	$28.50

QREF CHECKLISTS

Qref Books - Topics Covered: Preflight, Takeoff/Cruise, Landing, Comprehensive Abnormals and Emergencies, V-speed list, cruise performance chart.

Qref Cards - Topics Covered: Preflight, Takeoff/Cruise, Landing, Abnormals and Emergencies, V-speed list.

Description	Part No.	Price
Cessna 150 Qref 0	13-15560	$19.95
Cessna 152 Qref Book	13-15561	$19.95
Cessna 172 Universal Qref Book	13-15562	$24.95
Cessna 172RG Qref Book	13-15567	$24.95
Cessna 172S G1000 Qref Book	13-15569	$24.95
Cessna 182R Qref Book	13-15571	$24.95
Cessna R182 Skylane RG Qref Book	13-15572	$24.95
Cessna Turbo 182T Qref Book	13-15575	$29.95
Cessna 150 Qref Card	13-15625	$12.95
Cessna 172 Universal Qref Card	13-15627	$12.95
Cessna R182 Skylane RG Qref Card	13-15635	$12.95
Cessna Turbo 182T Qref Card	13-15640	$12.95
Cessna Turbo 182T G1000 Qref Card	13-15641	$12.95
Cessna Turbo 206H Qref Card	13-15642	$12.95
Cessna Turbo 210M Centurion Qref Card	13-15643	$12.95
Cirrus SR20 Analog Qref Book	13-15578	$29.95
Cirrus SR20 G1-G2 Qref Book	13-15579	$29.95
Cirrus SR22 G3 Qref Book	13-15583	$29.95
Cirrus SR22 Perspective Qref Book	13-15584	$29.95
Cirrus SR22 G3 Turbo Qref Book	13-15585	$29.95
Cirrus SR20 Perspective Qref Card	13-15646	$12.95
Cirrus SR22 G3 Turbo Qref Card	13-15650	$12.95
Mooney M20C Mark 21	13-15589	$19.95
Piper Archer II PA-28-181 Qref Book	13-15590	$19.95
Piper Arrow 180 PA-28R-180 Qref Book	13-15592	$24.95
Piper Arrow II PA-28R-200 Qref Book	13-15593	$24.95
Piper Arrow III PA-28R-201 Qref Book	13-15594	$24.95
Piper Cherokee 140 PA-28-140 Qref Book	13-15598	$24.95
Piper Cherokee 150 PA-28-150 Qref Book	13-15599	$24.95
Piper Cherokee 160 PA-28-160 Qref Book	13-15600	$24.95
Piper Saratoga SP PA-32R-301 Qref Book	13-15603	$24.95
Piper Warrior 151 PA-28-151 Qref Book	13-15606	$19.95
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Piper Archer II PA-28-181 Qref Card	13-15654	$12.95
Piper Arrow III Turbo PA-28R-201T Qref Card	13-15659	$12.95
Piper Cherokee 180 PA-28-180 Qref Card	13-15663	$12.95
Piper Navajo PA-31-310 B C Qref Card	13-15665	$12.95
Piper Tomahawk PA-38-112 Qref Card	13-15667	$12.95
Beechcraft Bonanza J K M 35 QREF CARD	13-15622	$12.95
Beechcraft Bonanza N P 35 QREF CARD	13-15623	$12.95

SEE WWW.AIRCRAFTSPRUCE.COM FOR COMPLETE LISTING OF QREF CHECKLISTS.

E.S.P. CHECKMATE™

E.S.P. CheckMate™ is a 1st for Aviation, and the only product of its kind available. Our new "Emergency Substitute Pilot "™ could save the lives of you and your passengers by providing the most basic and simplest of terms and procedures to the NON-PILOT, in the unfortunate event the real pilot becomes incapacitated. E.S.P. CheckMate™ assists the NON-PILOT in controlling the aircraft, reaching help on the radio, and if necessary, landing the aircraft. The graphical format makes it easy and comfortable to follow. E.S.P. CheckMate™ can easily be the difference in the outcome of this most serious type of emergency. For safety and readability, we are publishing only in 7.5" x 10" size. P/N 13-01834 ..... $14.95

PS

PLOTTERS

FLIGHT COMPUTERS

E6B METAL FLIGHT COMPUTER - The best slide-rule-style flight computer on the market, with solid aluminum construction and easy-to-read lettering. ASA's E6-B features a wind component grid and comprehensive cross-wind correction chart, and on the other side the slide computes time, speed, distance, altitude, true airspeed, and density altitude problems as well as conversions. Nautical and statute scales are included.

P/N 13-00813 ..... $24.95

E6B PAPER FLIGHT COMPUTER - Made from solid, heavyweight fiberboard, an economical version of the aluminum model described above including all its problem-solving features. P/N 13-02298 ..... $9.95

MICRO E6-B - This pocket-sized, brushed aluminum E6-B is a full function aviation computer. Popular among military pilots, it features a high-speed and low-speed wind correction slide, high-speed compressibility table, and instruction manual. Micro E6-B performs all the standard manual flight computer functions, and it conveniently fits in a shirt pocket or glove box.

P/N 13-02299 ..... $26.95

E6-B HIGH SPEED SLIDE - A companion product, this slide picks up where the traditional metal flight computer leaves off (ASA-E6B), providing calculations for the high-speed realm of flight (in the range of 220-700 knots or miles per hour). Pilots simply replace their current slide with this one, which then continues to use the circular computer from traditional E6-Bs. The slide also includes compressibility correction chart, ICAO Standard Atmosphere reference table, worldwide time conversion table, speed limits for the United States, and most frequently-used weight & balance formulas. All of the pertinent formulas & information required for high-altitude, high-speed operations. Meets both FAR & JAR (international) requirements.

P/N 13-02301 ..... $11.75

PROFLIGHT FIXED AZIMUTH PLOTTER

The ProFlight Fixed Azimuth Plotter is: • Manufactured & Packaged in the U.S.A. • Made from Premium Clear 8010 Polycarbonate • More Flexible & Warp Resistant than Acrylic or PVC • Printed using Ultra Violet Resistant Ink • Laminated for Lifetime Scratch Protection • Clearly Distinguishable White, Sectional/Terminal Side & on Reverse, a Blue WAC Scale

ProFlight PF-AP-1 Plotter - Your PF-AP-1 is a premium Fixed Azimuth Plotter designed for measuring distances and courses on VFR navigational Sectional, Terminal & World Aeronautical Charts. This plotter has been designed to exacting standards and slight variations with chart scales may exist as a result of the instability of paper charts in certain temperature and humidity conditions. P/N 13-11676 ..... $8.75

SQUARE AVIATION PLOTTER

Constructed of durable Lexan®, this plotter won't melt, warp or break in extreme temperatures. Its convenient 5-1/8" square size and ease of use make this plotter a pilot favorite for simple, accurate flight planning. Uses a 1:500,000 scale and includes 5 NM and 10 NM radius rings for quick and easy measurement. The 2 NM grid makes alignment with parallels simple. Plus, it's guaranteed for life! P/N 13-08056 ..... $4.80

ALUMINUM BOEING RULER

What could be a more measured way to keep things straight on your desk? A classy aluminum ruler boasting the Boeing name - in the subtle shape of an airfoil, of course! An integrated rubber strip makes for nonslip tracing, cutting, and easy pick-up. Inches on one side, metric on the other. P/N 13-12048 ..... $5.95

PLOTTERS

Durable Lexan® resin won't melt, warp or break in extreme temperatures - guaranteed! Each plotter features 8 scales to meet the needs of all VFR aeronautical charts - nautical on one side, statute on the flip. Nautical-Statute conversion scale also included. Made in USA.

ULTIMATE ROTATING PLOTTER - 13-1/4" long. Rotating azimuth eases flight planning with direct readout of course. Made in USA.

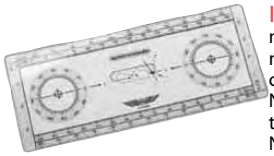
P/N 13-02302 ..... $15.50

ULTIMATE FIXED PLOTTER - 13-1/4" long. Quick scale reference is provided for both statute and nautical miles. Made in USA.

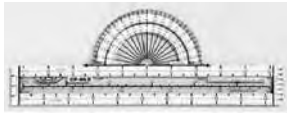
P/N 13-02424 ..... $13.65

ULTIMATE MICRO PLOTTER - 8" long. Convenient for flight bag, shirt pocket, or airplane storage. Made in USA.

P/N 13-02303 ..... $7.95



INSTRUMENT PLOTTER - ASA's instrument plotter features: 12 scales to accommodate both NOS & Jepp instrument charts, including a conversion scale for Nautical and Statute miles; holding patterns depicted for both Standard and Nonstandard entries; compass roses allowing quick course & bearing information; and professional layout enabling easy reading during en route spot checks. P/N 13-02306 ..... $11.85



FIXED PLOTTER - Constructed of sturdy clear plastic with easy-to-read numbers and scales. It includes WAC, Sectional, and Terminal Area scales, and is checked and approved by the Weights and Measures Department. Quick scale reference is provided for both statute and nautical miles.

P/N 13-02304 ..... $7.95

ROTATING PLOTTER - Made from the same material and having the same features as the Fixed Plotter, but with the addition of a non-slip rotating azimuth to ease flight planning. P/N 13-02307 ..... $10.95

SRP5 NAVIGATIONAL KIT - Kit contains: • SAGA SR Aeronautical navigational ruler graduated in marine and statute miles to scale 1:500 000, 1:250 000 and 1:100 000 • SAGA SP Aeronautical navigation angle protractor • Two (2) Steadtler permanent markers • One (1) Steadtler permanent retractable marker.

P/N 13-09556 ..... $18.95

PLOT-RITE ALL METAL NAVIGATION PLOTTER

The new Plot-Rite is an all metal navigational plotter for use with VFR sectional, terminal and WAC charts. The front has both sectional and terminal area scales and the rear has WAC and sectional scales. The top edge has the familiar 180° compass rose and the open center enables you to find longitude lines easily. Outside edges have full east and west routes, inside edges have north and south. Plot-Rite is all metal and will never break, warp, crack, shrink or distort in any way if left in the sun. Measures 2.5" x 12". Plot-Rite (Nautical Scale)

P/N 13-30300 ..... $19.95

PEN AND TOUCH PAD STYLUS

A dual-purpose, twist action (black ink) ballpoint pen featuring a soft stylus end for use with touch-screen mobile devices such as iPads, tablets, smartphones, etc. Black barrel with chrome accents.

P/N 13-12066 ..... $3.65

PS

ASA PILOT SUPPLIES

APPROACH PLATE BINDER

Made of durable black vinyl with a reinforced spine, it has easy-to-open, 1-1/2" steel rings that accommodate the drill pattern of the approach plates. ASA wings tastefully silver-foiled on the front cover. Choose from either 4-ring NACO or 7-Ring design.

NACO ..... P/N 13-01066 ..... $12.75
7-Ring ..... P/N 13-02316 ..... $10.95

FLIP BINDER

Perfect for Instrument Pilots who carry a smaller number of approach charts. One-inch rings are attached to a sturdy poly backing, with a loose poly cover. Scoring on front and back covers allows you to flip charts completely around the rings and display the one you want on top. Compact, convenient, and practical. P/N 13-02321 ..... $11.85
Replacement Rings ..... P/N 13-12055 ..... $4.95

7 RING BINDER KIT

Contains 1 binder, 10 sheet protectors, 5 color side dividers and a sheet of area stickers.

7-Ring ..... P/N 13-02322 ..... $19.95

ASA DELUXE RING BINDER

The Deluxe 2" 7-Ring Binder is made of richly-grained simulated leather with edge stitching. It's bound for maximum durability and equipped with a ring system that will keep your approach plates securely organized and easily accessible. Convenient 8.5" x 9" size makes it easy to fit in almost any flight bag.

ASA Deluxe 1" 7-Ring Binder ..... P/N 13-05759 ..... $25.75
ASA Deluxe 2" 7-Ring Binder ..... P/N 13-05760 ..... $29.95

ASA 1 INCH 7 RING TRIP BINDER

The 7-Ring Trip Binder is made of durable poly. It's bound for maximum durability and equipped with a ring system that will keep your approach plates securely organized and easily accessible. The three rings are spaced to match the 7-hole approach plate drill pattern. Convenient 7" x 9" size makes it easy to fit in almost any flight bag. P/N 13-05825 ..... $12.50

SHEET PROTECTORS

Made of durable, translucent plastic to protect the most frequently used approach plates. Sold in packs of 10.

NACO Vinyl Pocket pk of 10 ..... P/N 13-02317 ..... $6.50
NACO Poly Folders pk of 10 ..... P/N 13-05820 ..... $4.85
7-Ring Vinyl Pocket pk of 10 ..... P/N 13-02318 ..... $5.95
7-Ring Poly Folders pk of 10..... P/N 13-05821 ..... $4.50

5 COLOR DIVIDERS

For quick reference of various sections of both types of approach plate charts, these five distinctly-colored dividers extend out beyond the side of the charts. Set of 5.

7-Ring ..... P/N 13-02323..... $3.95
4-Ring ..... P/N 13-05826..... $5.35

ASA 4 RING NOTEPAD

Compact, convenient writing pad that fits in your approach plate binder. 100 sheets per pad. Weight .80lbs

7-Ring ..... P/N 13-05823..... $4.85
4-Ring ..... P/N 13-05822..... $4.85

CHART WALLETS

These chart wallets organize, hold, carry, and display standard FAA charts conveniently. All styles feature black covers, silver wings logo, and clear vinyl organizer pockets so you can easily find the correct chart in a busy or turbulent cockpit environment.

Book-style Chart Wallet - 6 double-sided pockets holds up to 12 maps between the covers. P/N 13-02325 ..... $13.95
Large Book-style Chart Wallet - Pockets hold up to 22 charts between the covers. Riveted spine. P/N 13-00412 ..... $22.50

FLIGHT PLANNER SHEETS

Cross-country planning sheets contain a flight plan section, weight & balance calculation chart, special equipment suffix chart, fuel management, space for radio frequencies, & more. Sold in pads of 48. P/N 13-02331 ..... $3.75

STUDENT FLIGHT RECORDS

ASA Flight Record Folders provide areas to record pertinent student information, stage checks passed, lesson content, lesson performance, flight hours, instructor notes & endorsements, solo endorsements or aircraft checkout records, and are current to both Part 61 & Part 141 program requirements. Sturdy & durable, these flight records are available separately, as part of ASA's pre-packaged training kits, or as part of an ASA PACK - Personalized Aviation Custom Kit.

SFR Private ..... P/N 13-01548 ..... $2.35
SFR Commercial ..... P/N 13-01549 ..... $2.75
SFR Instrument ..... P/N 13-01551 ..... $2.75
SFR Helicopter ..... P/N 13-01547 ..... $2.35

CERTIFICATES AVIATION ACHIEVEMENT AWARDS

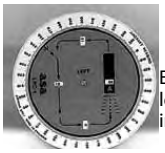
Authentic, full-color certificates are perfect for framing yet sturdy enough to slip into the student's flight record as a pleasant surprise to be discovered on their next visit to the airport. Mark progress with style, while further motivating students. 9"x12". Sold in packs of 10.

Solo Flight Certificate ..... P/N 13-02326 ..... $13.50
Private Ground School Certif. ..... P/N 13-02327 ..... $16.95
Helicopter Solo Flight Certif. ..... P/N 13-02329 ..... $8.95

HOLDING PATTERN VISUALIZER

This useful tool shows a pilot which entry is appropriate given the assigned holding radial, making it a superb learning tool.

P/N 13-06940 ..... $11.95



LANDING PATTERN COMPUTER

Easily helps determine appropriate headings for each leg when landing or departing the airport - great teaching aid! P/N 13-06935 ..... $14.50

FLIGHT PLAN AND CLEARANCE NOTEPAD

Posting pad for obtaining IFR Clearances by pilots. Provides in-flight writing for Aircraft ID, Departure Point, Route Of Flight, Destination, and more. 6" H x 4" W.

P/N 17-00328 ..... $1.75

YOKE CLIP

ASA's new yoke clip holds all the necessary flight paperwork right where pilots need it, leaving their hands free to fly. Simple to install, the black plastic, I-Beam construction is strong enough to serve as a pilot's third hand. The clip is higher than other yoke clips, holding sectionals, approach plates, flight logs, checklists, flight computers, and pens in easy view. The unique, over-centering cam easily adjusts to fit all general aviation aircraft yokes without modification.

P/N 13-01043 ..... $14.50

ASA PILOT HAT

Newly designed pilot cap featuring comfort headband and classic wings logo. Stylish baseball cap. Black with neatly embroidered white ASA wings. Adjustable headband for maximum comfort. No button to interfere with headset band. Long bill for sun protection. Perfect for cross-country flying, lounging with friends or on the tarmac hangar flying. Wear it proudly! P/N 13-12964..... $11.50

PS

FLIGHT COMPUTERS - LOG SHEETS - PLACARDS

AERO PRODUCTS RESEARCH CR COMPUTERS

CR computers are very popular with pleasure and professional pilots. They solve T/8/D and wind triangle problems for light aircraft as well as those which approach Mach 2 speeds. Corrections for errors of compressibility and temperature rise are computed with ease. The wind solution is displayed graphically using the small back-side discs. Each computer comes with fully illustrated manual.

CR-3 - 3-3/4" dia. shirt-pocket size (same as Jepp CR-5); vinyl
P/N 13-03499 ..... $22.75

CR-4 - 4-1/4" dia. (same as Jepp CR-2); vinyl. Standard model used by the military. P/N 13-03501 ..... $23.75

CR-6 - 6" dia. Used by navigators for maximum readability (Same as Jepp CR-3); vinyl. P/N 13-03502 ..... $24.75

AERO PRODUCTS RESEARCH FLIGHT DESK

Folded size 8" x 9" Extends to 16" x 9" Anodized aluminum. Versatile space-saver lap desk locks in open position; folds in half for drop-in storage in your flight case. Heavy-duty clips hold charts and flight plans. Important VFR and IFR information always visible when open. Foam strips on back keep lap desk from slipping. ..... P/N13-03517 ..... $23.95

AERO PRODUCTS RESEARCH TIME/ SPEED/ DISTANCE COMPUTER

Time/Speed/Distance computers. "How-to-use" instructions printed right on the unit. Text printed in straight, easy-to-read lines; desired scales and windows located at a glance. Perfectly calibrated 2-color dials eliminate parallax errors. Fully illustrated instruction manual with each model. APR-303 3-3/4" dia. T/S/D computer with traffic pattern orientator; anodized alum. P/N 13-01133 ..... $14.85

THE ATIS WHEEL

The Atis Wheel™ is a mechanical device designed to help the airplane pilot in recording all ATIS information while presenting the data as a graphic depiction. The Atis Wheel™ is presented on a 5.5 "x 8.5" rectangular durable format with seven individual 1.5" wheels positioned about the perimeter of the device along with two, 3" concentric wheels positioned in the center. Each wheel's topic coincides with the sequential information reported in the airport terminal broadcast. The ATIS Wheel is 5-1/2" x 8-1/2" and fits nicely into a Jeppesen binder. This is a large format preferred by flight instructors and students. Atis Wheel Pro - Like the ATIS Wheel, but smaller (approximately 3.5" x 5.5") for the professional pilot to conveniently fit in a shirt pocket for quick and easy reference. Note, the ATIS Wheel Pro does not contain the "Wind Velocity", Visibilty" or RWY/ Approach" wheels like its big brother

ATIS Wheel Pro - Like the ATIS Wheel, but smaller (approximately 3.5" x 5.5") for the professional pilot to conveniently fit in a shirt pocket for quick and easy reference. Note, the ATIS Wheel Pro does not contain the "Wind Velocity", Visibilty" or RWY/Approach" wheels like its big brother

ATIS wheel ..... P/N 13-06643 ..... $4.85
ATIS wheel Pro ..... P/N 13-05003 ..... $5.40

EZ ATIS REMINDER PILOT TOOL

The EZ ATIS Reminder makes it easy to communicate the ATIS identifier. No more fumbling through papers for the ATIS identifier - or worse yet, having to recall the prefix from memory! The 1-5/8" diameter knob with 1/2" pointer has a peel and stick adhesive tape on the back that can be easily mounted on your instrument panel, knee board, or anywhere you need a quick ATIS recall. P/N 13-04920 ..... $12.95

TAF METAR DECODER

An unbelievable tool for translating terminal area forecasts and aviation routine weather reports to English. Also a great flight school tool.
P/N 14-00708 ..... $18.75

HIGHLIGHTER TAPE

A removable alternative to highlighter pens for all kinds of valuable permanent documents. Sticks securely, yet removes easily without damage to most surfaces. Vivid colors can't be missed, yet transparent feature allows you to see what is underneath. Economical - use as much or as little as you want.

Pink ..... P/N 14-00889 ..... $4.65
Yellow ..... P/N 14-01860 ..... $3.85
Green ..... P/N 14-01861 ..... $4.65
Orange ..... P/N 14-01862 ..... $4.65

AERO PRODUCTS RESEARCH T/S/D COMPUTER KEYCHAIN

1-1/2" diameter. Identical to the real thing, this traditional usable Time/Speed/Distance keychain has a beautiful compass star with flight plan on the back side.

The computer keychain is calibrated meaning the ability to relate the key chain to the functions of the E6-B type Time/Speed/Distance computers.
P/N 13-03505 ..... $7.95

AERO PRODUCTS RESEARCH CR COMPUTERS

Simplify VFR or IFR navigation with these handy logs which provide for listing of intersections, radials, frequencies, clearances and complete flight plan.

EFL-100 Pad of 5-1/2" x 8-1/2" sheets; VFR Flight Logs
P/N 13-03526 ..... $3.95
EFL-200 Pad of 5-1/2" x 8-1/2" sheets;IFR Flight Logs
P/N 13-03527 ..... $3.95

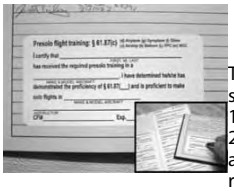
AERO PRODUCTS RESEARCH PLACARDS

Now you can customize your cockpit with APR's easy-to-apply placards. Just cut out and press these stick-ons into place for that "factory-fresh" cockpit look. For all single and multi-engine aircraft systems, seaplanes, and gliders. Includes most-used legends (on, off, open, close, etc.), common amperage, voltage values, arrows, numbers and blanks. 8-1/2" x 10-1/2"; aircraft panel placard set; over 250 aluminum placards.

APR Instrument Panel Placard Set ..... P/N 13-03522 ..... $11.95

EXPERIMENTAL AIRCRAFT CERTIFICATION KIT

A new amateur-built aircraft certification kit created by the Experimental Aircraft Association (EAA) gives builders a simplified way to complete the required FAA paperwork for their new projects. The Amateur-Built Aircraft Certification Kit includes everything you need to register and certify a new experimental amateur-built aircraft in the United States. The 15-page, step-by-step guide walks you through the entire process from getting an N-number to the aircraft inspection, and provides samples to help complete each required form. The kit includes all FAA forms, Experimental sticker (in black), data plate, and a convenient placard decal sheet. P/N 13-04244 ..... $19.95



SPORT PILOT PRE-PRINTED LOGBOOK ENDORSEMENTS

The Instructors Endorsement Pack contains 14 sheets of labels. Each sheet of labels contains 10 copies of a specific endorsement. Each 2" x 4" endorsement label is identified by title and FAR number, has the exact wording as required by the regulations, and has data-prompted blanks for the students' name, your name, CFI cert.#, Biennial Flight Reivew Certification 61.56(a).

Description	Part No.	Price
INSTRUCTOR ENDORSMENT PK ENPAK	09-01310	$18.75
PRE-SOLO AERONATICAL KNL 6187B	09-01311	$1.95
PRE-SOLO FLIGHT TRAINING 6187C	09-01312	$1.95
PRE-SOLO TRNG & 90 DAY RENL	09-01313	$1.95
SOLO AT ANOTHER AIRPORT 6193B	09-01314	$1.95
1ST SOLO X-C 61.93(C)(1) 6193C	09-01315	$1.95
SOLO X-C 61.93 (C)(2) 6193C2	09-01316	$1.95
REPEATED SOLO X-C <=50NM6193B2	09-01317	$1.95
SOLO IN CLASS B,C &D 6194A	09-01318	$1.95
SOLO TO/FROM CLASS B,C OR D	09-01319	$1.95
TAKING KNOWLEDGE TEST 6135A	09-01320	$1.95
PROFICIENCY CHECK 61321	09-01321	$1.95
PASSING FLIGHT TEST 61309	09-01322	$1.95
TAKING SPORT PILOT PRACT 61313	09-01323	$1.95

PS

CX-2 PATHFINDER ELECTRONIC FLIGHT COMPUTER

ASA's new electronic flight computer is a price/performance breakthrough, resulting from advances in display and microcomputer technologies. Aviators can calculate true airspeed, ground speed, mach number, altitudes, fuel headings and courses, time/speed/distance, winds, headwind/crosswind components, gliding info and weight & balance.

P/N 13-01040.....$68.95

JEPPESEN CIRCULAR COMPUTERS

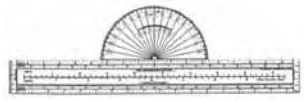
Dial up the answers to your navigation problems, including polar grid navigation, pressure pattern flying, crosswind components, and wind solutions. These computers automatically compensate for the temperature and compressibility factors found at high speeds. Tough laminated plastic, with carrying case.

CR-3 (6" diam.) ..... P/N 8434 .....$24.85

JEPPESEN CR-2 CIRCULAR COMPUTER 4-1/4

Our CR Circular Computers offer solid construction and proven performance. Whether you're solving wind triangles, polar grid navigation or pressure pattern flying, CR Computers prove their value and versatility every day. Useful in high and low speed problems. They automatically compensate for temperature rise and compressibility factors. Instruction manual and vinyl carrying case are included with each. (4 1/4 inch diameter)..... P/N 13-07659 .....$25.80

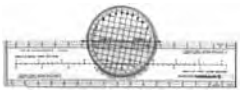
PN-1 NAVIGATION PLOTTER



Allows easy identification of WAC and Sectional chart scales. Calibrated in statute & nautical miles.(Size: 12.25" x 4")

P/N 13-21724..... $12.00

PJ-1 ROTATING AZIMUTH



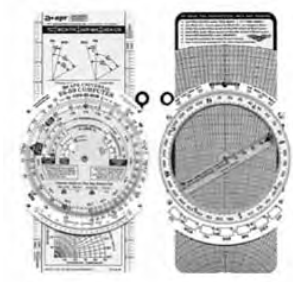
Measure the true course or to determine the magnetic course. Includes scales for sectional terminal area & WAC charts in statute & nautical miles. Size: 3.25 x 13"; 3-3/8 " Dia.

P/N 13-21726 ..... $12.65

BLIND SPOT'S ORIGINAL PILOT'S RULER

The Blind Spot's Original Pilot's Ruler has been designed to offer pilots maximum support, in the simplest way. The concept enables the pilot to solve VFR navigation problems and provide useful information, both at a glance, in only a few seconds and with only one instrument! The use of the ruler is extremely simple & fast. The pilot can concentrate more on flying, less on calculating, thus fly more relaxed and safer. Blind Spot's Original Pilot's Ruler (for USA airspace) is a two-sided pilot's ruler designed for flight preparation and use in flight. Size: 1.8" x 12". P/N 13-11733 ..... $19.95

AERO PRODUCTS RESEARCH E6-B UNIVERSAL FLIGHT COMPUTERS



The very latest in air navigation computers include not only T/S/D and Dead Reckoning calculations, they now incorporate "Universal" features for world-wide use.

E6-B2U - Deluxe, top-of-the-line quality, 5" x 9-5/8", all aluminum construction. Includes: • "Universal conversions: feet to meters, pounds to kilograms, liters to US gallons, US gallons to IMP. gallons or fuel weight or oil weight. • Patented micro-set (aligns scales to perfect accuracy).• Flush dials to eliminate parallax; answers are read with absolute accuracy. • Scales with contrasting colors for easy computation. • "Universal" conversions color-coded for quick and easy use. • Heavy gage anodized aluminum for added rigidity and non-glare surface. • 2-color fully illustrated instruction manual plus supplement on Dead Reckoning, Wind Effect Theory and Calculations..... P/N 13-03492 ..... $27.85

E6-B4 - Pocket-size deluxe, all anodized aluminum; high/low wind slide. P/N 13-03960 ..... $31.90

E6-B8 - Budget student computer, plastic body, plasticized wind slide..... P/N 13-03495 ..... $14.50

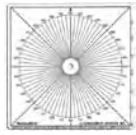
E6-B8P - Budget student computer, plastic body, plasticized wind slide; includes an 8"Navigation Plotter..... P/N 13-03496 ..... $16.50

PILOT'S WIND VISUALIZER

The Wind Visualizer takes the guesswork out of crosswind takeoffs and landings. Simply put the Wind pointer on the wind direction, the Landing Pointer on the Runway heading, and "see" the wind in relation to your direction of flight. Then read your crosswind component from the table on the back. Simple, and fast to use. Durable non-warping 3.75" diameter plastic. Includes full instructions.

P/N 13-19520 ..... $13.95

RADIALMATE COMPASS ROSE



RadialMate™, a 3.5" clear 20 mil plastic compass rose allows you to instantly read a desired course by placing the product over any sectional, chart, or graphic. There are no reciprocals to calculate. RadialMate™ comes with a hole in the middle, allowing additional use as a string compass. It is conveniently sized to fit in your pocket. RadialMate™ also contains Safe Flight's vertical scale which measures mileage for WAC, SEC, TAC, NOS, JEPP and ELA charts eliminating the need for that ruler you can never find. P/N 13-08799 ..... $4.50

JEPPESEN STUDENT CSG COMPUTERS

This computer made of composite materials works just like an aluminum computer with all the same functions and features, but at a lower cost. Ideal for new students or as an extra to keep in your desk at home. Printed numbers are sharp, clear, and easy to read. Like all Jeppesen products, the quality is superior.

Plastic ..... P/N 3866 .....$14.49
Metal..... P/N 3867 .....$30.95

ASA E6B METAL FLIGHT COMPUTER

The best slide-rule-style flight computer on the market, with solid aluminum construction and easy-to-read lettering. ASA's E6-B features a wind component grid and comprehensive crosswind correction chart, and on the other side the slide computes time, speed, distance, altitude, true airspeed, and density altitude problems as well as conversions. Nautical and statute scales are included.

Standard .....P/N 13-00813 ..... $24.95
Mini.....P/N 13-02299 ..... $26.95

ASA COLOR E6-B COMPUTER

ASA's color E6-B is enhanced with color for quick identification of key elements and easier readability. The new color E6-B is based on ASA's most popular model: slide-rule-style flight computer, the ASA-E6B. It's identical in size to the venerable favorite, made with the same solid aluminum construction and featuring all the functionality pilots have relied on for decades. On the circular side, black is used for the rate arrow and units to be calculated, red is used for weight and volume and blue is used for distance, time and temperature scales. On the wind side, colors are used to identify wind variation: blue identifies west (or right wind correction angle) and red identifies east (or left wind correction angle). Measures 9-3/4" x 5". In The Box: Vinyl case, and Instruction booklet. P/N 13-10288 ..... $29.95

VOR FLASH CARDS

Designed to show any pilot how to look at a VOR receiver and read it at a glance. There's no time in the cockpit to spend slowly analyzing the CDI needle and To/From indicator! VOR-At-A-Glance flash cards will teach you: • The difference between VOR courses and VOR radials • What the VOR does not show you • The best way to think about the course deviation indicator • Inbound vs. outbound course indications • How to instantly know your position relative to the VOR • Tricks for reading interception courses right off the VOR • Pilots need to be able to look at a VOR and read the information off immediately. It's just like when you first learned how to read. There is a big difference between the ability to sound the words out and the ability to look at a work and just read it. Pilots need to be able to "read" the VOR!

P/N 13-05773..... $36.75

CAPTAIN BARRY SCHIFF X-COUNTRY PLANNING LOG

Covers all necessary flight planning "from the ground up" Capt. Barry Schiff comprehensive pre-flight & en route complete "cross-country planning program", assures safe, error free, cross-country flight planning before and during all flights. Guides you trough all stages in your pre-flight planning, organizes the required estimates to determine ground speed, time en rout em and arrival. Records distances to check points, arrival times, and the related radio frequencies needed.

P/N 13-12108.....$5.95

PS

VOR TRAINING AID

Learn and practice the principals of VOR and NDB navigation, with ease, prior to flight. Instructors can effectively teach and discus navigation with clear, realistic, high quality visual aids.

P/N 13-16037 ..... $18.95

ADF TRAINING AID

The ADF Training Aid features realistic rotating ADF bearing indicator needle and a heading indicator dial. List, depict and erase NDB intercept instructions and holding clearances in the practice area.

P/N 13-16038 ..... $15.95

APR PLOTTERS

Scales on white background for easy readability set on see-through "clear vision" vinyl. Statute and nautical scales are parallel, making conversion easy. One side scaled for WAC charts, one for Sectional charts. "How-to-Use" instructions printed on plotter. Includes illustrated practice problems.

Description	Part No.	Price
13" Plotter NP-13 S tandard for WAC and Sectional Charts	13-19913	$9.95
13" Plotter WSNP-13 WAC and Sectional Charts (Lexan) Lifetime Guarantee	13-03509	$12.50
13" Plotter NPR-13 Rotatable Azimuth WAC and Sectional Charts	13-03511	$10.90
13" Plotter WSNPR-13 Lifetime Guarantee Rotatable AzimuthWAC and Sectional Charts (Lexan)	13-03512	$15.00
Universal IFR Plotter UIP-V (Same as Jeppesen PV-5) Jepp/NOS Charts Holding Pattern Entry (Vinyl)	13-03514	$8.50
Description	Part No.	Price
Universal IFR Plotter RFC-1 Jepp/NOS Holding Pattern 3-1/2" x 8"	13-03513	$9.00
13" Plotter FAA-170 Military WAC and Sectional Charts	13-03516	$9.95
INTERNATIONAL NAVIGATION PLOTTERS		
Description	Part No.	Price
Plotter/Protractor CPP-5 Douglas International Combination Plotter/Protractor	13-03506	$5.95
13" ICAO Plotter IP-13 Fixed Azimuth, Nautical/Kilometer Scales	13-03507	$12.25

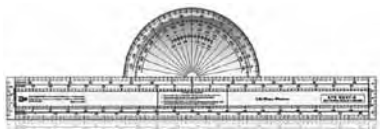
APR FCL-12 & 24 FLIGHT CHECKLIST HOLDER

Used by private, corporate, and military pilots. Adjustable lighting and viewing angle, color band isolates each item being checked. Mounts for right or left hand use. 84" parchment scroll lets you customize your specific checklists for review in flight. Designed to U.S. Military Pilots specification. 5" x 4" x 1-1/2" NSN 1680-00-489-1313

APR FCL-12 Flight Checklist Holder.....P/N 13-06714 .....$115.75

PS

APR POCKET NAVIGATION PLOTTER - 8"



Now you can own the easiest and most accurate plotter available for use on all World Aeronautical & Sectional Charts.

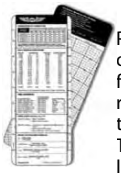
WSNP-8 Pocket Navigation Plotter is the best in-flight plotter. It has four protractor scales and fourteen nautical, statute, and terminal area scales for Sectional, WAC, and Terminal Charts.

P/N 13-15121 ..... $14.85

PLOTTERS AND SLIDE COMPUTERS

These are specially-designed for easy use. The APR plotter has parallel statute and nautical scales, with one side scales for WAC charts and the other for sectional. Made of clean white heat-resistant hi-flex vinyl. Operating instructions are included. The slide computer is printed with speed ring lines representing values of one speed unit. Includes formula boxes added to the plate below the azimuth ring.

E6-B4 Aluminum..... P/N 13-03960 ..... $31.90



E6-B HIGH SPEED SLIDE

Picks up where the ASA-E6B metal flight computer leaves off, providing calculations for the high-speed realm of flight (in the range of 220-700 knots or mph). Pilots simply replace their current slide with this one, which then continues to use the circular computer from traditional E6-Bs. The slide also includes a compressibility correction chart, ICAO Standard Atmosphere reference table, a worldwide time conversion table, speed limits for the U.S., and the most frequently used weight and balance formulas; all of the pertinent formulas and information required for high-altitude, high-speed operations. Comes with easy-to-follow instructions.

E6-B High Speed Slide ..... P/N 13-02301 ..... $11.75

WHIZ WHEEL HOLDING PATTERN COMPUTER

For instrument pilots, entering a holding pattern can sometimes be a challenge. The Instrument Pilots Whiz Wheel can alleviate this challenge by presenting pilots with pictorial views of both right- and left-hand holding patterns, and entry arcs for direct, parallel, and teardrop holding pattern entries. Made of sturdy plastic, the Whiz Wheel works for VOR, NDB (non-directional beacon), and localized facilities. Intercept angles are at the pilot's fingertips, and procedure turn information can readily be obtained by following the "prompts" on the device and aligning these prompts with the Whiz Wheel's compass marking. Intersection holding patterns can be pictured and coordinated using both VOR radials and cardinal headings. P/N 13-30210..... $18.95

DIRECTIONAL GYRO HOLDING PATTERN PROMPTER DECAL

Install this decal upon the face of your directional gyro and instantly determine entry procedures for both left-hand and right-hand holding patterns. Also includes prompts for headings used in teardrop procedures and procedure turns. Totally transparent. Includes instructional text. P/N 13-30215..... $3.45

PILOT'S "TIME MACHINE"

Convert the 12 hour clock to the twenty-four hour clock and to Universal Coordinated Time (UTC). Time zone chart is included. Fuel duration calculation can be determined with this new instrument. Use it to file accurate flight plans and to give position reports.

P/N 13-30225..... $13.35

RUNWAY SELECTOR

Runway Selector is a simple tool pilots use to select the best runway based on prevaling winds. Runway Selector is a quick easy visual reference for all pilots! As an added bonus, the tool can also be used to confirm your take-off runway as well!

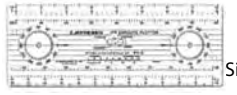
Together, all the features of Runway Selector serve to provide multiple quick references for any pilot. The tool is also an excellent tool for instructors to use in teaching a new student pilot in a myriad of situations and teaching situations!

P/N 13-14811..... $23.95

TRAFFIC PATTERN ORIENTER & SPEED COMPUTER

Graphically displays the headings required for standard or non-standard traffic patterns. Time, speed , distance computations, fuel consumption, true airspeed, mach and true altitude conversions.

P/N 13-01133..... $14.85



JEPPESEN PV-5 IFR ENROUTE PLOTTER

Size 3-3/16" x 8-1/2"

P/N 13-21718.....$9.70

AERO PRODUCTS RESEARCH PLOTTERS

APR PLOTTERS

PROTRACTOR PLOTTER PCP-202 T/S/D - APR has designed the first combination T/S/D pocket computer combined with rotatable plotter cursors. Align the airplane cursor along any appropriate meridian. PVC plastic discs, 3-3/4" dia. Plastic cursor 4-3/4"
P/N 13-06681..... $13.75

TRAFFIC PATTERN ORIENTATOR TPP-203 - The TTP-203 Traffic Pattern Orientator graphically displays all headings for left (standard) and right (non-standard) traffic patterns when the runway heading is aligned with the compass rose. Light signal "acknowledging" instructions are also shown. PVC Plastic discs, 3-3/4" dia. Cursor 4-1/4 P/N 13-06682..... $14.50

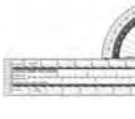
DENSITY ALTITUDE PERFORMANCE COMPUTER DAP-204 - Shows the aircraft's rate of climb and minimum - required takeoff distance. PVC plastic discs. 3-3/4" dia. Important: Always consult your pilot's operating handbook as their computer does not supplement or replace the manufacturer's performance data. Not applicable to turbocharged aircraft. P/N 13-06683..... $13.75

T/S/D PROTRACTOR PLOTTER PCA-302 - APR has designed the first combination T/S/D pocket computer combined with rotatable plotter cursor. Align the airplane cursor with the true or magnetic course. Align the arrow cursor along any appropriate meridian. Anodized aluminum discs, 3-3/4" dia. Plastic cursor 4-3/4"
P/N 13-06684..... $15.95

TRAFFIC PATTERN ORIENTATOR TPA-303 - The TPA-303 Traffic Pattern Orientator graphically displays all headings for left (standard) and right (non-standard) traffic patterns when the runway heading is aligned with the compass rose. Light signals and "acknowledging" instructions are also shown. Anodized aluminum discs, 3-3/4" dia. Cursor 4-1/4" P/N 13-06687..... $16.75

DENSITY ALTITUDE PERFORMANCE COMPUTER DAA-304 - The Density Altitude Performance computer shows the aircraft's rate of climb and minimum-required takeoff distance. Anodized aluminum discs. 3-3/4" dia. Important: Always consult your pilot's operating handbook as their computer does not supplement or replace the manufacturer's performance data. Not applicable to turbocharged aircraft. P/N 13-06688..... $16.75

DNP-13 - 13" Deluxe Navigation Plotter with nautical and statute scales, sawtooth graduated color-coded scales for Sectional, WAC, and Terminal Charts. PVC plastic 13-5/16" x 4"
P/N 13-06696..... $10.75



DNP-8 - 8 " Deluxe Pocket Navigation Plotter with sawtooth graduated color-coded, nautical, statute, and terminal area scales for Sectional, WAC, and Terminal Charts. PVC plastic 8-1/8" x 2-7/8"
P/N 11-07723.....$8.95

DNPR-13 - 13 " Deluxe Plotter with Rotatable Azimuth Compass Rose, nautical & statute sawtooth graduated color-coded scales for Sectional, WAC, and Terminal Charts. PVC plastic 12-5/16" x 4-1/2"
P/N 11-07724..... $12.95

NP-13 13 INCH NAVIGATION PLOTTER - Four precision protractor scales and fourteen nautical and statute scales for Sectional, WAC, and Terminal Charts. Plotting is easy and accurate when done with an APR plotter. Instructions are printed on the plotter. Constructed with durable plastic. Dimension: 13 5/6" x 4"
P/N 13-19913.....$9.95

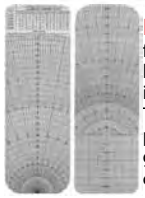
NPR-1313INCHAZIMOUTHCOMPASSROSENAVIGATIONPLOTTER Four protractor scales and fourteen nautical and statute scales for Sectional, WAC, and Terminal Charts. Instructions are printed on the plotter. Durable plastic. Dimension: 13 5/16"x 4 ½"
P/N 13-03511..... $10.90

HPC-206 - Holding Pattern Computer. Pocket size. Visually displays entry headings from all directions for both standard and non-standard holding patterns. Shows holding speeds and inbound time to fix. Colorful segments for easy learning and use. 4" x 5" HOLDING PATTERN COMPUTER displays entry to standard and non-standard holding patterns, maximum indicated holding speeds, and time of inbound leg to fix. Complete instructions. "Best on the market" designed by Capt. Barry Schiff P/N 11-07722..... $12.50

E6-B2- H/S - E6-B2 D with High Speed Wind Slide of 100 to 800 ks or miles. Compressibility "F" factor scale shows the "F" correction factors for TAS. Gives calibrated airspeed from 200 to 550 knots at pressure altitudes of 10,000 to 50,000 feet. Crosswind grid shows method to calculate crosswind and headwind components. Anodized aluminum computer, 4-7/8" x 11-1/8" P/N 13-06673..... $39.95

E6-B8D - Deluxe all plastic student Pilot Wind Triangle & T/S/D navigation computer. Features the new exclusive windspeed cursor which shows the speed and drift without pencil marks. Color-Coded sawtooth scales. Calculates all necessary flight planning & enroute navigation requirements. Easy to learn and use with the instructions printed on the computer. 4-1/2" x 8-3/4" P/N 13-06675..... $17.75

E6-B9 - Universal Standard Wind Triangle & T/S/D Large anodized aluminum computer. calculates all necessary flight planning & enroute navigation requirements. 4-7/8" x 9-5/8"
P/N 13-03497..... $24.75

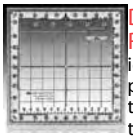


LOW & HIGH SPEED SLIDES - Low & High Speed Slide for E6-B9 or E6-B2 models. Low wind speeds 10 to 270, high wind speeds 100 to 800 kts or miles, compressibility "F" factors scale shows the "F" correction factors for TAS. Gives calibrated airspeed from 200 to 550 knots at pressure altitudes of 10,000 to 50,000 feet. Crosswind grid shows method to calculate crosswind and headwind components. 3-7/8" x 11-1/8"
P/N 13-06680..... $12.50

JNP - Enroute IFR Radio Facility Chart Plotter for NACO and Jeppesen Radio Facility Charts, 12 high visibility scales, displays entry diagrams of standard and non-standard holding pattern, compass rose plotter, km to nm and nm to km conversion scales. 8-3/4" x 3-1/4" P/N 13-06704..... $10.85

DJNP - Deluxe Enroute IFR Radio Facility Chart Plotter for NACO and Jeppesen Radio Facility Charts, 12 high visibility scales, displays entry diagrams of standard and non-standard holding pattern, compass rose plotter, km to nm and nm to km conversion scales. Lifetime guarantee, LEXAN® 8-3/4" x 3-/1/4" P/N 13-06706..... $11.95

APR DRFC-1 POCKET IFR & RNAV FOR JEPPESEN & NACO CHARTS - Has 13 scales for Jeppesen Radio Facility and NACO Charts. Shows a compass rose and a color-coded illustration for parallel, teardrop, and direct entries to standard and non-standard holding patterns. 6" x 3 ½". Lifetime Guaranteed. P/N 13-06701..... $10.95



DELUXEINTERNATIONALPROTRACTOR&PARALLEL RULE PLOTTER - Designed with high visibility color graphics, a tinted grid, and larger numbers and lines for easier positioning and reading. This plotter eliminates the need to use dividers and parallel rulers. A hole in the center of the instrument is used to conveniently mark and rotate the plotter. WAC/ONC 1:1,000,000 VIS/TERM 1:250,000 Scales, PVC plastic Dimension: 5" x 5" P/N 13-06707.....$8.50

E6-B8DP DELUXE STUDENT PILOT FLIGHT COMPUTER WITH NP-8 PLOTTER - Features the patent pending exclusive Wind Speed Cusor Arm that quickly tells you groundspeed, wind correction angle, and magnetic heading. Eliminates two set-ups and the need to mark dots on the plastic disc. The E6-B8DP calculates all necessary flight planning and en route navigation requirements. Color-coded sawtooth scales are user-friendly and allow for quick, accurate reading. P/N 13-06676..... $19.75

PS

FLIGHT ACCESSORIES - PLOTTERS

ON COURSE AVIATION PRODUCTS CHART MARKS

Customize your charts with these highly visible, self sticking, removable accents, outlines, & notes. Add a compass rose to any airport or airway intersection, outline VOR information, accent airport or communication information. 20x20nm see through notes accept pencil or pen for your special information. All are easily removable after your flight.

Note (11/package) ..... P/N 13-30110 ..... $3.50/ea.
Outlines (17/package) ..... P/N 13-30112 ..... $3.50/ea.
Accents (16/package) ..... P/N 13-30113 ..... $3.50/ea.

ERASABLE HIGHLIGHTERS

These erasable highlighters allow you to highlight all necessary information. They also allow you to erase any marks you've made by mistake! With dual ends, these highlighters will make everything you do in the cockpit easier and more efficient.

Yellow ..... P/N 14-01636 ..... $2.95
Orange ..... P/N 14-01637 ..... $4.40
Pink ..... P/N 14-01638 ..... $4.40
Blue ..... P/N 14-01639 ..... $2.95

CHINA MARKERS

The economical solution for marking on porous and non-porous surfaces such as paper, cardboard, plastic, wood, glass, ceramics, and some metal.

Red ..... P/N 14-01622 ..... $1.50
Blue ..... P/N 14-01623 ..... $1.49
Black ..... P/N 14-01624 ..... $1.50
White ..... P/N 14-01625 ..... $1.50
Yellow ..... P/N 14-01626 ..... $1.49

MAGNIFYING SCALE

At last, an accurate nautical mile scale with a built in magnifying lens to clearly enlarge the fine print on sectional charts. Made of heavy duty, extra strong, cast acrylic, printed in two colors with easy to read sectional scale graduations (1:500,000). Available in 2 sizes, 100 NM (16") for flight planning, 60 NM (10") for cockpit use.Order both.

60 NM ..... P/N 13-30120 ..... $14.95
100 NM ..... P/N 13-30121 ..... $14.95

5-1/2 INCH ACADEMIC DIVIDER

5½" divider with selfcentering gearhead design. Replaceable and adjustable needle points. Matte nickel finish resists stains and tarnishing.

P/N 13-08057 ..... $9.50

UNBREAKABLE SUPER PLOTTER

Here's a special flight planning tool we really like. A colorful little plotter with a rotating azimuth that makes it much easier to plot a courseline. Place the compass rose over your departure point and rotate the straight edge towards destination. Presto.. an instant readout of your course! Reads distance in statute miles or nautical miles for both sectional and WAC charts. Made of bullet proof Lexan. Won't crack, break, or warp in extreme heat or cold.

P/N 13-03473 ..... $18.95

PILOTS FREQUENCY REMINDERS

This little prompter is designed to allow the pilot (especially students) to pre-plan which frequencies will be used during a flight and hang this handy item close at hand in the cockpit. this is ideal when operating in a high density airport area. Helps eliminate cockpit clutter and searching for often used frequencies.

P/N 13-04391 ..... $5.50

HOLDUP HOLDING SITUATION INDICATOR

The Holdup is so easy to use that directions are provided on the device only because rust can develop on a pilot's holding techniques, especially for issued, nonpublished holds. They remind you how to set up intersection holds and station holds, If you forget. (There's also a built-in way to set up station holds in a single step.) Then, in both cases, you just find your heading to the fix on the compass dial, and read the entry in the zone next to it. At a typical intersection, there are 8 (eight) possible holds that can be assigned. "Hold south of ORVIL intersection on the 340° radial, left turns?" You won't believe how easy this is with The Holdup until you try it.

P/N 13-03365 ..... $15.95

ZULUCARDS

These cover the basics you'll need if you're learning to fly. As we all know, in those early days when we learn to fly we're trying to cram a heck of a lot of data in to a relatively small simian skull. It's not a matter of *if* you forget something but *when*. This set of cards will help you in your time of need. Cross Wind - A colorful and easy to read way to calculate your cross wind component when coming into your destination. En Route info - Commonly used VHF frequencies, the phonetic alphabet and VFR cruising altitudes. Ground - Common airport signage. Emergency - Light Gun signals, transponder codes and Lost Procedures. Vspeeds - Write in the Vspeeds for your particular aircraft. Buy extras and keep one for each plane you fly. Card Dimensions: 5" x 8.5".

ZuluCards Standard Set of 5 ..... P/N 17-00249 ..... $6.70

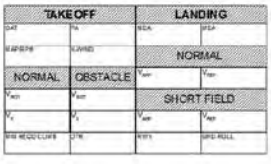
ALSO AVAILABLE:

ZuluCards Present Weather Set ..... P/N 17-00248 ..... $6.70
ZuluCards Bonus Set ..... P/N 17-00247 ..... $6.50
ZuluCards VFR Mini-Z Set ..... P/N 13-11888 ..... $6.50
ZuluCards IFR Set ..... P/N 13-11673 ..... $6.70
ZuluCards IFR Mini-Z Set ..... P/N 13-11890 ..... $5.95
ZuluCards Present Weather Mini-Z ..... P/N 13-11889 ..... $5.95
ZuluCards Bonus Set Mini-Z ..... P/N 13-11891 ..... $5.95
ZuluCards Departure Climb Rates Set ..... P/N 13-11894 ..... $4.35
ZuluCards Departure Climb Rates Mini-Z ..... P/N 13-11895 ..... $4.35

VFR/IFR NAVBOARD & CHARTSAVER

Hold charts between two clear plexiglass surfaces for in-flight reference. Visible from both sides, so you can use two charts. One facing in each direction. Mark plexiglass with grease pencil without defacing chart. Pilot course lines, destinations, checkpoints, headings, vectors, etc., directory on surface. Revisions can be made during flight, easy to erase after flight. Charts stay fresh and reusable many times. Measures 12" x 10".

P/N 8154 ..... $24.85



TOLD CARDS

Told Cards are a great cockpit accessory for pilots flying in VFR and IFR conditions.

Description	Part No.	Price
Told Cards SE VFR 3x5 Double Sided Cards 25 Pack	13-12011	$12.25
Told Cards SE IFR 3x5 Sticky Note Pad 50 Cards	13-12012	$8.49
Told Cards ME IFR 2.5x3 Double Sided Cards 25 Pack	13-12013	$8.49
Told Cards ME Take off 3x3 Sticky Note Pad 50 Cards	13-12015	$8.99
Told Cards IFR Approach 3x3 Sticky Note Pad 50 Cards	13-12016	$8.99

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CHART CLIPS - TOOL BAGS

PUT-IT SUCTION CLIP

This clip is strong enough to hold an approach plate, chart, or checklist. Attaches by a suction cup to the instrument panel, yoke or any other nonporous surface.....P/N 8197.....$5.85

NO CLUTTER CLIPS

No Clutter Clips * Holds checklists, approach plates, charts, etc. * Stick on most slick surfaces * UV Resistant

1 Small clip per package.....P/N 13-06636.....$3.95
2 Small clips per package.....P/N 13-06408.....$8.75
1 Large clip per package.....P/N 13-06409.....$5.50

WATCH-IT ACCESSORY HOLDER

"World's most versatile holding device". Lets you mount time pieces and calculators exactly where you want-on the wheel, the yoke tube of clipboard. An ingenious bracket, an adjustable holding loop, and a little Velcro is all it takes. Once positioned, can be mounted & removed repeatedly. Non-reflecting, black materials, weighs less than 1oz.

P/N 8265..... $10.90

YOKE CHART CLIP

When you want the chart or approach plate right in front of you - this clip will hold it on the yoke. Adjustable band wraps around the yoke and holds the clip firmly. Fits all general aviation aircraft controls. Non-reflective black finish. .....P/N 8135..... $9.95

CESSNA YOKE CLIP

Yoke Mount Combo Clip (Large). Fits 1" - 1 1/2" Diameter Shaft.....P/N 13-02845.....$8.95

IFR CHART CLIP

Make IFR flying simpler by keeping vital instrument approach plates and charts in place. Attached to the yoke rather than in your lap or on the floor, this chart clip comes in various models designed to install easily on the yoke of your aircraft. Insures that your navigational charts stay in front of your eyes when you need them most. Handy for VFR charts as well. We'll be happy to assist you in determining what model chart clip will best fit your aircraft.

1.5" Post Standard Clamp .....P/N 8131..... $21.75
1.5" Post Wide Clamp .....P/N 8487..... $21.75
2" Post Standard Clamp.....P/N 8690..... $21.75
2" Post Wide Clamp.....P/N 8822..... $21.95
3" Post Standard Clamp.....P/N 8674..... $21.95
3" Post Wide Clamp.....P/N 8915..... $21.75

HOLD-IT CHART HOLDER

Simple and effective, this handy stainless steel clip holds charts right where you need them. Elastic strap attaches securely to leg, aircraft yoke, or visor.

P/N 13-01759..... $9.95

YOKE CLIPS

Clip this yoke on your aircraft so it does not interfere with movement of controls. Spring may be adjusted for smaller diameter shafts by pinching with pliers.

Large - Used on 1" tube P/N 13-04392.....$8.95
Small - Used on 3/4" tube P/N 13-04393.....$8.95

APPROACH PLATE HOLDER

• 10 leaf • Flip-over (not accordion) • Size: 6"x 9" • Vinyl.....
P/N 13-02772 ..... $5.95

CARRY-IT CORDURA TOTE CASE

This multi-functional tote case is made from black Cordura fabric and features 8 pockets and velcro closures. Holds radios, flashlights, pens, pocket PC, maps, charts & more.

P/N 13-01757..... $22.50

PROFLIGHT BOOSTER SEAT POUCH

• End cockpit clutter • Made or durable Cordura • Stores flashlight, fuel tester, flight guides, approach plates, charts, plotter, E6-B, sunglasses and more. • Available in black, AF blue, red, gray & olive drab

Black..... P/N 13-31871 ..... $14.75
Blue..... P/N 13-03005 ..... $24.95
Red..... P/N 13-31870 ..... $18.85

23 POCKET BIGMOUTH BAG

17 Multi-use pockets inside and 6 outside organize tools and accessories. Opens wide for easy access to bag's contents. Padded reinforced web carrying handles. 12"L x 8 1/2"W x 8"H

P/N 12-00329 ..... $18.75

12 POCKET TRAYTOTE BAG

- This bag has 2 pockets inside and 10 pockets outside with a 11"x 6" multi-compartment tray which slides securely into bottom of bag. Opens wide for easy access to contents and has reinforced web carrying handles. 12"L x 8"W x 12"H

P/N 12-00163.....$38.60

14 POCKET TRAYTOTE BAG

- This bag features 2 pockets inside, 12 pockets outside, with a 13.5" x 6" multi-compartment plastic tray slides securely into bottom of bag. Opens wide for easy access. 16"L x 9"W x 12"H P/N 12-00164 ..... $47.85

MILITARY STYLE TOOL BAGS

These tool bags are made of heavy-duty military-type tough 18oz./sq.yd. cotton duck with a water repellent mildew-resistant treatment. The mechanics Tool Bags have compartmentalized side pockets with flaps. Hardboard bottoms are completely sewn into each bag and are unexposed. All stitching is of heavy duty nylon thread and the handles are made from heavy military spec. webbing. All inside seams are bound to eliminate raveling of the fabric.Long-tab, self-locking slider. Color: O.D. Green. Available in 2 sizes:

O.D. Green Small: 6" x 6" x 12" Bag ..... P/N 13-02500 .....$49.75
O.D. Green. Large: 5" x 5" x 16" Bag ..... P/N 13-02600 .....$53.00

TOOL WRAP

Kennon's heavy duty soft sided tool carrier is an old style canvas tool wrap that you can't find anymore. 9 pockets. Rolls up for compact storage and closes with adjustable velcro. Also available in a larger 11 pocket version. Tools not included.

Tool Wrap 9 pockets.....P/N 13-01746.....$29.95
Tool Wrap 13 pockets.....P/N 13-01747.....$39.95

UNIVERSAL BEVERAGE HOLDER

This Universal Beverage Holder made of billet aluminum installs easily in any thickness dash or instrument panel. Available in two styles, with square or oval face-polished surfaces, its compact design permits vast installation possibilities.

Oval Face.....P/N 13-03792.....$139.00
Square Face.....P/N 13-03793.....$158.95

YOKE BALL CLIPS

Allows the user to mount various objects on the aircraft yoke for easy access and hands free reading. Made heavy duty to hold more weight than other clips. Sizes given refer to a general size range only - they will work with almost any aircraft with a similar size yoke.

Part No.	Tube Size	Rise	Application	Price
17-00242	1"-1-1/2"	1"	Cessna 177, 182, 206, 210, Piper PA-28, Tomahawk, Commander	$16.85
17-00244	1"-1-1/2"	2"	177, 182, 206, 210, Piper PA-28, Tomahawk, Commander	$16.85
17-00245	3/4"-1"	2"	Cessna 150, 152, 172, BE-76, Piper Cadet, Early PA-28.	$16.85

LICENSE HOLDERS

Black leatherette with clear plastic window to display ownership certificates. P/N 13-07900 only includes eyelet holes for mounting and metal plates to keep corners from fraying.

4-7/8" X 6-7/8" .....P/N 13-07900 ..... $7.95
7-1/2" X 8" .....P/N 13-17904 ..... $6.75
5" X 7".....P/N 13-17905 ..... $7.85
5" X 14" Double Pocket .....P/N 13-17906 .....$14.95

NELSON AIRCRAFT DOCUMENT CASE

• Made of Cordura
• Two compartments

Red ..... P/N 13-02934..... $19.50

PS

KNEEBOARDS

SOFT-G PLUS KNEEBOARD

This kneeboard is originally designed for high performance fighter & attack aircraft. Standard features include: reversible clip board which allows pocket and document loops to be reversed right or left side, 1-1/2" wide adjustable plastic strap, clear plastic information pocket, removable document loops, 4 elastic pen/pencil slots, side release buckle, durable wire clip, and NEG-G strap. P/N 13-12655 ..... $47.50

The performance package includes: information cards, clear document protectors, removable document protectors, and releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12656 ..... $63.75

TRIFOLD KNEEBOARD

The standard features include: right and left light pockets that double as pen/pencil pockets, 1.5" wide adjustable plastic strap, 4 clear plastic information pocket, right & left document loops, side release buckle, durable wire clip, and padded backing P/N 13-12660 ..... $45.50

The performance package includes: information cards, clear document protectors, flex light with fixed or adjustable beam, and releasable cable ties (holds document protectors securely to kneeboard) optional.

P/N 13-12661 ..... $59.95

9-G PLUS KNEEBOARD

This kneeboard is originally designed for high performance fighter and attack aircraft. The standard features include: right and left light pockets that double as pen/pencil pockets, 1.5" wide adjustable plastic strap, 3 clear plastic information pocket, right and left removable document loops, side release buckle, easy access pocket, durable wire clip, and padded backing. P/N 13-12650 ..... $45.95

The performance package includes: information cards, clear document protectors, removable document protectors, & releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12651 ..... $64.75

MINI TRIFOLD KNEEBOARD

This mini trifold kneeboard measures 8" x 16.5". The standard features include: reversible clip board which allows pocket and document loops to be reversed right or left side, 1-1/2" wide adjustable plastic strap, clear plastic information pocket, removable document loops, 4 elastic pen/pencil slots, side release buckle, durable wire clip, and NEG-G strap. P/N 13-12665 ..... $39.85

The performance package includes: information cards, clear document protectors, removable document protectors, and releasable cable ties (holds document protectors securely to kneeboard).

P/N 13-12666 ..... $61.75

JEPPESEN IFR THREE-RING TRIFOLD

The Jeppesen three ring trifold is great for holding approach charts and features three approach chart pockets, collapsible rings, elastic pen / pencil / penlight holders, and valuable IFR flight information the clip board. Includes free U.S. Low altitude planning chart. Size: 10"x 20" open.

Kneeboard/Clipboard ..... P/N 13-06956 ..... $45.95

VFR KNEEBOARD

This kneeboard places information at your fingertips. It holds charts, flight computers and much more. An elastic leg strap holds this unit comfortably in place with a velcro closure. The metal clipboard (also available separately) contains valuable information for your VFR flight needs. An additional strap is included allowing you to use your clip board independent of the kneeboard. You are really getting two products in one.

Kneeboard/Clipboard ..... P/N 13-06955 ..... $40.95

COVER FOR MILITARY KNEEBOARD

Cover for Military Kneeboard, red in color

P/N 13-02891 ..... $9.20

AERO PRODUCTS RESEARCH KNEEBOARDS

5-3/4" X 10" X 2-1/2" Deluxe kneeboard. Official Air Force and Navy models with quick-release buckles and non-slip foam strips to keep the unit in place. Each model includes 2 heavy-duty paper clamps, pencil holder This is the unlighted version of MXU-163/C. Anodized aluminum. Meets all military specs.

MK-2A/C ..... P/N 13-03521 ..... $63.75

9" x 5-3/8" Contoured base, non-slip kneeboard. 3" positive ext. clip for approach plates, etc. Pencil holder, comfortable leg strap, sturdy, lightweight. Black, non-glare aluminum.

MK-9 ..... P/N 13-03520 ..... $45.95

6" x 8-3/4" VFR kneeboard lists flight plan sequence, tower light signals, time zones, visibility and distance-from-cloud requirements plus much more. Anodized aluminum. Includes flight logs.

0-100 ..... P/N 13-03518 ..... $12.95

6" x 8-3/4" IFR kneeboard lists flight plan sequence, alternate flight planning and distance-from-cloud requirements, IFR required reports, plus much more. Anodized aluminum. Includes flight logs.

0-150 ..... P/N 13-03519 ..... $12.95

VFR/IFR PILOT FLIGHT DESK

The PFD-3 PILOT'S FLIGHT DESK, first designed and introduced by APR Industries, puts essential VFR and IFR information right at your finger tips. The VFR side, with a small bear clip, holds flight logs and approach plates while the larger bear clip on the IFR side opens to 1" and is designed to hold aeronautical charts and radio facility approach books. Non-slip foam on the underside of the board helps to hold everything securely in place. APR's PILOT'S FLIGHT DESK is the best available! The PFD-3 has 3 clips along with all the features PFD-1 provides additional uses such as clipping long sections of flight charts, aprroach charts and log sheets (VFR-100 / IFR-200). Includes a pad of logs with sample sheets designed by Capt. Barry Schiff. Dimensions: open size: 16" x 9", folds to: 8" x 9". Anodized Aluminum, .050" thick ..... P/N 13-11734 ..... $27.85

ASA IFR& VFR KNEEBOARDS

These IFR and VFR Knee- boards are an attractive, light gray, brushed aluminum. Instrument and visual information is clearly silkscreened on the boards so pilots can quickly reference rules at a glance when operating a cyclic or stick. All information on the Kneeboards match current Federal Aviation Regulations. The Kneeboards feature a comfortable, 1.5" wide elastic legband that hugs the leg without binding. Velcro fasteners can be adjusted without removing the kneeboard and fits all leg sizes. A pencil/pen holder is designed into the leg for fast note taking. The Kneeboards also feature a 4-3/4" wide metal clip that is easy to lift and strong enough to hold NOS charts and other necessary papers. Paper-protector elbows secure material, yet papers won't rip when pulled out. .....

VFR Kneeboards ..... P/N 13-06925 ..... $13.95

IFR Kneeboards ..... P/N 13-06930 ..... $14.95

NAV-DATA LIGHTED KNEEBOARD

Nav-Data KB-170 Lighted Kneeboard

Rugged molded construction used by the U.S. Military with heavy duty elastic strap and buckle to keep it firmly in place. Also has a contoured bottom and foam strips for extra stability. Rheostat control for perfect lighting. Holder for multiple pens or pencils plus built in pencil sharpener. Upper clip opens 1" wide to hold even large approach plate books. Lower clip allows for more versatility. Compact dimensions: 10"x5.5". Lightweight: approx 16 ounces Operates on 3 AA batteries (Not Included) ..... P/N 13-11997 ..... $59.95

THE PEN PAL

The Pen Pal frees up the hand of a person who would otherwise be holding a flashlight to write in a low light environment. Capable of being attached to most writing utensils, The PenPal minimizes the user's loss of low light vision adaptation while preventing loss of the utensil in the dark. Preserving low light visibility in night flight is imperative; and so is almost every other cockpit task that requires a light. The PenPal is the solution. Pilot tested and approved, The PenPal is bright enough for filling out departure clearances, weather, power settings and log books and dim enough to minimize the loss of low light vision capability. A lanyard can also be attached to the grip keeping your lighted writing utensil at close reach ..... P/N 13-12969 ..... $12.95

PS

KNEEBOARDS

FOLDING LAP BOARD

This 9" x 16" flying desk has 2 large clips to hold in-flight necessities such as charts, flightlogs, and approach plates. Lost communications procedures for both VFR and IFR, light gun signals, position reports, frequencies, and transponder codes are silk-screened on the brushed aluminum lapboard for quick reference during emergencies. It folds in half when less space is needed and for convenient storage. Foam strips on the back keep the lapboard comfortably in place. P/N 13-02314 ..... $29.95

TRI-FOLD KNEEBOARD

For the pilot who has a little more to juggle, the Tri-Fold Kneeboard uses the expertly styled VFR Kneeboard in a 3-panel jacket. The high-quality construction features durable material & double-sewn seams where extra stress takes place. The color is jet black with a logo attractively embroidered in silver on the front. The left panel has ample room for small books, papers and unusually shaped items. The center panel holds the kneeboard under clear plastic. Either side of the center includes a pen/pencil holder and buttonholes that allow the pilot to fold back one or both panels of the kneeboard with the legband. This is ideal when operating a cyclic or stick.The right-hand side contains a clear pocket for easy map viewing. The elastic legband has velcro closures and will comfortably fit any leg size. Try the kneeboard that puts everything at your fingertips.

P/N 13-06950 ..... $35.50

MYCLIP THIGH KNEEBOARD

The MyClip kneeboard is the only iPad Kneeboard that works with the iPad and the iPad2. This innovative design easily transitions from portrait to landscape mode allowing easy viewing of charts and approach plates. Soft rubberized clips gently hold the iPad and even work with the Apple "Smart Cover". Light and compact, this iPad kneeboard is made for aviation. P/N 13-09290 ..... $39.95

MY BIG CLIP KNEEBOARD

The universal design allows the iPad or similarly sized tablet to be used as a kneeboard without taking it out of your everyday case. Avoid the hassle of removing your favorite case just because you are going somewhere. The MyBigclip has an opening just under 1in. The bigger opening allows it to work on most cases and folios including the Otterbox® series. P/N 13-14951 ..... $39.95

MYCLIP MINI KNEEBOARD

The MyClipMini is a universal tablet kneeboard that will hold an iPhone in the landscape mode all the way up to an iPad in the portrait mode. It is designed for the iPad Mini but will work on all similar sized tablets. Clips slide along an elastic belt and can be sized down to 4in (10cm) and up to 8in (20cm). This flexibility allows for an easy switch between protrait and landscape mode and allows the MyClipMini to be used on all of the other 7in tablets.

P/N 13-14952 ..... $37.95

ECONOMY MINI-Z BOARD

If you've got limited space in your cockpit and you're looking for a minimalist yet stylish board, the Mini-Z is for you. Made from the same high-quality materials and superb craftsmanship as other Zulu boards, the Mini-Z is 50% smaller than the Standard. The Economy Mini-Z Board features a plain pad. Black ballistic nylon. P/N 13-04903 ..... $35.50

STANDARD MINI-Z BOARD

If you've got limited space in your cockpit and you're looking for a minimalist yet stylish board, the Mini-Z is for you. Made from the same high-quality materials and superb craftsmanship as other Zulu boards, the Mini-Z is 50% smaller than the Standard. The Standard Mini-Z Board features the 3-in-1 Flight Plan Pad and five Mini Zulucards. Black ballistic nylon. P/N 13-04905 ..... $38.75

Blank Flight Pad (50 Sht.) - Single Pad ..... P/N 17-00251 ..... $2.25
3 in 1 Flight pad (50 Sht.) - Single Pad ..... P/N 17-00250 ..... $3.35
3 in 1 Flight pad (50 Sht.) - 10 Pack ..... P/N 17-00321 ..... $26.50

ECONOMY ZULU BOARD

Made out of the same high-quality materials and superb craftsmanship as other Zulu boards, the Economy Zulu Board comes with a blank flight pad (no Zulucards). Features: • Repositioning clipboard system • Rugged ballistic exterior • Sturdy anodized aluminum back plate • Clean, low profile clip aluminum clipboard • Organizer post to keep everything on your lap • Easy grab zipper pulls • Breeze cheater elastic strap • Oversize pen pockets, or mini light • Ventilated elastic knee strap • Stable 4-point knee strap mounting • 50 Sheet Flight Pad. P/N 14-02857 ..... $34.95

STANDARD ZULU BOARD

The Standard Zulu Board is a full featured cockpit organization tool. It includes five Zulucards and a 50 sheet pad of the Zulu 3-in-1 Flight Plan Pad. Black ballistic nylon. Features: • Repositioning clipboard system • Rugged ballistic exterior • Sturdy anodized aluminum back plate • Clean, low profile clip aluminum clipboard • Organizer post to keep everything on your lap • Easy grab zipper pulls • Breeze cheater elastic strap • Oversize pen pockets, or mini light • Ventilated elastic knee strap • Stable 4-point knee strap mounting • 50 Sheet Flight Pad • 5 Card Ready Reference Set • 50 Sheet 3-in-1 Flight Plan Pad P/N 13-03224 ..... $43.90

Blank Flight Pad (50 Sht.) - Single Pad ..... P/N 17-00252 ..... $2.65
Blank Flight Pad (50 Sht.) - 10 Pack ..... P/N 17-00324 ..... $21.60
3 in 1 Flight pad (50 Sht.) - 10 Pack ..... P/N 17-00322 ..... $27.50

DELUXE ZULU BOARD

The Deluxe Zulu Board comes with a hinged storage compartment under the clipboard for storing approach plates, airport diagrams or just a place to toss the gas receipts. Black Ballistic Nylon. Includes 6 Zulu Cards and two 50 sheet pads of the 3-in-1 Zulu Flight Plan Pads. Features: • Repositioning clipboard system • Rugged ballistic exterior • Sturdy anodized aluminum back plate •Clean, low profile clip aluminum clipboard •Organizer post to keep everything on your lap • Easy grab zipper pulls • Breeze cheater elastic strap • Oversize pen pockets, or mini light • Ventilated elastic knee strap • Stable 4-point knee strap mounting • 50 Sheet Flight Pad • Two 50 Sheet 3-in-1 Flight Plan Pads • 6 Card Ready Reference Set • Compartment Style Clipboard P/N 13-04922 ..... $58.75

MYCLIP IPAD MINI SMART CASE

The MyClipMini Case is a hard plastic case with a smart cover that will work with the MyClipMini. This everyday case will allow you to use your iPad Mini in the cockpit or in the coffee shop.

Note: MyClip Mini strap shown in photo is not included. Please see Part Number 13-14952 to order the MyClip Mini Strap.

Mini Smart Case ..... P/N 13-14953 ..... $16.95

PS

KNEEBOARDS

FLIGHT DESK TRI-FOLD KNEEBOARD

Flight Desk Kneeboard greatly improves cockpit organization of charts & accessories. Unlike some other kneeboards with limited utility, will hold sectional charts, a large E6B type computer, and has two elastic loops on either side of the clipboard to hold a goose-neck type flashlight. If the middle loop is not used for a computer, it can be used to hold a handheld transceiver..... P/N 13-03474 ..... $16.75

ORGA-KNEE-ZER™ KNEEBOARDS

Extremely versatile, organizer/kneeboards providing a standard 7-ring binder on a very stable platform with built-in pencil sharpener, combo maglite/pencil holder and many other unique features. Compact stowage, rugged materials and powder coat finish, add even more to their rich feature set. Use for VFR or IFR flight, using NOS or Jepp charts and see how their versatility can adapt to your demanding and varied needs as pilot. The patented design of Model A1-MC allows you to flip through your charts, checklists or other reference materials, with unobstructed access to the writing surface for jottingATC instructions or holding flight plans. It's excellent for most general aviation aircraft and is very popular with Cessna and Piper pilots. It's 9" long x 8" wide and up to 16" wide when fully open. It can also be used as a simple clipboard for preflight checks when closed (includes 3 chart pockets). P/N 13-03326 .....$37.95

APR KNEEBOARDS

P-IFR - Professional Pilot's Deluxe IFR Flight Kneeboard. Essential IFR flight information printed on top of kneeboard, large clip opens to 1" for approach book, adjustable strap. Board will manually rotate to best writing angle. Anodized aluminum, 9-1/2" x 6-3/8"
P/N 13-06712..... $13.95

P-VFR - Professional Pilot's Deluxe VFR Flight Kneeboard. Essential VFR flight information printed on top of kneeboard, large clip opens to 1" for approach book, adjustable strap. Board will manually rotate to best writing angle. Anodized aluminum, 9-1/2" x 6-3/8"
P/N 13-06711..... $13.95

APR MXU-163/LL OMNI KNEEBOARD W/ LED LIGHTING

APR's MXU-163/LL is a precisely engineered aluminum kneeboard designed to meet all requirements of general aviation, commercial, law enforcement and military pilots. The LED light provides over 100,000 hours bulb life and reduces battery power requirements by 75%. Its adjustable intensity evenly illuminates the board's top surface. The contoured base with foam pads that prevent movement comfortably fit either leg. A quick-release buckle on the wide elastic adjustable leg strap provides stability and releases quickly. The kneeboard's top and bottom clips open 1" to hold flight plans, charts, maps, or an approach plate book. The MXU-163/LL has two pencil holders: one at the top, angled for quick pick-up to write clearances, and a second on the side of the board. Kneeboard comes with a pad of VFR en route flight logs and an example log showing step-by-step instructions. Lifetime, non glare anodized aluminum. Dimensions: 5 1/2" x 10 1/2" x 2 1/2". P/N 13-11490.....$112.95

SECURE CLIP SET

Use the Secure Clip Set to secure your GPS, keys, pen, or flash light on your clipboard or in your bag when not in use. The Secure Clip Set includes a stainless steel S-Biner that comes with six different-colored mini S-Biners and is cheap insurance to minimize your chance of losing your small GPS. Secure Clip Set shown individually and securing a GPS on a clipboard and on an iPad Flight Bag, both sold separately.
P/N 13-10433.....$7.00

SECRET POCKET PHONE CASE GENUINE LEATHER

This travelers accessory is made of lightweight / flexible genuine leather. Capacity for a phone up to 3-1/4" in width x 5" in length. The extended secret pocket 6" in depth fits smoothly along side your hip underneath clothing to easily hide: Passport, Money, Credit Cards, Small Valuables, and much more. P/N 13-15692..... $33.75

ULTIMATE KNEEBOARD IPAD HOLDER

The Ultimate Kneeboard iPad® holder has a seven ring design so it will fit both models of the Ultimate Kneeboard®. It is also is designed to fit all models of the iPad® and iPad® mini. The Ultimate Kneeboard iPad® holder is made from the same durable materials as the Ultimate Kneeboard®. It is held in place at each corner with heavy-duty elastic and offers easy access to the Home button and connecter port. Just like the Ultimate Kneeboard®, the iPad® holder comes with a money back guarantee and is made in the USA by folks from Boise, Idaho. P/N 13-14747..... $29.95

ULTIMATE KNEEBOARD IPAD MINI HOLDER

The Ultimate Kneeboard iPad® holder has a seven ring design so it will fit both models of the Ultimate Kneeboard®. It is also is designed to fit all models of the iPad® and iPad® mini. The Ultimate Kneeboard iPad® holder is made from the same durable materials as the Ultimate Kneeboard®. It is held in place at each corner with heavy-duty elastic and offers easy access to the Home button and connecter port. Just like the Ultimate Kneeboard®, the iPad® holder comes with a money back guarantee and is made in the USA by folks from Boise, Idaho. P/N 13-14748..... $32.95

HARPER KNEEBOARDS

FIXEDRINGULTIMATEKNEEBOARD™

- The fixed-ring model is the most popular kneeboard. The convenience of the snap-open, ring binder design makes it ideal for quickly changing pages, charts and checklists. Pilots flying into multiple airports or flying a variety of planes will find the fixed-ring design perfectly suited for them.
P/N 13-07022..... $43.50

LOOSERINGULTIMATEKNEEBOARD™

- Our loose-ring model has seven independent rings which are not bound together. The result is a kneeboard that molds perfectly to the shape of the pilot's leg. It is ideal for pilots who primarily fly the same airplane in and out of the same airport.
P/N 13-07023..... $41.50

NELSON KNEEBOARDS

MILITARY TRI-FOLD - • Size: 19.5"x11.5" (open), 11.5"x7" (closed) • Holds sm E6-B, stopwatch, pencils • Supplied w/pad of 50 flight logs • Aluminum board holds approach plates

Blue ..... P/N 13-06905..... $19.95
Gray..... P/N 13-06910..... $19.95
Red ..... P/N 13-02884..... $19.95
Olive..... P/N 13-02903..... $19.95
Replacement Flight Logs P/N 13-02888..... $4.00

ARMBOARD

The ArmBoard provides agronomical, space saving writing surface as natural to wear as a wrist watch. Regardless of how large or small the cockpit is, the ArmBoard truly frees up much needed space. The product was also tested by CFIs and proved extremely useful in taking notes during flight lessons and jotting down student performance comments for follow up during ground school. A writing pad is included with a flight planer version sold separately along with various flight reference cards to be used on the inside flap of the ArmBoard. ..... P/N 13-06021..... $31.95

ACCESSORIES

Set of 3 blank pads for the armboard ..... P/N 13-06025.....$5.95
Set of 3 mixed pads (Blank, Flight Planner & Ruled) for the armboard.
P/N 13-06024.....$6.99

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

DEOHAKO IPAD PRODUCTS

DEOHAKO IPAD PILOT KNEEBOARD

The Deohako iPad kneeboard is a compact, and versatile aviation mounting system that wraps around your leg quickly and ergonomically. Extends 25 cm to wrap tightly around your leg. Requies the Deohako Connection Case to utilize the attachment for all your aviation mounting needs. Also doubles great as a headrest mount to entertain your airplane guests. Remove the yoke mount clamp, and use it at home or on the go. Includes the Deohako Connection Case and Joby Gorillapod attachment that can be used separately or together as a kneeboard, work stand, or stroller mount to display your iPad. P/N 13-12932..... $95.00

DEOHAKO IPAD PILOT YOKE MOUNT

Compact, aviation mounting system that mounts to the yoke quickly and economically. Expands to a maximum of 4cm which works great for singles and light twins. Requires the Deohako Connection Case to utilize all your aviation iPad needs

P/N 13-12928..... $75.00

DEOHAKO IPAD PILOT COMBO MOUNTING KIT

iPad mounting kit provides the pilot with Winshield to yoke mounting and more. When you are done flying, remove the suction cup, and use it on the go. It is the only iPad Pilot Case on the market that can be used for various aviation mounts, but also for your everyday life. Use the various mounts at home as a versatile stand at work, home or on the go. In the box: • iPad Connection Case• Yoke Mount• Kneeboard / Headrest Mount• Durable Suction Cup Mount. P/N 13-12926.....$145.00

DEOHAKO IPAD PILOT SUCTION MOUNT

iPad Suction Cup Mount is a compact, aviation mounting system that mounts to the aircraft window quickly and economically. Enables quick mounting to the inside of the windshield in front of the co-pilot's seat or to the left of the pilot's seat. Very strong, and can withold pressure from flying, turbulence, and heavy weight. Requires the Deohako Connection Case to cradle your iPad. P/N 13-12930..... $75.00

DEOHAKO IPAD PILOT CONNECTION CASE

Deohako develops and patented a holistic tablet mounting system integrating function with high design. The Deohako Patent-Pending Connection Case for the iPad is the only case on the market with an open - source connection. Has 2 connection types built natively into the case: - Twist-and-Click connection and ¼-20 Screw, the universal standard for many small accessories. P/N 13-12934..... $60.00

DEOHAKO IPAD PILOT NOTEBOOK

The iPad notebook is one of Deohako's iPad attachments that works with the Twist-and-Click connection. Fits snugly around the Deohako iPad Case, with dimensions that just exceed the iPad form factor. iPad NOT included.

P/N 13-12936..... $35.00

DEOHAKO IPAD PILOT RIGID SUCTION CUP

The Rigid Suction Cup is one of Deohako's iPad and iPad mini attachments that works with the screw-in /¼-20 Screw, the universal standard for many small accessories. It is 6 inches in length, and suctions to flat, non-porous surfaces such as glass or flat plastic. P/N 13-12939..... $25.00

DEOHAKO IPAD PILOT BENDABLE SUCTION CUP

The Bendable Suction Cup is one of Deohako's iPad and iPad mini attachments that works with the screw-in / ¼-20 Screw. It is 1 foot in length, and suctions to flat, non-porous surfaces such as glass or flat plastic. P/N 13-12938..... $25.00

DEOHAKO IPAD PILOT ADJUSTABLE CLAMP

The Adjustable Clamp is one of Deohako's iPad and iPad mini attachments that works with the screw-in /¼-20 Screw, the universal standard for many small accessories. It attaches to cylindrical objects such as poles, wheels, and rods between 1/2 - 2 inches in diameter

P/N 13-12941..... $25.00

DEOHAKO IPAD MINI PILOT KNEEBOARD

The Deohako iPad kneeboard is a compact, and versatile aviation mounting system that wraps around your leg quickly and ergonomically. Extends 25 cm to wrap tightly around your leg. Requies the Deohako Connection Case to utilize the attachment for all your aviation mounting needs. Also doubles great as a headrest mount to entertain your airplane guests. Remove the yoke mount clamp, and use it at home or on the go. Includes the Deohako Connection Case and Joby Gorillapod attachment that can be used separately or together as a kneeboard, work stand, or stroller mount to display your iPad. P/N 13-12933..... $90.00

DEOHAKO IPAD PILOT MINI YOKE MOUNT

Compact, aviation mounting system that mounts to the yoke quickly and economically. Expands to a maximum of 4cm which works great for singles and light twins. Requires the Deohako Connection Case to utilize all your aviation iPad needs

P/N 13-12929..... $70.00

DEOHAKO IPAD MINI PILOT CONNECTION CASE

Deohako develops and patented a holistic tablet mounting system integrating function with high design. The Deohako Patent-Pending Connection Case for the iPad is the only case on the market with an open - source connection. Has 2 connection types built natively into the case: - Twist-and-Click connection and ¼-20 Screw, the universal standard for many small accessories. P/N 13-12935..... $55.00

DEOHAKO IPAD MINI PILOT SUCTION MOUNT

iPad Suction Cup Mount is a compact, aviation mounting system that mounts to the aircraft window quickly and economically. Enables quick mounting to the inside of the windshield in front of the co-pilot's seat or to the left of the pilot's seat. Very strong, and can withold pressure from flying, turbulence, and heavy weight. Requires the Deohako Connection Case to cradle your iPad. P/N 13-12931..... $70.00

DEOHAKO IPAD MINI PILOT NOTEBOOK

The iPad notebook is one of Deohako's iPad attachments that works with the Twist-and-Click connection. Fits snugly around the Deohako iPad Case, with dimensions that just exceed the iPad form factor. iPad NOT included.

P/N 13-12937..... $30.00

DEOHAKO IPAD MINI PILOT COMBO MOUNTING KIT

iPad mounting kit provides the pilot with Winshield to yoke mounting and more. When you are done flying, remove the suction cup, and use it on the go. It is the only iPad Pilot Case on the market that can be used for various aviation mounts, but also for your everyday life. Use the various mounts at home as a versatile stand at work, home or on the go. In the box: • iPad Connection Case• Yoke Mount• Kneeboard / Headrest Mount• Durable Suction Cup Mount. P/N 13-12927.....$140.00

PS

IPRO AVIATOR KNEEBOARD

The all new iPro Aviator kneeboard for the Apple iPad brings added features and a new low price. Featuring: • FlipOver Writing Surface • Rubber Foam Internal Padding • Foldout Kickstand for Desktop Use • Acts as Compact Carrying Case • Accomodates both the iPad 1, 2, 3, & 4.

Black.....P/N 13-09886..... $69.95

SPINCLIK IPAD MOUNT

The SpinClik is a rugged, lightweight mounting system designed for the iPad. This unique design allows the iPad to be mounted in autos, trucks, aircraft, RV's and boats. Features: • Weighs under one pound • Rotates 360 degrees with locking stops every 90 degrees • Rotates right to left and left to right • Fitted with a modified PanaVise 685-PM quick disconnect • Low cost • Fits all AMPS pattern mounting systems of different makes • Comes completely assembled ready for install. • Will fit with most third party iPad protective covers installed. • Fits the following sub mounts: In-Dash (make model specific), Vacuum (809-AMP), Post (Slimline 717-06, 717-09, and 717-12), Flex (797-10, 797-12 and 797-14), Wall ("J" box cover plate and Universal) .....P/N 13-09885..... $43.75

IPAD KNEEBOARD

The hard outer shell is excellent for keeping your iPad looking new at all times. Designed with function in mind the kneeboard has a built-in storage cubby for Mini Mag Lite, iPad stylus, and pen/pencil. It's the epitome of a virtual office. Features: • Constructed With High Performance Polycarbonate Material • "Comfort Curve" For Ergonomic Fit And Superior Stability • Adjustable Leg Strap For Tight But Comfortable Fit • Easy to Install With Simple Snap On/Off Design • Canted At The Top For Line Of Sight Viewing By User • Convenient Built-In Storage For A Mini Mag Lite, iPad Stylus And A Pen/Pencil • Slim Lightweight Design For Easy Storage. For Generation I iPad Only .....P/N 13-08297..... $69.95

THE APPSTRAP FOR IPAD MINI

Comes with a unique tilt pad that can be positioned to enhance viewing and remove annoying glare. A low-profile, high-quality, and versatile kneeboard mount at a reasonable price. Note: Product received will be strap & skin only. This is not a kneeboard, only a strap & skin that your iPad mini fits in. ....P/N 13-12709..... $38.95

APPSTRAP TILT PADS

The original tilt-pad will convert any device or case into a kneeboard. Heavy-duty leg strap. Velcro joint. 2 Tilt Pads.....P/N 13-12954..... $15.95

APPSTRAP CONVERSION KIT

Turn any tablet into a kneeboard with our DIY kit! Die cut velcro joint. Compatible with most covers/skins. Portrait or Landscape. Instantly share or stow. .....P/N 13-12953..... $29.95

GENESIS 2 - IPAD2 / IPAD3 KNEEBOARD & CASE

Soft hinge design allows the front cover to fold behind flat to minimize yolk interference and allows access to the headphone port when closed. Camera holes for the forward and rear facing cameras allow access for Facetime TM, photos or video. Lastly, the new location of the microphone is accounted for and is left open for clear recording of sound during video use. Made of ultra-durable ballistic nylon material on the exterior, and lined with brushed suede microfiber to pamper the iPad surfaces. Loops on the sides are for small pens or pencils. When not flying, the case converts into an iPad stand with unlimited angle adjustments for viewing. .....P/N 13-11465..... $26.95

GENESIS X IPAD ROTATING KNEEBOARD / CASE

Made to fit all generations of iPads and port locations. Main frame is made of tough ABS and the corners made of Polyurethane. The frame is contoured around the rear camera and the front camera is completely unobstructed to allow access for Facetime TM, photos or video. Size: 10" x 7.8" x 1".

P/N 13-12391..... $33.50

GENESIS IPAD CLIPBOARD ADD-ON

A sturdy 3001 grade aluminum clipboard is riveted to a soft velvet backing to protect your iPad touch screen. Pen holder at the top. This is an add-on accessory for the genesis and genesis 2 iPad cases. Not a standalone kneeboard.

P/N 13-14734..... $24.75

IPAD KNEEBOARD PRO

Made of anodized aluminum that is strong and lightweight. It is a form fitted case that is padded with a layer of foam that holds the iPad securely in place. Its cut-out design provides access to all of the iPad's ports, buttons and controls. Wide elasticized removable velcro strap, allows the case to be held securely and comfortably to your leg. There are four rubber pads on the rails that allow the case to sit on a desk or table securely as well. The iPad and clipboard are not included.

Black Generation 1 iPad P/N 13-09417.....$169.00
Black Generation 2/3 iPad.....P/N 13-10003.....$169.00
Silver Generation 1 iPad P/N 13-09416.....$129.00
Silver Generation 2/3 iPad.....P/N 13-10002.....$169.00

IPAD KNEEBOARD PRO C

Designed to accommodate all preferences for how you like to use it - both right and left hand, attached to the right or left leg, as a traditional kneeboard or as a lap desk. The choice is yours. Includes a specialized clipboard that adheres on the outside or inside of the case. This allows you the choice and flexibility to carry and take notes in-flight. Note:The iPad is NOT included.

Black Generation 1 iPad P/N 13-09415.....$199.00
Black Generation 2/3 iPad.....P/N 13-09996.....$199.00
Silver Generation 1 iPad P/N 13-09414.....$199.00
Silver Generation 2/3 iPad.....P/N 13-09999.....$199.00

MYGOFLIGHT PRO C BUNDLE

The MyGoFlight.com Flight Bag PLC Slim and the iPad Kneeboard Pro C have been bundled together for pilots to be able to have on complete package for carrying your iPad securely into the cockpit. Have extra room for screen cleaners and cloths, pens and paper. The iPad is not included. For iPad 1, iPad 2, and iPad3.

Black Generation 1 iPad P/N 13-09419.....$229.00
Silver Generation 1 iPad P/N 13-09418.....$219.00
Silver Generation 2/3 iPad.....P/N 13-10001.....$229.00

IPRO AIR COMMANDER KNEEBOARD

iPro Air Commander kneeboard for the Apple iPad Air

Features: • FlipOver Writing Surface • Rubber Foam Internal Padding • Comfortable Leg Strap • Accomodates the iPad Air.

Black.....P/N 13-15818..... $68.75
Metallic Silver.....P/N 13-15819..... $68.75

KUDO SOLAR IPAD 2/3 CASE

This KudoCase for iPad 2 has all the features the solar case by Kudo has to offer! Indoor/Outdoor Solar Power giving you up to an average 10 days of use. An extended battery, USB Power-out charger, HDMI, Whistle Locator, Multiple Stands and the automatic Sleep/Wake feature built in. This durable case is one you can be proud of with a housing made from biodegradable grain and the worlds only indoor operating organic solar panel.

Lime Green .....P/N 13-12335..... $189.95
Black.....P/N 13-12334..... $189.95
Pink.....P/N 13-12336..... $189.95
Light Blue .....P/N 13-12338..... $149.95
Gray .....P/N 13-12337..... $189.95

IPAD OP CASE

This iPad case is referred to as the "OP" case because it serves dual-purpose, to Operate & Protect. It provides protection from normal use, handling and transport and you don't have to remove the iPad to operate it. Open it like a book and you're ready to power-up. iPad not included.

P/N 13-11597..... $44.95

PS

IPAD KNEEBOARDS

MYGOFLIGHT PRO C SYSTEM

The Pro™ C System - includes external GPS. Using the iPad in the cockpit requires a system. The iPad for access to aviation apps, charts and a wealth of information; the iPad Kneeboard Pro™ C to secure and position the iPad; an external GPS to stay connected to the satellites; The PowerDual to charge your iPad in the cockpit, or home; and the MGF iPad Flight Bag to hold the case, the accessories, the charger, pens, and paper. Included with the Pro™ C System is the Secure Clip Set, the lanyards, an iPad Anti-Glare Screen Protector and a Screen Cleaning Kit with microfiber cloth. If you would like all that the Pro™ C System contains but already have or do not want the external GPS, choose the Pro™ C System NG product instead.

Choose the iPad Kneeboard Pro™ C System in silver or black. Choose the external GPS by Bad Elf for the "Plugged" version or by Dual XGPS150 for the Bluetooth "Un-Plugged" version. Choose the iPad Flight Bag in Slim (single pocket 1" deep), Slim EX (2" deep three pocket) or Pro (largest version with room for everything a pilot needs to take with them in-flight). For iPad 1, iPad 2, and iPad 3.

For iPad 1 ..... P/N 13-11583 ..... $429.00
For iPad 2 ..... P/N 13-11579 ..... $439.00

MYGOFLIGHT PRO C SYSTEM NG

The Pro™ C System NG is the same as the Pro™ C System but excludes the GPS. Using the iPad in the cockpit requires a system. The iPad for access to aviation apps, charts and a wealth of information; the iPad Kneeboard Pro™ C to secure and position the iPad; an external GPS to stay connected to the satellites; and the MGF iPad Flight Bag Slim EX to hold the case, the accessories, pens, and paper. Included with the Pro™ C System is the Secure Clip Set, the lanyards, and a Screen Cleaning Kit with microfiber cloth. The Pro™ C System, a complete package at a special price to give you all that you need to make using the iPad in-flight work as smooth, safe and secure as possible. iPad Kneeboard Pro C is available in silver or black. Option will be given in cart during purchase. Pro C System designed for iPad2/3. System Includes: iPad Kneeboard Pro™ C, PowerDual charger kit, MGF iPad Flight Bag Slim EX, or Pro, Secure Clip Set and lanyards, iPad Anti-Glare Screen Protector, Screen Cleaning Kit. iPad Flight Bag Slim EX Dimensions: 12" W x 8.75" H x 2" D.

iPad 2/3 ..... P/N 13-11582 ..... $349.00

MYGOFLIGHT PRO C BUNDLE / PLC SLIM EX & KNEEBOARD

Bundle designed for iPad2/3. The MyGoFlight (MGF) iPad Flight Bag and the iPad Kneeboard Pro™ C have been bundled together for pilots to be able to have a complete package for carrying your iPad securely into the cockpit. Have extra room for your charger, external GPS, screen cleaners and cloths, pens and paper. The iPad Flight Bag Slim EX is a three pocket, slim but expanded version of the iPad Flight Bag Slim. Choose the iPad Kneeboard Pro™ C in silver or black. This is a deluxe package for the ultimate in protection and carrying convenience.

Black ..... P/N 13-11577 ..... $225.00
Silver ..... P/N 13-11578 ..... $206.95

MYGOFLIGHT IPAD 2/3 KNEEBOARD FOLIO

The iPad Kneeboard Folio™ (excluding clipboard) is the perfect high quality leather, rotating aviation kneeboard, lapboard and everyday case for your iPad 2 and iPad 3. All of the ports and controls remain accessible so the iPad can be charged, synced and controlled when it is in its case. Designed to accommodate both right and left hand, attached to the right or left leg, as a traditional kneeboard with the clipboard on the outside or as a lap desk.

Black ..... P/N 13-12413 ..... $139.00
Chocolate ..... P/N 13-12415 ..... $139.00
Red ..... P/N 13-12414 ..... $139.00
Tan ..... P/N 13-12416 ..... $139.00

MYGOFLIGHT IPAD FLIGHT BAG PLC PRO

The Flight Bag PLC™ Pro is for the pilot wanting to move from a conventional flight bag to one for the "Paperless" cockpit. It has a specially designed, airport check-point friendly protective pouch to hold an iPad, laptop computer or many other electronic flight bag devices. All of the compartments are easy to see into, making it simple to find what you are looking for. There is room for everything a pilot needs to take with them in-flight. The Flight Bag PLC™ Pro bag is designed by pilots for pilots to be the ultimate flight bag for all aviators. This bag gives you the style, storage, organization, compact size and functionality like never offered before. P/N 13-11594 ..... $179.00

IPAD KNEEBOARD SPORT

The iPad Kneeboard Sport is designed for the pilot looking to secure their iPad on either leg, who needs the minimal case, but still wants a very secure fit. In black, soft to the touch polycarbonate, the Sport adds protection and great feel to the iPad. The iPad Kneeboard Sport was designed for pilots by pilots. It is designed to work in aircraft where space is tight or where there is a cyclic, or control stick being used between the legs. It is perfect for pilots of helicopters, sport aircraft, and when there is tight yoke clearance. Features: • The iPad Kneeboard Sport is made of black, soft-to-the-touch polycarbonate and is strong and lightweight. It is a form fitted case that holds the iPad securely in place. The cut-out design provides access to all of the iPad's ports, buttons and controls. The Sport is compatible with Apple's Smart Cover. • There are two aluminum rails on the underside of the case that frame your leg and, with the wide elasticized Velcro strap, allows the case to be held securely and comfortably to your leg. There are four rubber pads on the rails that allow the case to sit on a desk or table securely as well. • It is designed to be thin with a removable cover so as to be clear of the yoke, cyclic or control stick. It has a sleek look when used outside of the plane. • The removable knee strap can be left in the plane leaving you with a beautiful, sleek case for every day use.

iPad 1 ..... P/N 13-11197 ..... $99.00
iPad 2/3 ..... P/N 13-11310 ..... $99.00

ASA IPAD PORTFOLIO KNEEBOARD

The iPad Portfolio Kneeboard is the ideal stylish multitasking kneeboard, binder, and versatile cover. It is functional and durable and protects your iPad in flight and on the ground making it your favorite cockpit companion.

Fits the iPad, iPad 2, and New iPad (iPad 3).

The inside sleeve holds your iPad securely on the right side with full access to iPad controls and button. The left side has pockets to store your documents and provides a writing surface. The elastic strap secures the binder-like case to your leg for inflight use and is easily removable for everyday use. The cover folds into a flap to serve as a vertical or horizontal desktop stand providing easy landscape viewing and full keyboard access. Beautiful black leatherette with embossed wings. Height: 9-11/16", Width (closed) 7-15/16", Width (open) 15-15/16". ..... P/N 13-11337 ..... $48.95

AIRGIZMO IPAD KNEEBOARD

The AirGizmo iPad Kneeboard allows accessing charts and apps on the iPad or iPad2 while flying easier and safer than ever. Molded plastic and a wide velcro strap allow for a secure, comfortable fit. Fold over tablet holder drops out of the way when not in use. Ability to adjust the angle of the iPad for best viewing angle and the ability to cut down glare. Designed to work with both the iPad and the iPad2. Width: 7.93 in.. Height: 9.79 in.. Depth: 3.75 in. Weight: 13.1 ounces.

P/N -13-11218 ..... $133.95

MYGOFLIGHT IPAD 2/3 KNEEBOARD FOLIO C

The iPad Kneeboard Folio™ C (including clipboard) is the perfect high quality leather, rotating aviation kneeboard, lapboard and everyday case for your iPad 2 and iPad 3. The iPad is held by a form fitting rotating cradle that your iPad simply clips into. All of the ports and controls remain accessible so the iPad can be charged, synced and controlled when it is in its case. The built-in stand feature enables you to prop your iPad at almost any angle. When the stand is not needed it stores neatly against the case and turns into the case's closure system. This keeps the front of the case closed and your iPad screen is protected when not in use.

Black ..... P/N 13-12411 ..... $169.00
Red ..... P/N 13-12410 ..... $169.00
Chocolate ..... P/N 13-12409 ..... $169.00

IPRO AVIATOR MINI KNEEBOARD

The iPro is specially designed (and patented) for protection and yoke clearance. It touches none of the buttons on your iPad, yet shields them from accidents. Inside, flush riveting and padding ensure that your iPad receives maximum protection at all times. Features: • Removable 2-sided flight desk • Steel clipboard clip • Integrated kickstand • Internal rubber padding • Easy access to all iPad controls and parts.

Black ..... P/N 13-15961 ..... $68.75
Silver ..... P/N 13-15962 ..... $68.75

PS

IPAD ACCESSORIES

THE APPSTRAP FOR IPAD

Converts the iPad or iPad2 into a pilot kneeboard. iPad™ instantly detachable from leg strap via Velcro™ joint. Great for flight crews who must share or stow device. Change between portrait & landscape effortlessly. Made of high-quality Aluminum & professional grade webbing.

iPad 1 ..... P/N 11-10398 ..... $47.95
iPad 2/3 ..... P/N 11-10399 ..... $54.75

APPSTRAP IPAD GEL CASE 2/3

The original AppStrap now with a Gel case. TPU Gel Case. Fits the iPad2 & iPad3. Instantly share, stow or reposition.

P/N 13-12952 ..... $44.95

APPSTRAP FOR IPAD AIR

Approximately .75 inches thick. It works with the Otterbox Defender series, Griffin Survivor Series, and Gumdrop Drop Tech Series. Product includes black, form-fitting protective gel case, adjustable leg strap and buckle, and 2 Tilt Pads for glare reduction and stability

P/N 13-15458 ..... $45.75

THE APPSTRAP 5

Fits most tablets (8" - 10") when used with large protective case (Not Included) Cases: Otterbox Defender, Gumdrop Droptech, Griffin Survivor.

P/N 13-14753 ..... $47.85

G-FORCE MOUNT FOR APPLE IPAD

The G-Force GF260 iPad Mount is everything you need to re-take control of your cockpit and restore confidence to your passengers. Your passengers? You bet! What are they thinking while you're fiddling with that thing in your lap. The G-Force GF260 iPad Mount comes complete: with a custom-designed cradle, tailored to your iPad-1 or iPad-2, secured to the remarkable G-Force GF2 Twin base.

P/N 11-10741 ..... $64.75

IPAD DOUBLE SUCTION CUP MOUNT

The Fat Gecko iPad Mount uses industrial grade locking suction to secure your iPad to any smooth surface in or around your cockpit View fight plans, maps, weather and more. Non damaging and 100% removable. Mounts to glass, plastics, metal and other smooth surfaces. Adjustable ball head rotation and extension. Hands free viewing & operation. Holds securely, even in turbulence.

iPad 1 Dual Mount (2 suction cups) ..... P/N 11-10018 ..... $77.75
iPad 2 Dual Mount (2 suction cups) ..... P/N 11-10020 ..... $99.75
iPad 1 Mini Mount (1 suction cup) ..... P/N 11-10017 ..... $53.75
iPad 2 Mini Mount (1 suction cup) ..... P/N 11-10021 ..... $55.75

HAND-E-HOLDER™

The Hand-e-holder™ allows you to hold and view your iPad™/tablet device comfortably in your hand, while providing a 360 degree rotation. The Hand-e-holder™ is the key component to using all the other accessories. The Hand-e-holder™ comes with the portable Mini Stand. The Mini Stand is clear acrylic and utilizes the Hand-e-holder™ strap and hand plate to give you 6 viewing positions. The Mini Stand still allows for the Hand-e-holder™ to rotate 360 degrees.

Hand-E-Holder ..... P/N 13-11553 ..... $37.50

Accessories

Hand-E-Holder Rectangle Stand ..... P/N 13-11551 ..... $45.99
Hand-E-Holder Leg Strap kit ..... P/N 13-11548 ..... $49.75
Hand-E-Holder Adapter Plate ..... P/N 13-11549 ..... $19.99

IPAD AVIATION ACCESSORY KITS

This affordable accessories kit contains products you will need to start using your iPad in the cockpit. Our kit includes a Dual Universal XGPS150 receiver, a Genesis iPad nylon kneeboard and case, and a Lonestar 2 amp 12V/24V charger. We supply a premium charger which charges iPads, iPhones, iPods, etc. even during heavy use.

iPad 1 Kit ..... P/N 11-10452 ..... $180.40
iPad 2 Kit ..... P/N 11-10453 ..... $175.85

EPILLOW™

Comfortable: Use your iPad or Touch Screen Tablet comfortably anywhere, anytime, even sitting in bed or on the couch. With ePillow, you won't get tired of holding your tablet and it's perfect for reading or watching movies with a friend. Convenient: Whether you want to play a game or do some typing, ePillow has you covered. ePillow has an adjustable viewing angle that fits your tablet in both portrait and landscape modes. Portable: Great for use on the go. ePillow will make using your iPad or Touch Screen Tablet comfortable in any environment. ePillow is perfect for travel whether flying or driving. Most tablets fit the ePillow with or without a case.

ePillow works with: iPad 1 and 2, Samsung Galaxy Tab, Motorola Xoom, Acer Iconia A500 Tab, LG Optimus Pad, HP Touchpad, Android Toughbook Tab, Sony Tab S, Asus Transformer Prime, ePad, and even books!

P/N 13-11567 ..... $28.95

IPAD PLC SLIM EX BAG

The MyGo Flight iPad PLC Slim EX Bag's soft, durable and water-resistant fabric protects and cushions your iPad. Small enough to fit inside your regular carrying case, but tough enough to use by itself. Heavy duty, comfortable strap to carry by hand. Large front exterior pocket for AC adapter and other accessories. Size: 12" W x 8.75" H x 2" D. P/N 13-11324 ..... $29.00
Secure Clip ..... P/N 13-11325 ..... $7.65

IPAD ANTI-GLARE SCREEN PROTECTOR

Protect your iPad 2 from scratches and reduce glare with the MyGoFlight Screen Protector. Easy to apply and does not add any image distortion. Retains smooth feel to the touch.
NOTE: Not compatible for the iPad 3

iPad 2 ..... P/N 13-11323 ..... $24.90

AIRGIZMOS IPAD PANEL DOCK (GEN 1, 2, & 3)

If you need to mount your iPad in your plane this might be the solution you are looking for. The base mount is designed to be screwed to a panel using a standard instrument mounting holes. The iPad snaps in and is held securely.

P/N 11-10830 ..... $98.50

MYGOFLIGHT SCREEN CLEANING KIT

This Screen Cleaner Kit is a special glass wax used to clean and protect the screen of your iPad. It can also be used on other glass surfaces such as eye and sun glasses, computer monitors, and aircraft avionics. It includes a microfiber cloth and a special glass wax formulated to remove fingerprints and leave a layer of protection from dust. Kit Includes: Glass Wax, and Microfiber Cloth. ..... P/N 13-10427 ..... $9.50

MONORAIL IPAD MOUNTS

Monorail iPad Mount. This mount naturally displays the iPad in either a deployed or stowed position with one-hand tension control and multi-directional adjustability. Available for the iPad II and iPad III with long and short arm options. iPad not included."

iPad II Short Arm ..... P/N 13-12353 ..... $178.75
iPad II Long Arm ..... P/N 13-12362 ..... $182.75
iPad III Short Arm ..... P/N 13-12363 ..... $182.75
iPad III Long Arm ..... P/N 13-12364 ..... $182.75

POWER IBOX FOR IPAD2

Power iBox fits like a second skin for the iPad2 all the while providing protection and power without adding bulk. Equiped with an 8,000mAh lithium polymer battery, the Power iBox packs enough charge to double iPad2's battery life. Its low profile casing provides durable protection against drops or mishaps while its silver finish and stylish design adds personality to the iPad2. iPad2 Not Included.

P/N 13-11684 ..... $129.99

PS

IPAD ACCESSORIES

OTTOPILOT UNIVERSAL TABLET HOLDER

The Ottopilot Universal Tablet Holder creates a hands free environment. The sleek ergonomic design is made from high impact plastic and aluminum that offers superior strength & durability. The Ottopilot curved base is ideal for use on any Leg, Desk, Headrest, and More. The Push-Button Hinge offers the ultimate experience for tablet users, providing a full tablet spin and three-tilt positions for a perfect tablet view. The Ottopilot platform contains dual spring loaded arms that will expand to fit over 50+ tablet sizes, including such popular brands as all Apple iPad Generations, Kindle Fire, Nook, Samsung and many more! The platform arm design allows for easy access to charging ports, headphone jack, camera, and tablet buttons. The platform and curved base also contain a 1/4" Mounting Insert for easy windshield mounting with most suction cup brands. Twist and pull on Ottopilot Platform to detach for easy tablet storage in any bag.

Blue Curved Base ..... P/N 13-14944 ..... $79.99
Black Curved Base ..... P/N 13-14945 ..... $79.99

AVPAD IPAD KNEEBOARD

The AvPad is completely reversible for left or right-handed pilots, and can be used on either leg. The iPad can be inserted upside down (home button on the top) to allow for a GPS to be connected to the docking port. You can make either the iPad or note pad primary surface.

You still have access to all iPad ports and buttons (slide lock is partially covered), regardless of which way the iPad is inserted into the kneeboard. Two elastic straps on inside cover will hold a note pad, chart, approach plates, checklist, or any combination. A Velcro tab on the inside cover allows you to keep the iPad open on a tabletop for viewing presentations or watching a movie.

P/N 13-11691 ..... $75.00

EXECUTIVE IPAD KNEEBOARD KIT

This is the premium iPad kneeboard for the executive aviator on the go. Take it with you on land or in the air. This innovative, 3-in-1 iPad mount can be used as a standalone, or be clipped onto a kneeboard band to be used as a kneeboard. Use the optional RAM adapter and clip onto your RAM mount without changing mounting cases!

P/N 13-12765 ..... $59.95

EXECUTIVE IPAD MINI KNEEBOARD KIT

This is the premium iPad Mini kneeboard for the executive aviator on the go. Take it with you on land or in the air. This innovative, 3-in-1 iPad mount can be used as a standalone, or be clipped onto a kneeboard band to be used as a kneeboard. Use the optional RAM adapter and clip onto your RAM mount without changing mounting cases!

P/N 13-12766 ..... $47.95

EXECUTIVE IPAD CASE

This is the premium iPad case for the executive aviator on the go. Take it with you on land or in the air. Rotating case - view your iPad in landscape or portrait mode. Landscape folding cover - the cover closes even in landscape mode.

P/N 13-12774 ..... $32.95

EXECUTIVE IPAD MINI CASE

This is the premium iPad Mini case for the executive aviator on the go. Take it with you on land or in the air. Rotating case - view your iPad in landscape or portrait mode. Landscape folding cover - the cover closes even in landscape mode.

P/N 13-12775 ..... $32.95

EXECUTIVE IPAD KNEEBOARD KIT ACCESSORIES

Includes strap and Ram adapter.

P/N 13-12776 ..... $16.95

IPAD UNDERMOUNT STOWAWAY

The iPad Stowaway will stow the iPad just below the panel and it can be pulled out for use and then pushed back under the panel when not needed, such as flight time when critical information is not needed from the iPad . The stowaway has a hood option that when not in use, lays down on top of the iPad and stows under the panel with the iPad . P/N 13-11702 ..... $169.95

MYGOFLIGHT SPORT ADAPTER

This accessory is used to mate Sport™ and Sport™ NR cases to any existing RAM mount or RAM equivalent installation that will accept a 1" ball. P/N 13-12419 ..... $39.00

MYGOFLIGHT SPORT MOUNT YOKE

The iPad Sport™ Mount - Yoke is for pilots who want to clamp their iPad Sport™ NR or iPad Kneeboard Sport™ case on the yoke of their airplane or similar pole like surface.

P/N 13-12420 ..... $69.00

MYGOFLIGHT SPORT MOUNT BEECH YOKE

The iPad Sport™ Mount - Yoke Beech is for pilots who want to clamp their iPad Sport™ NR or iPad Kneeboard Sport™ case on the yoke of their Beechcraft airplane or similar large pole like surface. This mount comes with a Sport™ Adapter with RingO mounting system.

P/N 13-12421 ..... $69.00

MYGOFLIGHT SPORT MOUNT GLARE SHIELD

The iPad Sport™ Mount - Glare Shield is for pilots who want to mount their iPad Sport™ NR or iPad Kneeboard Sport™ case off a glare shield or other shelf like surface. This mount comes with a Sport™ Adapter with RingO mounting system. P/N 13-12422 ..... $69.00

MYGOFLIGHT SPORT MOUNT SUCTION CUP

The iPad Sport™ Mount - Suction Cup is for pilots who want to mount their iPad Sport™ NR or iPad Kneeboard Sport™ case off a glass windshield or other smooth surface. This mount comes with a Sport™ Adapter with RingO mounting system The mount is portable and can easily fit in your flight bag or can be positioned and left on-board. Perfect for owners and renters alike. P/N 13-12423 ..... $73.75

MYGOFLIGHT IPAD 2 / 3 SCREEN PROTECTOR & CLEANING KIT

Screen Cleaner - The Screen Cleaner can also be used on other glass surfaces such as eye and sunglasses, computer monitors, and aircraft avionics. It includes a microfiber cloth and a special glass wax formulated to remove fingerprints and leave a layer of protection from dust. Anti-Glare Screen Protector - Selecting a screen protector for your iPad is a difficult task. Pilots need to protect the screen from scratches and reduce glare which can make the screen difficult to read. However, not all screen protectors are created equally. We tested over 20 different protectors to find one that was easy to apply, reduced glare, did not add any image distortion and retained a smooth feel to the touch. A total of two screen protectors come in each pack P/N 13-12396 ..... $32.99

ASA IPAD KNEEBOARD WITH COVER

A multitasking kneeboard that is both functional and durable. This new iPad Kneeboard joins the iPad Portfolio Kneeboard in giving pilots greater flexibility to choose the "digital kneeboard" solution that's best suited for them. The iPad Kneeboard is a versatile case and kneeboard that helps pilots protect and use their iPad in flight and on the ground. The elastic strap secures the case to the pilot's leg for in-flight use. The unique plastic cover keeps the iPad screen safe while maintaining full viewing and complete touch-screen functionality, and opens easily to insert or remove your device. The easel folds to position the iPad at a convenient "wedged" viewing angle; alternatively, it can lay flat. The pocket on the back offers room for papers and maps. Openings are provided for charger and headphone/earbuds. Made of durable fabric with embossed wings. Fits the iPad, iPad 2, and New iPad (iPad 3). Features: • Easel folds up or down for optimal viewing and pocket provides access to charts and papers • Dock connector / power port accessible with the cover closed • Openings are provided for charger and headphone/earbuds • Fits both iPad, iPad 2, and New iPad (iPad 3) • Pocket on back offers room for papers and maps.

P/N 13-11701 ..... $24.95

PS

IPAD ACCESSORIES

MYGOFLIGHT EXTENDED SUCTION CUP

Requires separate purchase of the iPad Sport™ or Sport™ NR case. The Extended Suction Cup Mount is for pilots who want to mount their iPad Sport™ NR or iPad Kneeboard Sport™ case off a glass windshield or other smooth surface while using the least amount of space. This mount comes with a Sport™ Adapter with RingO mounting system and all other necessary pieces and parts so that the mount can be installed in a variety of ways.

P/N 13-12424 ..... $107.00

MYGOFLIGHT SPORT ADAPTER WITH TILT SWIVEL

The Sport™ Adapter with the Tilt and Swivel adds flexibility in positioning the iPad Kneeboard Sport and Sport NR - iPad on any mount. The adapter can tilt up to 90 degrees. Includes the RingO mounting system which quick-connects the Sport™ and Sport™ NR cases to our various mounts by RAM. P/N 13-12425 ..... $79.00

MYGOFLIGHT SPORT MOUNT COMPACT SUCTION CUP

The iPad Sport™ Mount - Compact Suction Cup is for pilots who want to mount their iPad Sport™ NR or iPad Kneeboard Sport™ case off a glass windshield or other smooth surface while using the least amount of space. This is especially useful when using the mount on a side window close to the pilot. Each of these mounts comes with a Sport™ Adapter with RingO mounting system. The Sport Adapter with Tilt & Swivel option (included), adds flexibility in how the iPad is positioned. The adapter can tilt up to 90 degrees. The mount is portable and can easily fit in your flight bag or can be positioned and left on-board. Perfect for owners and renters alike. P/N 13-12426 ..... $99.00

MYGOFLIGHT SPORT MOUNT HEADREST

Now you can secure your iPad for use in the back seat of your car with the Sport Mount - Headrest. Requires the iPad be in either the iPad Kneeboard Sport™ or Sport™ NR - iPad case available separately. The iPad, once secured to the headrest, can be viewed either horizontally or vertically and can be tilted vertically to accomodate different heights. It is the safest choice if you want to use your iPad as a rear seat entertainment device. The back seat passengers can easily and safely watch a video or play games. The headrest mount has a universal fitment and is designed for headrest between 4"-8" wide. The installation is quick and easy with no dismantling of the headrest. The headrest mount clamps around the headrest posts and the Sport™ case mounts to the included Sport™ Adapter. The Holder can angle 15 degrees and swivel 360 degrees.

NOTE: The Sport Mount - Headrest is only the mount. You must already have or order separately the Sport™ or Sport™ NR case. Sold separately. P/N 13-12427 ..... $69.00

MYGOFLIGHT SPORT MOUNT GULFSTREAM

We have taken the iPad Sport Mount-Gulfstream and bundled it with your choice of either the Sport NR case or iPad Kneeboard Sport. This package gives pilots a complete solution for securely mounting the iPad to the steering column of any Gulfstream jet that has the wedge mount used for mounting a clipboard. Utilizes the quick-connect Sport™ Adapter with RingO mounting system to allow the user to easily rotate the iPad from portriat to landscape. Also gives you the ability to quickly disconnect the iPad from the mount while leaving it in a protective and stylish case.

P/N 13-12428 ..... $299.00

MYGOFLIGHT DUAL MICRO CHARGER

Handles up to 35 Volts! You can charge your iPad and your iPhone or iPod or any other USB powered device at the same time in the airplane/car. DualMicro is a 12 to 35 Volt airplane/auto charger and an extra charging cable in one convenient bundle. It has two USB ports that can both be used at the same time. Operates with a full 4.5 amps of charging power (2.1 and 2.4 USB sockets) which the iPad requires and provides the fastest possible charging. NOTE: For 12-35 volt DC systems.

P/N 13-15538 ..... $29.95

MYGOFLIGHT CASE BACK FOR IPAD II

The Case Back is a slim-fit polycarbonate designed to snap onto the iPad II and iPad III to provide protection on the back and corners. Also, compatible with Apples's Smart Cover. It offers a slim-fit, complete access to all ports, buttons, and camera, and adds a stylish look in a transparent clear/grey. Not available for iPad I.

Black case ..... P/N 13-12398 ..... $14.05
Black Case with discs ..... P/N 13-12399 ..... $14.05

MYGOFLIGHT SOUND MASTER BLUETOOTH MINI SPEAKER

This portable Bluetooth speaker is wireless and puts out 3W and up to 95 decibels of sound, all in a package half the size of a soda can. It is the perfect travel accessory for anyone that wants great sound but is tight on space. Compact size will easily fit into your flight bag or luggage for easy portability. Connects wirelessly with iPad, iPhone, iTouch, Droid or any other Bluetooth device. Lithium battery keeps the music playing for up to 8 hours. The SoundMaster also supports Micro SD cards (up to 8 GB) for automatic plug and play. The speaker has an AUX input for direct device connection - buy two speakers and a splitter cable for true stereo sound! Finally, the SoundMaster is water resistant, which is perfect for use outdoors - boating, camping, hiking, etc.

Silver Speaker ..... P/N 13-12402 ..... $89.00
Black Speaker ..... P/N 13-12403 ..... $89.00

MYGOFLIGHT NIGHT VISION CLIP

The Night Vision Clip Light is designed to put green, eye protecting light exactly where you need it when you need it. The light is illuminated by a slide-to-activate button. Can be easily attached to your clipboard by sliding it into the bracket on the clipboard. With an adjustable head that can swivel the light up or down up to 90 degrees, light can be positioned where it is needed. The batteries are replaceable.

P/N 13-12404 ..... $19.99

MYGOFLIGHT HEADSET BAG

Micro-fiber lining cleans and protects the screen while the durrable diamond stich fabric on the outside prefents ripping and tearing. The Headset Bag is made out of durable mesh with a soft, padded lining on the inside, perfect for holding anything you don't want scrached: sunglasses, phones, iPads, and eReaders. The drawstring closure makes holding all of your small items secure and easy to find.

P/N 13-12407 ..... $14.99

MYGOFLIGHT SHOULDER STRAP

Better weight distribution than carrying it by the handle. Padding and grip prevent straps from sliding off of shoulders. Easy on and off with clip-head hooks. Rotating hook heads make sure you never get tangled straps ever again! Fully adjustable for all sizes.

P/N 13-12406 ..... $19.85

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FLYBOYS GEAR FOR PILOTS

FLY BOYS PUBS BAG

Ideal for keeping things "co-located" while you're flying and mission planning. Integrates perfectly with Fly Boys kneeboards. Top opening flap gives access to the main pockets. Additional smaller external pockets are located in the front, rear as well. Handy for smaller items or for sliding enroute charts and maps for quick access. Top, front and back are secured with sturdy Velcro™. Pocket on one side for a water bottle or sunglass case. Slots on the opposite side for 2 pens or pencils. The most popular choice of most fighter and trainer pilots no matter what the airframe. Also, an excellent option for civilians looking for a no frills - priced right bag. Measures 8 1/2" x 11" x 1" empty. Fully loaded it will expand out to 8 1/2" wide!

Blue FB1020 ..... P/N 13-05565 ..... $24.95
Black FB1020 ..... P/N 13-05566 ..... $24.95

FLYBOYS MISSION PUBS - BAG

Longer and wider than the FB1020 Regular PubsBag, but not as tall. Fits everything you will ever need for your mission plus some! Three main compartments comprise this model. Two large compartments and the third is divided in the middle. No external pockets on this model, however the internal capacity is awesome. Favored by F-15E, B-1, B-2, and C-130 aircrew. It's also popular in the USAF/USN pilot training environmentOutside dimensions are 9" x 11" x 1" empty, and fully loaded it will expand to 6 1/2" wide.

Black ..... P/N 13-05622 ..... $25.95
Blue ..... P/N 13-05623 ..... $25.95
Green ..... P/N 13-05624 ..... $26.50

FLYBOYS LARGE CREW BAG

Lightweight but heavy duty bag at a fair price. Double stitching and reinforced seams are standard. Silent rubber zipper pulls. Nylon zippers are self repairing and provide a significant level of water resistance. The removeable shoulder strap has a pebbled shoulder pad unique only to Fly Boys. Keeps the bag from slipping off. All new gray interior which provides high visibility for finding items inside the bag in low light conditions. Sturdy built moveable/ removeable interior dividers. New retention sleeve for flashlights incorporated. Super tough PVC armoring incorporated into the bottom of the bag. Virtually waterproof along the bottom and provides additional protection and structure to the unit. Exterior Dimensions: 22" x 14" x 12" Main Compartment Dimensions: 16" x 11" x 11" P/N 13-05563 ..... $110.95

FLYBOYS EXTREME CARGO BAG

Cargo and Tanker crews require specialized gear for every mission. To meet their needs, Fly Boys has fielded the ultimate cargo bag meeting crew-designated specifications. Designed in conjunction with active duty and reserve KC-135R, KC-10 and C-17 crewmembers, the FB4400XCB Extreme Cargo Bag is configured to exceed every expectation in every category. If you're a crewmember on a tanker or cargo aircraft and you put your gear through extreme punishment, then you've found the best constructed and configured bag available. Main compartment is 16x12x12 inches. P/N 13-08081 ..... $219.00

FLY BOYS HELMET BAG

420 Denier Cordura Nylon with 1/2" cloth poly-fill to cushion your helmet. Heavy duty nylon zipper - resists snags. Two interior pockets WITH VELCRO CLOSURE that fit your DTC, VTR tapes, sunglasses or water bottle. This super tight knit nylon shell is extremely water resistant and provides superior protection for YOUR expensive equipment - and the interior lining is extremely soft. Oversized from standard issue versions, it is superior for helmets with with NVG or HMS mounts! Two NEW pockets for smaller items. Comes with an exact color matched, adjustable shoulder strap fitted with a gripping contouring rubber shoulder pad. Inside Dimensions (FLAT): 19 1/2" Wide 20" Tall.

Blue ..... P/N 13-05571 ..... $34.95
Black ..... P/N 13-05572 ..... $34.95
Green ..... P/N 13-05573 ..... $34.95

FLY BOYS IFR/VFR KNEEBOARD

Features seven eyelets for securing checklists, plastic checklist pages or your in-flight guide - (every base has different spacing.Includes the new flexible plastic clipboard (FB1060).Eyelets also correspond to JEPPESEN approach plates and chart protectors!!.....
Folded: 6.5" X 1.5" X 9.5" Unfolded: 10" X 8.5" X 1"
Writing Surface Area: 8" X 5"

Blue ..... P/N 13-05568 ..... $33.95
Black ..... P/N 13-05569 ..... $33.95
Green ..... P/N 13-05570 ..... $36.95

FLYBOYS CHECKLIST PAGES

Heavy-uty plastic FlightCrew checklist pages. Sturdy construction extends the life of these pages. Easy to use at made at a thickness that helps prevent the pages from becoming brittle or tearing in cold environments.
Pages are top loading and are great for protecting your local approaches or condensed aircraft checklist. No covers included.

Sheet Size: 8" X 5" ..... PN 13-05627 ..... $0.55
Bulk back (25 Pk.) w/ Covers ..... PN 13-05629 ..... $13.75

OVERSIZED CHECKLIST PAGES

These are great if you are ready to start putting originals in the pages instead of shrunken copies! As you can see, a full size Jeppesen chart slides right in! Now your mission data cards fit, your target photos can get more detail in them, and your attack cards slide right in without making a trip to the copier to shrink or the paper cutter to trim! These are the same construction as the regular, just bigger. Great in extreme temperatures and long lasting. Spacing on the holes matches up with the FlyBoys KneeBoard with Eyelets and Jeppesen charts.Size is 5 1/2" X 8 1/2" - really makes a difference.

Sheet Size: 8-1/2" X 5-1/2" ..... PN 13-05628 ..... $0.85

EXTRA TALL PAGES FOR BIG CHECKLIST

Heavy duty plastic FlightCrew checklist pages. Sturdy construction leads to a long life. Easy to use but heavy enough to not get brittle or tear in extremely cold environments. Pages are top loading and are excellent for protecting your local approaches or condensed aircraft checklist. USABLE interior dimensions: 5"x11", overall width including checklist ring holes 5 7/8"

Sheet Size: 5" X 11" ..... PN 13-05630 ..... $0.70

FLYBOYS HARD PLASTIC COVER SET FOR EXTRA PAGES

The new Cover Set for the FB2203 pages are great. They are perfect for protection of the pages as well as providing structure for these tall pages. Without these covers, they tend to sag due to their height. Buy as many pages as you need, as many cover sets as you need. Sheet Size: 5" X 11" ..... PN 13-05632 ..... $5.25

OVER SIZED FLIP CHART PAGES

Over sized top loading pages with three ring holes in the top for those checklists and situations that flow better than the normal "book format." Dimensions: 9.25" x 6".

Sheet Size: 8" X 5" ..... PN 13-05633 ..... $0.75
Bulk Pack (25 Pk.) ..... PN 13-05634 ..... $13.50

FLYBOYS CHECKLIST RINGS

Durable. Unbreakable. Multi-Purpose. Safe. Opaque nylon ring to hold your checklists and in-flight guides . Or use them for outdoor use where metal rings would rust or wear out. Patented ball-lock design to prevent FOD out on the flight line. The nylon ring is very low resistance as well. Once they are closed, they stay closed. When closed, they are a 2.5" diameter ring. Opened, they stretch to 5.25". For most applications 4 rings is plenty for keeping your checklists or inflight guides secure. Pack includes 10pieces.

Clear ..... P/N 13-05621 ..... $8.95/ Pack
Black ..... P/N 13-08644 ..... $9.85/ Pack
Red ..... P/N 13-08643 ..... $9.75/ Pack

FLYBOYS PILOT LOGBOOK

If you are serious about keeping track of your flight time, and operate Army or USAF rotary aircraft - this is the book you need with no question. Record your own flying history of missions, upgrades, checkrides and awards right in this beautiful and durable logbook. This book will hold at least 10 years worth of flight history.Dimensions: 9" tall x 7 7/8" wide x 1" thick

Airforce Pilots Fly Logbook ..... P/N 13-05625 ..... $29.99
Army Pilots fly Logbook ..... P/N 13-06410 ..... $29.99

FLYBOYS REMOVE BEFORE FLIGHT KEY CHAIN

This nylon strap streamer with the REMOVE BEFORE FLIGHT rubber patch is an instant reminder of the real warning flags that hang off of airplanes on the flight line. They're supposed to be visible and easy to find during the walk-around inspection. Well, now you won't have to "walk around" your house or fish through your gym bag trying to find it! ..... P/N 13-05626 ..... $4.99

FLYBOYS MAPSTRAP THIGH STRAP

adjustable to fit just about anyone and features a see-through strap with a healthy portion of hook-and-loop to keep paperwork secure. The leading and trailing edges of the lower strap feature no-slip PVC material to help keep the strap secure on your leg.

P/N 13-14943 .$23.50

PS

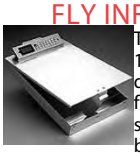
KNEEBOARDS - HOODS

PILOTS LAP DESK

This top opening aluminum lap desk provides a solid smooth writing surface with a 3/8" bottom storage compartment for charts, computers, checklists, pens, etc. Can be used vertically or horizontally designed forms and is great for left or right handed use. Size: 9.5"x12"

P/N 13-00808 ..... $29.95

FLY INFORMED KNEEBOARD/CALCULATOR



This bottom opening pilot clipboard measures 8-1/2" x 12" and features a bottom storage compartment (1-1.25" deep) for charts, computers, checklists, pens, etc. Great for vertical or horizontal forms. Heavy duty aluminum construction with solid smooth writing surface. Furnished with battery powered calculator clip for in-flight calculations. Flexible light available separately.

Clipboard/Calculator ..... P/N 13-00809 ..... $42.75
Detachable Light (clear) ..... P/N 13-00811 ..... $22.30
Detachable Light (red) ..... P/N 13-00812 ..... $22.30

ASA IFR TRI-FOLD KNEEBOARD

Strong aluminum tooled clipboard silkscreened with important IFR information fits into black 3-panel jacket. Has room for charts, books, flight computers, etc.

P/N 13-05840..... $24.85

ASA VFR TRI-FOLD KNEEBOARD

This kneeboard uses the VFR Kneeboard in a three-panel jacket. The left panel has ample room for small books, papers and oddly-shaped items. The center panel holds the kneeboard under clear plastic with a pen/pencil holder and buttonholes on either side.. The right-hand panel contains a clear pocket for easy map viewing, and the elastic leg band's Velcro closures fit any leg size comfortably. Black nylon with embroidered silver wings logo. Kneeboard is 6-1/2" wide x 9-1/2" high.

P/N 13-02712..... $24.99

BLOCKALLS TRAINING GLASSES

Designed by pilots for pilots. Blockalls™ resolve problems with existing view limiting devices. Weighing in at just under 1oz, it's easy to forget you are wearing them. Engineered to easily penetrate the seal of your headset eliminating the hassle of having to remove it first and can be worn for extended periods of time without discomfort, thanks to the soft rubber nose piece and streamlined temple tips. Tailored off center viewing also keeps more of your time inside the flight deck rather than outside. Recommended by AOPA/ Flight Training.

Color	Part Number	Price
Black	13-06240	$22.50
Aluminum	13-06241	$22.50
Pink	13-06242	$22.50

OLD FOGGIES™ IFR TRAINING GLASSES

IFR Glasses' Old Foggies™ brand view limiting device was developed in order to balance the training value of a view limiting device without further limiting the pilot from being able to read his/her charts. Old Foggies™blend of precision fogging and custom powered corrective lenses allows for the precise amount of the instrument panel viewing without any view of the horizon. Old Foggies™ are available in customizable powers with no need for a prescription. Available in Clear and Light Mirrored Tint (a reflective coating that eliminates glare without further limiting visibility). Available Powers: 1.5, 2.0, 2.5

Description	Part No.	Price
Clear Lens Fog 1.0	13-05004	$29.95
Clear Lens Fog 1.5	13-05005	$29.95
Clear Lens Fog 2.0	13-05006	$29.95
Clear Lens Fog 2.5	13-05007	$29.95
Clear Lens Fog 3.0	13-05008	$29.95
Tint Lens Light Mirrored Tint Fog 1.5	13-05009	$32.95
Tint Lens Light Mirrored Tint Fog 2.0	13-05010	$32.95
Tint Lens Light Mirrored Tint Fog 2.5	13-05011	$34.95
Tint Lens Tinted Fog 1.5	13-05012	$32.95
Tint Lens Tinted Fog 2.0	13-05013	$34.95
Tint Lens Tinted Fog 2.5	13-05014	$29.85

THE HOODY

Provides a complete view of even the most sophisticated instrument panel. Weighs less than 2 oz. Stores easily in a flight bag with the flaps folded in. The Hoody® fits most caps. No hooks, no clips, just slips on and off. Easily molds to the bill of your favorite cap. P/N 13-12753 ..... $19.95

JIFFYHOOD

A lightweight plastic hood that does the job inexpensively, Jiffyhood stows rolled up in a flight case, or even in your pocket. Has an adjustable elastic headband for comfortable fit. P/N 13-03457..... $11.95

FRANCIS IFR HOOD

Francis hood restricts your vision totally to your instruments & because its small, will not block any part of an instructors vision. Made of lightweight, shock-resistant plastic, and has cushioned face pad for comfort. Adjustable elastic headband. P/N 3362..... $22.85

JEPP SHADES

Replaces bulky, hard-to-use instrument training hoods. The improved design allows better student/instructor interaction. The Cockpit proven design works conveniently under headsets and the universal adjusting strap reduces pressure on the ears and temple. The Velcro™ strap fits comfortably and flip-up lens allows convenient IFR/VFR flight transition. The high quality polycarbonate lens is impact resistant. P/N 13-404311 ..... $25.95

FOGGLES

A creative solution to the problems caused by wearing a large hood on your head. Foggles fit and feel like glasses, but the opaque frosting on the top and sides let you see only the instrument panel. Your out the window view is always foggy. Wear them with headsets and microphone with no interference or discomfort. They come with a protective carrying case and weigh only two ounces.

Clear..... P/N 13-06500..... $19.50
Yellow ..... P/N 17-00039..... $21.95

SUPER HOOD

Ideal with eye glasses or headsets it slides in under the headset without relinquishing control of the aircraft and it can be instantly removed at any time for a safe approach or landing. Blocks outside reference but provides a full panel view to reduce vertigo. Light weight (3 oz.) and comfortable. P/N 13-30200 ..... $21.75

IFR TRAINING GLASSES

Polycarbonate Lenses (UV Protected). Adjustable frames High brow area to prevent "peeking". Opaque frosting to simulate actual IFR conditions. Protective carrying bag included P/N 13-12050 ..... $17.95

VIBAN IFR TRAINING HOOD

Weighs only 2 oz., making it easy to put on and take off during flight. Provides a perfect view of the instrument panel while providing complete occlusion forward and to the side. Even more, ViBAN folds compactly to fit in its own durable case and is easily stored in your flight bag.

Without Nosepiece ..... P/N 13-02022 ..... $38.95
With Nosepiece ..... P/N 13-02023 ..... $38.95

OVERCASTERS

Overcasters is a unique IFR training tool which clips to glasses (sunglasses or RX) in seconds. Flip-up in one easy motion for easy transition. Feather light with no straps, helmets, or hoods. Accepted by IFR examiners for checkriders. P/N 13-33799 ..... $16.85

ASA HOODWINK IFR TRAINING HOOD

Unique design easily and automatically springs open when removed from its pouch and packs away for storage with just a simple twist. Lightweight, yet durable enough to withstand the rigors of daily use. 4"x4" slim pouch is small enough to fit in a shirt pocket or in almost any flight bag compartment. Can be used with or without headsets. One size fits all. P/N 13-05620..... $15.95

CLOUD-EEZE™ IFR TRAINING GLASSES

Developed in order to balance the training value of a view limiting device without further limiting the pilot from being able to read his/her charts. Old Foggies™blend of precision fogging and custom powered corrective lenses allows for the precise amount of the instrument panel viewing without any view of the horizon. Old Foggies™ are available in customizable powers with no need for a prescription. Available in Clear and Light Mirrored Tint (a reflective coating that eliminates glare without further limiting visibility). Available Powers: 1.5, 2.0, 2.5

Cloud-eeze Clear Lens ..... P/N 13-05015..... $16.95
Cloud-eeze Tint Lens..... P/N 13-05016..... $18.95

BEST HOOD: IFR TRAINING HOOD

The 'Best Hood' is a sturdy paper hood which is amazingly simple yet very effective. Its inexpensive, it folds flat for the flight bag and is an excellent vision limiting device for instrument pilot training.Easy to use, the hood has a comfortable elastic headband and it fits easily over glasses. P/N 17-00020.....$5.85

PS

AIRCRAFT LOG BOOKS

AERO PRODUCTS AIRCRAFT LOGS

Permanent, hard cover, logs with leatherette cover printed in gold. Pages are updated to current FAA requirements. Generous line spacing. Size: 5.75"x7.75"; 74 pgs; Green cover. Comprised of 9 sections: Aircraft Description, Installed Equipment, Major Alterations, Life Limited Parts or Overhaul Requirements, AD or Factory Bulletin Compliance Record, Altimeter and Static System Checks, Radio and Electronic Checks, Maintenance Record (FAR 43.9), Inspection Record (FAR 43.11-91.217).

AF-5 Hard Cover ..... P/N 13-32385 ..... $9.95
AL-12P Soft Cover ..... P/N 13-04670 ..... $7.60

CUSTOM-BUILT AIRCRAFT OWNERS & OPERATORS MANUAL

Contains spaces for listing of aircraft description, specifications, construction data, weight and balance calculations, operating limitations, operating instructions and servicing information. (L. Pazmany) P/N 13-20100 ..... $26.75

STANDARD AIRCRAFT BUILDERS LOGBOOK

Documents a builder's work record per FAA requirements. Provides a personal record of a builder's accomplishment. Provides an expense record from start to finish. Provides documentation of a builder's source of materials and components. P/N 13-02447 ..... $19.95

ASA AIRCRAFT LOG BOOKS

Designed to keep records of the entire aircraft in order: inspections, tests, repairs, alterations, ADs, service bulletins, and equipment additions, removals or exchanges.

SA-1 soft cover-hunter green; 7.25"x 4"; 64 pgs
P/N 13-32375 ..... $4.75

SA-2 Hard cover-Hunter Green; 7.75"x 5-5/8"; 96 pgs.
P/N 13-32384 ..... $8.75

ASA AIRCRAFT FLIGHT LOG/LOG-BOOK (SP-FLT)

Spiral-bound and perfectly sized to fit in an aircraft glove box or chart pocket, this logbook is a quick reference to the recent history of the airplane so pilots have immediate access to the airplane's records. P/N 13-03163 ..... $8.95

PLANEVIEW AIRCRAFT FLIGHT LOGS

Compact and can be easily stored in a glove box or side pocket. You only have to use the categories that are important to you. The owner of a Piper Cub would not use the logbook to the extent that a Piper Mirage owner/operator would, but it can easily accommodate the needs of both aircraft. Multiple pilots can use the book, so it can be used in an aircraft that is used in partnerships, fight schools, charter and many other operations where there are a number of different pilots flying the aircraft.

Single engine log ..... P/N 13-01946 ..... $7.95
Multi-engine log ..... P/N 13-01947 ..... $7.95

AIRCRAFT TECHNICAL LOG POST BINDER

Logbooks will stay in top condition when kept in a sturdy binder. This binder is specially designed to keep any number of our maintenance logs together. The binder is a "must have" for a multi-engine aircraft that could have up to 12 individual logs. Capacity: 1 Binder can easily hold a dozen component logbooks, more than enough for a 4-engine aircraft. P/N 13-12324 ..... $34.75

AIRCRAFT EXPENSE & USAGE JOURNAL

This product is a compact 32 page journal, measures 4 ¼" tall by 2 ¾" wide, is assembled with 2 staples, and can easily fit into aircraft glove box or shirt pocket. Weight is approximately 1/2 oz. Printing is black on cover of white 67 lb cover stock paper and on pages of white 20 lb paper. Journal covers a full one year period, contains spaces for 20 transactions per month, and includes a monthly/yearly summary. Expense Journal ..... P/N 13-05056 ..... $3.95
Usage Journal ..... P/N 13-05057 ..... $5.75

EAA EXPERIMENTAL AIRCRAFT - AIRFRAME LOGBOOK

General Aircraft Record, Record of Ownership, Initial Condition, FAA Airworthiness Inspection pages. Entry pages that the owner fills in the information. Soft Cover 54 pages. Revised 2012. This logbook was developed to meet the special requirements of experimental aircraft. P/N 13-12860 ..... $6.95

AERO PRODUCTS ENGINE LOGS

Permanent, hard cover, logs with leatherette cover printed in gold. Pages are updated to current FAA requirements. Generous line spacing. Overall dimensions: 5.75"x 7.75"; 74 pages; Red cover. Comprised of 8 sections: Engine Description, Installed Record, Life Limited Parts or Overhaul Requirements, AD or Factory Bulletin Compliance Record (propeller or rotor only), Repair and Inspection Record (propeller or rotor only)

EF-5 Hard Cover P/N 13-32390 ..... $10.85
EL-13P Soft Cover ..... P/N 13-03811 ..... $6.50

ASA ENGINE LOG BOOKS

Keep track of engine inspections, tests, repairs and alterations, airworthiness directives, manufacturers' mandatory service bulletins & equipment removal or exchange. Color: Burgundy

Hard Cover (7.75" x 5-5/8") 96 pages ..... P/N 13-32382 ..... $8.95
Soft Cover (7.25" x 4"). 64 pages ..... P/N 13-32380 ..... $4.75

EAA LOGBOOKS

Engine Log ..... P/N 13-02253 ..... $8.50
Propeller Log ..... P/N 13-02255 ..... $7.55

ASA AIRCRAFT FLIGHT LOG

The ASA Flight Log is the perfect tool for aircraft owners and aircraft flown by multiple pilots to keep track of the care and use of an individual aircraft. Spiral bound and perfectly sized to fit in an aircraft glove box or chart pocket. Logbook pilots will have quick reference to the recent history of the airpance without digging through those usually kept in the maintanance hangar. P/N 13-03163 ..... $8.95

ASA PROPELLER LOGBOOK

Record data for hub & blade inspections, repairs and alterations, airworthiness directives, & factory bulletins. Soft cover, Black, 7-1/4" x 4", 20 pages.
P/N 13-32370 ..... $3.95

ASA AVIONICS LOG BOOK

Includes entries for avionics equipment, VOR accuracy, transponder & ELT checks, AD & SB compliance, maintenance records. Soft cover, blue/gray, 7.25"x4", 64 pgs.
P/N 13-02315 ..... $4.75

ASA AMT LOG BOOK

Designed for Maintenance Technicians, IA-qualified mechanics, and students to log training and educational requirements, work performed, and experience for the purpose of tracking for future certification, recurrence, employment applications, school records, or insurance applications. Plastic coil binding stays open on current page. Soft cover, 6 1/2" X 11", 192 pages. P/N 13-02313 ..... $13.50

AIRCRAFT JOURNEY LOG

This is the full-size, hard-cover format (8.5" x 11") new Journey Log. 25% more pages! It has been designed to meet the requirements of the Canadian Aviation Regulations. As permitted by the CARs. There is now a page for Weight & Balance data at the front of the log. When open, the Journey Log pages lie flat to allow for easy data entry.
P/N 13-12323 ..... $34.75

AIRCRAFT TECHNICAL LOG SECTION 1 AIRFRAME

The Airframe Log (Section 1) is used to record details of airframe flight hours and related maintenance tasks. Three-hole drilled for keeping in a ring binder or Tech Log Book. Vary the number of engine and prop volumes for multi-engine aircraft. The 5 sections are ordered separately, depending on the number of engines, props, etc. Each tech record can be bound with all the others into the Tech Log Binder to make up the complete aircraft Technical Record. When bound together, the entire log is almost indestructible, yet each record can be removed easily for updating at any time.

Log Section 1 Airframe ..... P/N 13-12325 ..... $14.50
Log Section 2 Record Of Installations ..... P/N 13-12326 ..... $8.95
Log Section 3 Engine ..... P/N 13-12327 ..... $11.95
Log Section 4 Propeller ..... P/N 13-12328 ..... $11.95
Log Section 5 Component ..... P/N 13-12329 ..... $8.95
Log Post Binder ..... P/N 13-12324 ..... $34.75

PS

PILOT LOG BOOKS

JEPPESEN PROFESSIONAL LOGBOOK

This professional log book from Jeppesen, measuring 6-1/2" x 11" is constructed of sturdy, easy-to-read ledger paper & includes an elegant cover.

P/N 13-21728.....$29.95

JEPPESEN PROFESSIONAL EUROPEAN LOGBOOK

Complies with JAR 1.080 regulations for logging flight time in Europe. handles 10 years of data. Size: 17.1 x 28.6 cm P/N 13-02212.....$29.80

JEPPESEN PILOT LOGBOOK

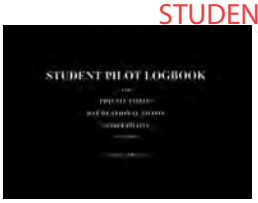
Our 96-page permanent record offers large flight time category spaces, arranged according to FAA regulations. Printed on "easy-eye" green pages that resist "bleed through". Size: 8-5/16" x 5-5/16" P/N 13-21732.....$13.95

LITTLE PILOT LOGBOOK

The Little Pilot Logbook is the perfect gift for the aviation enthusiast. Record treasured stories and precious favorites, display adorable pictures and store mementos in this spiral bound 8.75" x 5.75" hard cover book that lays flat for easy entry and portable enough to carry with our on your next journey. This keepsake will be treasured not only by the parent but also by the future aviator that receives it as a record of childhood memories of flight.

P/N 13-08051 ..... $24.95

STUDENT PILOT LOGBOOK



This Logbook is designed for Student Pilots preparing for Private, Sport, and/or Recreational Pilot licenses. The student's learning progress is comprehensively tracked from his first flight to his last prior to his completion ride. There are upwards of fifty (50) critical areas of airmanship presented and tracked per flight. These areas range from take-offs, flight maneuvers, to landings. Discussion time is also tracked along with ground school briefing subjects. The Student Pilot and Flight Instructor can quickly identify problem areas or areas which do not need to be stressed to help the student in progressing towards the license.

P/N 13-12957.....$19.95

CANADIAN LOGBOOKS

A reprinted version of the now defunct Transport Canada AME log book. Hard-cover / Burgandy. 8-1/2" X 5-1/2"

Description	Part No.	Price
Porfessional Large Logbook Black	13-12345	$37.95
Small Student Logbook Black	13-12346	$11.90
Pilot Training Record Helicopter Logbook	13-12348	$10.50
Pilot Training Record Logbook	13-12347	$3.75

FLIGHT SCHEDULE LOG

Essential to smooth dispatching, features include: a replaceable perpetual aircraft/instructor entry panel; standby request section; and time in 15-minute blocks. Charcoal Gray binder is 17-1/4" x 13-5/8" with 15" x 12" pages for easy viewing. 60 pages included, refill packs available.

P/N 13-02308 ..... $39.75

FLIGHT SCHEDULE REFILL PACK - Can be used over and over with this 60-day refill. P/N 13-02309 ..... $14.50

POWDER PUFF PINK LOGBOOK

The Powder Puff Pilot standard logbook has a pink, protective hard cover with the Powder Puff Pilot logo on the front. It's standard size (8¼ by 6¼ inches) with 52 pages of all the record keeping, endorsements, and flight log information that every pilot needs. Inspirational quotes from the famous pioneers of women aviation sprinkled throughout to keep you motivated, inspired, and flying high. P/N 13-06342 ..... $17.95

POWDER PUFF PILOT AVIATRIX LOGBOOK

This logbook-scrapbook hybrid documents a youngster's early flying experiences. Its removable, cardstock pages record their First Flight Plan, First Pilot Report, and a flight log. It also has pages for listing favorite pilots, future aspirations, thoughts and quotes about flying, photos, and drawings.

Pink..... P/N 13-11471 .....$19.95
Blue..... P/N 13-11472 .....$23.95
Green ..... P/N 13-11473 .....$23.95

STANDARD PILOT MASTER LOG BLACK

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Columns provide standardization, but are flexible enough to allow pilots to customize to fit their needs. Summary pages allow pilots to track experience, aircraft types, currency, medical dates, flight review, and more for quick reference. Hard cover, black, 11" x 6-1/2", 278 pages.

P/N 13-32392 .....$18.95

PILOT LOGBOOK (ASA-SP-10)

This new introductory logbook is perfect for flight instructors and flight schools to start students out with an inexpensive logbook. With space for 16 separate flight entries, a ground instruction log, several solo endorsements, and a separate log for each type of aircraft flown, this logbook is great for introductory flights, first flight lessons, promotional give-aways and more.

P/N 13-05670.....$2.35

ASA FLIGHT CREW LOGBOOK POCKET SIZE

Created with the input of airline pilots and instructors, these shirt-pocket size logs are designed for long-lasting and comprehensive recordkeeping on the road. Options are provided for tracking flight time, currency requirements, expenses, duty times, layovers, and much more. Soft cover. Black. Spiral bound. 108 pages. 3-1/2" x 4-1/4". P/N 11-08801.....$5.75

ULTRALIGHT PILOT'S LOGBOOK

This small logbook is perfect for the ultralight pilot. Includes sections for flight time, airframe repairs, and engine repairs, plus metric/inch conversion table and fuel/oil ratio chart. Measures 4 1/4" x 7".

P/N 13-11509.....$1.95

GLEIM PILOT LOGBOOK

The Gleim Pilot Logbook provides detailed entries for all inflight information, sections for certificates, ratings, and operating privilege endorsement section, table of contents, room for up to 450 entries, and much more. High quality paper and hard cover binding. 112 pgs. 5"x9.

P/N 13-01822 ..... $8.95

PS

PILOT LOG BOOKS

PROFESSIONAL PILOT LEATHER LOGBOOKS

These are designed and made to last a lifetime. Available in Aviation leather and brown leather which are styled to look like a log book dating back to the early days of aviation, as well as black leather which is standard in modern log books. This logbook is bound from true leather. The log pages are designed to keep traditional logging info but to provide more flexibility. It has customary Date, Aircraft, Pilots, Route & Remarks sections. Each page is 8.5"x 9"; 20 entries per page; 288 pages which allows for 2600 entries.

Aviation Brown leather ..... P/N 13-02139 ..... $99.95
Antique - Brown leather ..... P/N 13-02141 ..... $99.95
Black leather ..... P/N 13-02140 ..... $99.95

STANDARD PILOT LOG BLACK

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Includes all instructor endorsements. Hard cover, black, 8" x 4 1/2", 100 pages.

P/N 13-32365 ..... $6.95

STANDARD PILOT LOG BURGUNDY

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Includes all instructor endorsements. Hard cover, burgundy, 7-1/2" x 4", 100 pages. P/N 13-32360 ..... $9.85

STANDARD PILOT LOG

The finest and most verstile logbooks for aviators. ASA's logbooks have been "The Standard" of the industry for over 30 years and comply with the FAA's recordkeeping requirements. With so many options, there is a logbook that's right for you. Versatile, easy-to-use and flexible enough to fit any pilot's needs, student or ATP. Includes all instructor endorsements.

P/N 13-32355 ..... $9.85

FLIGHT CREW LOGBOOK

Created with the input of airline pilots & instructors, these shirt-pocket size logs are designed for long lasting and comprehensive recordkeeping on the road. Options are provided for tracking flight time, currency requirements, expenses, duty times, layovers, and much more. Soft cover, 108 pgs.

P/N 13-04432 ..... $8.95

PROFLIGHT STUDENT PILOT LOG BOOK

Here is a great way to record a first flight experience for yourself or friends. The "Student Pilot Logbook' has a page for recording a name, address, airport and instructor or pilot's name. It has 4 standard pilot log book pages for recording all of the standard flight information. It has 2 pages of Instructor Endorsements and the 'Notes Section' on the last page is a great place to record first impressions. With room for 32 flight entries and a place to record Instructor Endorsements, these logbooks are great for students, flight schools, or those who like to give their guests a way to record their flight. Softcover. Size: 4"x 7 3/4".

Single ..... P/N 13-10445 ..... $3.95
13 Pack ..... P/N 13-10446 ..... $44.95

CLASSIC BLUE AERLOG® TRIP & EXPENSE RECORD

The Classic Blue Aerlog® is the original pocket sized, permanently sewn-bound book, much like a traditional Master Log book, only smaller. The Aerlog® Classic makes transcribing to another Master log book unnecessary. The Classic Blue Aerlog® has a separate "pay section" that is preferred by pilots who like to keep their pay time right next to their flying time.

P/N 13-20155 ..... $6.95

FLIGHT CREW LOG BOOK

This shirt-pocket-sized crew log has 216 pages for recording flight times, expenses, duty rigs, crew names, phone numbers, door codes, and more. 12 monthly schedule pages, plus a provision for year totals in the appendix. Meets FAA & IRS record keeping requirements. Durable high quality vinyl cover. Red. 4.25" X 3.25".

P/N 14-00066 ..... $8.50

CREW FLIGHT LOG TIME & EXPENSE RECORD

With a durable high quality vinyl cover, this book is the world's most usable flight crew log. Including an upgraded calendar and unique guide to aviation info sources, Crew Flight Log meets both FAA & IRS record-keeping requirements.

P/N 13-04573 ..... $6.95

FLIGHT CREW LOGBOOK

The Flight Crew Logbook has the same dimensions as a passport with a thickness of 1/2 inch and was designed to fit into the pocket of a pilot uniform shirt. Each logbook contains 90 days of flying. Each day of flying has 9 legs, a minutes conversion chart, time total lines, and a space for notes to record things such as flight crew names, tips, and other desired information. Flight Crew Logbook also meets FAA and IRS record keeping requirements.

P/N 13-12332 ..... $6.95

MASTER LOGBOOK CASE

Durable nylon logbook cover sized to hold master logbook, charts, and other aviation essentials. Loop forpen or pencil, hook and loop closure, clear pockets for license and medical certificate. 7.5"x12"; hold logbooks up to 6.5"x11". P/N 13-02311 ..... $19.95

LOGBOOK ENDORSEMENT STICKERS

Can be used for Flight Reviews and Instrument Proficiency Checks, and comply with FAR 61.56 and FAR 61.57 on PIC recent flight experience and flight reviews. Each sticker measures 2" H x 4"L. 10 stickers per sheet on white paper.

P/N 13-06585 ..... $2.35

LOG BOOK COVERS

These nylon logbook covers are very light weight but cover and protect your logbook very effectively. The nylon material is extremely durable and is washable. The cover features a holder for two pens and a velcro pocket on the back for licenses, gas receipt, and other documents.

Color	Size	Description	PN	Price
Black	Medium	JEPP	13-04402	$21.50
Black	Medium	ASA	13-04403	$21.50
Black	Medium	Sporty's/Stafford	13-04404	$21.50
Blue	Medium	JEPP	13-04405	$21.50
Blue	Medium	ASA	13-04406	$21.50
Blue	Medium	Sporty's/Stafford	13-04407	$21.50
Red	Medium	JEPP	13-04408	$21.50
Red	Medium	ASA	13-04409	$21.50
Red	Medium	Sporty's/Stafford	13-04410	$21.50
Black	Large	JEPP	13-04411	$23.95
Black	Large	ASA	13-04411	$23.95
Black	Large	Sporty's/Stafford	13-04412	$23.95
Blue	Large	JEPP	13-04413	$23.95
Blue	Large	ASA	13-04413	$23.95
Blue	Large	Sporty's/Stafford	13-04414	$23.95
Red	Large	JEPP	13-04415	$23.95
Red	Large	ASA	13-04415	$23.95
Red	Large	Sporty's/Stafford	13-04416	$23.95

PS

BRIGHTLINE FLIGHT BAGS

BRIGHTLINE B2 COMPUTE BAG

The B2 Compute starts with the 2" Center Section, which is designed to hold 13" laptops. Add a Front and Rear End Cap and you have an extraordinary laptop bag. The Front End Cap allows you to store items such as power cords, backup drives, flash drives, digital cameras, smart phones, tools, keys, etc. Meanwhile, the Rear End Cap allows you to store your manilla folders and documents. This can be used daily or you can attach the 2" Center Section to any other FLEX module. For example, you can zip it in between the Front Bag and the Rear Bag when traveling.
This bag also includes the Portfolio Handle which can be attached to the Front End Cap. This will only be used when you decide to remove the Center Section Two and zip the Front End Cap and the Rear End Cap together to make a "Portfolio Bag". P/N 13-11848 ..... $107.00

BRIGHTLINE B6 CONVEY BAG

The B6 Convey is perfect for VFR Pilots, but also has many uses outside aviation. For the VFR Pilot, one often needs only the essentials when going flying: Headset, sunglasses, GPS, todays charts, kneeboard, radio, etc. With the B6 Convey, you get a front bag, a rear end cap, a radio pocket and a pen pocket.
The B6 is perfect for that day trip or spending time in the pattern perfecting those landings. Why bring more bag than you need? The B6 Convey also makes a fantastic travel bag. When travelling, store your 13" laptop, power cords, smart phone, snacks, pillow, iPad, magazines, iPod, keys, DVD's etc., in a small efficient bag that fits right under the front seat. It really is the perfect carry-on bag.
P/N 13-11849 ..... $125.00

BRIGHTLINE B7 PILOT FLIGHT BAG

The B7 FLIGHT is the FLEX version of our award-winning original Pilot Flight Bag updated by now being configured with End Caps and Center Sections to allow even more flexibility. The B7 FLIGHT is perhaps the most useful flight bag ever designed. It's a fact that some days you need more gear than others. The B7 lets you carry a full set of flight gear for cross country and basic IFR flight. And then it lets you downsize to a smaller bag for those days when you're just going to take a quick VFR flight.
P/N 13-16012 ..... $199.75

BRIGHTLINE B10 CLASSIC BAG

The B10 Classic is the FLEX version of our award winning Brightline Bags Pilot Flight Bag. The B10 Classic is the same small, efficient, superior flight bag it was before, it is now just turbo charged with the FLEX System.
Perfect for VFR to light IFR, the B10 satisfies most pilots needs. The B10 Classic will hold two headsets, portable GPS, Glasses, charts, kneeboards, Phones, Keys, iPads, folders, multi-tools, fuel testers, flashlights, E6B's, and more.
The B10 Classic comes with a front and rear bag, a removable radio pocket and a removable pen pocket. Want a different pocket? Simply replace one of the pockets and add it to the bag.
P/N 13-11850 ..... $143.00

BRIGHTLINE B25 CARRYALL BAG

The B25 Carryall is designed to carry all you will ever need. Designed primarily for aviators who need to pack overnight items, such as clothes, shoes, coolers, etc., the B25 Carryall fits the bill when maximum space is required. And, like any bag in the FLEX System, the 11" Center Section can be removed by simply unzipping it and removing it, leaving you with the B10 Classic and all of your flight gear.
P/N 13-11852 ..... $265.00

BRIGHTLINE FRONT BAG

This is the front portion of all of the standard configurations. It also works well by itself (with a Rear End Cap added). The Front Bag is 13.5" x 10.5" x 5.0" on the outside. The main compartment is 13" tall, 10" wide and 3.5" deep on the inside. There are two FLEX-Mount pocket stations on the outside of the bag, one on each side. You can install any two of your choice of the FLEX System side pockets
P/N 13-11978 ..... $83.00

BRIGHTLINE SIDE POCKET DELTA

The Side Pocket Delta is a double pocket designed to provide greater outside storage with a larger pocket. Installs onto any two side-by-side attachment bays. Even bridges the gap between two modules.
P/N 13-11989 ..... $18.00

BRIGHTLINE SIDE POCKET CHARLIE

The Side Pocket Charlie is a pen pocket designed to hold pens and pencils in flight. In addition, it will hold eyeglasses and larger markers in the pocket behind the slots.
P/N 13-11988 ..... $12.00

BRIGHTLINE SIDE POCKET BRAVO

The Side Pocket Bravo is a small radio pocket designed for the small aviation radio. There is also room for extra batteries and smaller items. P/N 13-11987 ..... $12.00

BRIGHTLINE SIDE POCKET ALPHA

The Side Pocket Alpha is a radio pocket that is designed to hold a large radio or water bottle. The zipper conceals an expansion flap. P/N 13-11986 ..... $12.00

BRIGHTLINE REAR END CAP

The Rear End Cap is designed to mimic the outside of the Rear Bag. It is used to finish the exposed rear area of a bag, center section, or end cap by zipping on to the exposed area. By adding a Rear End Cap, not only do you add functionality, you protect the exposed zipper, preventing possible damage. The Rear End Cap is 13.5" x 10.5". The Rear End Cap does not come with a Main Handle or a Shoulder Strap. P/N 13-11985 ..... $25.00

BRIGHTLINE FRONT END CAP

This is the Front End Cap that mimics the front of the Front Bag. It is 13.5" x 10.5" x 1.5". The Front End Cap is designed to hold your cell phone, wallet, Multi-Tool, cords, cables, etc. It is not designed to be used alone as the zippers are exposed and could be damaged. Works well with a Rear End Cap. P/N 13-11984 ..... $49.85

BRIGHTLINE CENTER SECTION 11 INCH

The CS11 was designed primarily for pilots that frequently travel overnight. It will swallow several changes of clothes, a 13" laptop with room for binders and documents, or a small cooler. The CS11 is 13.5" x 10.5" x 11". (And remember, it is a soft bag so it can expand slightly in every direction.) The CS11 comes with a handle and a shoulder strap. P/N 13-11983 ..... $94.99

BRIGHTLINE CENTER SECTION 5 INCH

The CS5 was developed primarily for our IFR Flight Customers. With the B10, you get enough storage for VFR to light IFR flying. By adding a CS5, you can now add IFR Binders and documents, without changing the setup of the B10. Also, perfect for a couple days worth of clothes, two more sets of headsets, or a 13" laptop. The CS5 is 13.5" x 10.5" x 5". (And remember, it is a soft bag so it can expand slightly in every direction.) P/N 13-11982 ..... $63.75

BRIGHTLINE REAR BAG

This is the rear portion of all of the standard configurations. It is designed primarily to be a document bag. But, of course, it is a good size to hold all sorts of different stuff like a change of clothes, your lunch, a laptop and/or an iPad, or simply some additional gear that you need to carry. The Rear Bag is 13.5" x 10.5" x 3.5" on the outside. The main compartment is 13" tall, 10" wide and 3.0" deep on the inside. (And remember, it is a soft bag so it can expand slightly in every direction.) There are zero FLEX-Mount pocket stations on the outside of the Rear Bag. (It's a little too narrow.)
P/N 13-11980 ..... $49.00

BRIGHTLINE CENTER SECTION 2 INCH

The CS2 is designed for carrying 13" laptops, iPads and assorted documents. This center section is 13.5" x 10.5" x 2". Not designed to be used by itself due to the possibility of damaging the exposed zippers. Can be added to any configuration to add storage for your 13" laptop. Simply zip the CS2 into a B10, B16, or B25 to get added storage for your 13" laptop, iPad, or folders and documents.
P/N 13-11981 ..... $34.99

BRIGHTLINE BAGS O-RINGS

Slide the two pairs of o-rings onto the main handle of the BrightLine Bag and nestle the J-hook from your main suitcase in between the two pairs of o-rings to keep the J-hook from sliding side-to-side on the main handle of the BrightLine Bag as you pull your main suitcase around. Includes two pairs of o-rings (total of 4). P/N 13-11991 ..... $1.00

PS

FLIGHT BAGS

AERO SQUADRON LEATHER BAGS

AEROSQUADRONLEATHERGARMENT BAG -
Desc:GARMENT BAG 22" Length, 18" Height, 5" Width Color: Walnut

P/N 13-07205 .....$390.00

AERO SQUADRON LEATHER DUFFLE BAG -
Desc:CARRY ON BAG 19" Length, 10" Height, 9.5" Width Color: Walnut
P/N 13-07202 ..... $289.95

AERO SQUADRON LEATHER BRIEF CS -
Desc:SATCHEL BRIEF 16.5" Length, 12" Height, 4" Width Color: Walnut
P/N 13-07199 .....$338.00

AEROSQUADRONLEATHERLTBRIEF - Desc:COMPUTER CASE Color: Walnut. 12" x 13" x 3"
....P/N 13-07203 ..... $276.95

AEROSQUADRONLEATHERTRAVELSLING-
Desc:TRAVEL SLING 13.5" Width 9.75" Height, 6.75D Color: Walnut
P/N 13-07204.....$163.75

AERO SQUADRON LEATHER HANDBAG -
Desc:HANDBAG COLLECTION 8.25" Length, 10.5" Height, 3" Width Color: Walnut
P/N 13-07207..... $168.75

AERO SQUADRON LEATHER SHAVE KIT -
Desc:SHAVE KIT 10" Length, 6" Height, 4" Width Color: Walnut
P/N 13-07198..... $103.75

AERO SQUADRON LEATHER SHIELD TOTE -
Desc:MAN BAG W/SHOULDER STRAP Color: Walnut P/N 13-07201 .....$124.95

FLIGHTLINE FLIGHT BAGS

LARGE DELUXE FLIGHT BAG

The top of the line Flight Bag by Flightline boasts an incredible array of features for the price. This heavy-duty bag is double stitched and ideal for large loads. 12"H x 7-1/4"W x 14-1/2" L
P/N 13-04255.....$57.95

MEDIUM DELUXE FLIGHT BAG

This Flight Bag is ideal for pilots who have a lot to carry but not a lot of space to put the bag. It is currently any pilot's favorite flight gear! 10"H x 6-3/4"W x 12-1/2" L
P/N 13-04256..... $48.50

DELUXE HEADSET BAG

It is the perfect bag to protect and organize any fragile and expensive equipment. Not only will this bag hold a headset, but other necessary items as well! 10"H x 4-1/4"W x 10 " L
P/N 13-01416 .....$26.95

BISON MOUNTAIN ULTIMATE FLIGHT BAG

Taller than most bags, it makes more use of the vertical room in your narrow baggage compartment or cockpit. At 19.5 inches long, 9 inches wide, and 14 inches tall you can pack everything you need to fly with and there is enough room left over for a couple days worth of clothes. The interior compartment is 14 inches long, 7.5 inches wide, and 14 inches tall. A removable interior divider velcros in place to increase storage options. There are nine exterior pockets. Exterior pockets include a padded headset pocket, padded pocket specifically for Garmin 496 or similar GPS's (or handheld radios), cellphone pocket, pocket for magazines or newspapers, water bottle pocket, chart pocket, 8.5 inch by 7 inch pocket for logbooks or aircraft manuals and pen, pencil, flashlight holder. Large padded laptop compartment that measures 14 inches long, 12 inches high, and 1.5 inches wide.A clear plastic identification card holder. There is a place for military or civilian wings that attach with velcro. It comes with sturdy carrying handles that velcro together and a removable carrying strap.

Color	Part No.	Price
Black Curdura	13-05329	$139.00
Grey Curdura	13-05331	$139.00
Black Leather	13-05333	$208.00
Grey Leather	13-05334	$221.95
Brown Leather	13-05336	$208.00

BISON MOUNTAIN RV FLIGHT BAG

A practical solution to organizing the cargo area of your RV-6, RV-7 or RV-9. Also makes a great overnight bag! The RV Flight Bag was designed to fit behind the pilots and co-pilots seat of the RV-6/7/9. It fits over the flap actuator bar and makes maximum use of the area behind your seat. 18 inches high and 12.5 inches wide. There are two side pockets, one 10" x 4 " and a 7" x 5.5" map pocket. The rear side of the bag has a pencil /flashlight/fuel tester pocket, a 10 inch x 7 inch headset pocket, and a 6"x 5 ¼" pocket for small tools. It has a nice carrying handle and comes with two straps that can be attached to your seat back to clip the bag to your seat to minimize movement. It also comes with a removable shoulder strap.

Color	Part No.	Price
Black Curdura	13-05321	$117.00
Grey Curdura	13-05323	$119.80
Black Leather	13-05324	$179.00
Grey Leather	13-05326	$177.75
Brown Leather	13-05328	$177.75

PS

NORAL FLIGHT BAGS

NORAL EXPRESS FLYER BAG

The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11441 ..... $49.95
Grey ..... P/N 13-11440 ..... $49.95

NORAL TRIPLE HEADSET BAG

The Noral Triple Headset Bag is made of 1680 Denier Ballistic water repellant material. Interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11430 ..... $44.75
Grey ..... P/N 13-11433 ..... $44.75

NORAL FLYING CLUB BAG

This bag is designed for all pilots, especially for the compact cockpit airline pilot, Military pilot and for private and student pilots. This bag can hold most essential instruments efficiently. The main compartment of this bag can hold a large headset, logbook and/or any other similar items. The rear pocket works well to hold books, boards, charts or similar items. There is also a small front pocket with zipper closure and two side pouches for Transceiver/ GPS etc. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11442 ..... $42.75
Grey ..... P/N 13-11444 ..... $42.75

NORAL ATTACHE FLIGHT BAG

This bag has two side pouches for large headsets. One of these side pouches has a flap pocket with zipper closure to store pens, flashlights, ID card and/ or license etc. Inside the main compartment there is two removable pouches for GPS/Transceiver and two dividers. The dividers can be adjusted to different positions and are removable. The front of the bag has a large open pocket for easy access. The back of the bag has a large zippered pouch with piano type opener and three dividers. At the bottom floor of this bag is a removable plastic board to reinforce it and to keep the bag from sagging when fully loaded. Made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11446 ..... $114.75
Grey ..... P/N 13-11448 ..... $150.75

NORAL IPILOT BAG

This bag can hold most instruments and is compact to save cockpit space. There are a total of 13 pockets inside and one large pocket outside for a headset. The main compartment of this bag can hold a large headset or other equipment. It has another zippered pocket in the front for a logbook or any other similar item. This bag also has some small rear pockets.

Grey ..... P/N 13-12432 ..... $105.75
Black ..... P/N 13-12433 ..... $105.75

NORAL AVIATOR FLIGHT BAG (DETACHABLE)

The main compartment of this bag has a removable divider which can be adjusted to a different position. The bottom floor has a removable plastic board to reinforce. The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. Made of 1680 Denier Ballistic water repellant material.

Black ..... P/N 13-11428 ..... $123.95
Grey ..... P/N 13-11429 ..... $123.95
Blue ..... P/N 13-15769 ..... $106.99

NORAL AIRCRAFT DOCUMENT HOLDER

This durable document holder is made of strong fabric with two clear pockets to hold your aircraft document secure and visible. It comes with two inches of velcro to be placed anywhere that velcro can be applied to.

Velcro ..... P/N 13-01134 ..... $15.85

NORAL ANGELS TOOL BAG

Two side pouches and over one of the side pouches is an open pocket for easy access. In the front of the bag is a large zippered pocket and both the front and back of the bag have reflector bands that can be seen at night time. The back of the bag can be opened like a portfolio and there are 21 elastic loops to keep organized. Also, inside this portfolio is a large zippered pocket. The main compartment has 10 more elastic loops for small tools and 3 easy access pockets. The main compartment also has a removable and adjustable divider to keep instruments organized. Color: Grey. ..... P/N 13-11421 ..... $113.95

NORAL SINGLE HEADSET BAG

This bag is ideal for the pilot that wants to carry a passenger headset or his own, separate from his flying bag. It is constructed with genuine DuPont® Cordura® 1000 Deniers, water resistant, fully padded with a 1/4" foam and backed with a layer of tricot. Features separate zippered compartment along with an extra side pocket.

Grey ..... P/N 13-00286 ..... $26.85 Black ..... P/N 13-00288 ..... $26.75

NORAL STUDENT PILOT BAG

The Student Pilot Bag has plenty of room for everything a student pilot needs to carry and more. It has 2 extra large zippered headset pouches plus another zippered section to store pens, flashlight, fuel tester, E6B computer and more! Access to the main compartment is through a double zipper flap with a pull cord. In addition to the carrying handles, a detachable padded shoulder strap is included. Size: 11"H x 10.5"W x 12"L.

Grey ..... P/N 13-00294 ..... $62.75 Black ..... P/N 13-00297 ..... $62.75

NORAL PRIVATE PILOT BAG

Fits all the goodies and gadgets a pilot needs and wants to carry. It has two extra large zippered headset pouches plus another zippered section to store pens, flashlight, fuel tester, E6B computer and more! Access to the main compartment is through a double zipper flap with a pull cord. In addition to the carrying handles, a detachable padded shoulder strap is included. Size: 11"H x 10.5"W x 15.5"L.

Black ..... P/N 13-00313 ..... $69.95

NORAL MACH 1 FLIGHT BAG

The Mach 1 flight bag is compact yet roomy. The bag features a wide 5" double zippered access flap with a pen and pencil holder. There are two end compartments 6"X10". On the front, a zippered 11"X 6" compartment. On the back is a 4"X 8"X 8" headset compartment which will accomodate the largest of headsets. The Mach 1 is made of US Made Nylon with 1/4" Foam Padded, 1000 Denier and is water resistant. It comes equipped with a GPS/Transceiver Pouch that can be worn on your belt. Also included is a shoulder strap and carry handle. Dimensions: 15"LX11"WX10 1/2H

Black ..... P/N 13-04088 ..... $85.50 Grey ..... P/N 13-04092 ..... $85.50

NORAL MACH 2 FLIGHT BAG

A divider in the main compartment. can be adjusted in different position and can be removed if you want so. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position white carry on shoulder. This bag is made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta to protect your instrument. All our Flight Bags have 7 years Warranty on Manufacturing defects.

Black ..... P/N 13-11425 ..... $139.95 Grey ..... P/N 13-11424 ..... $139.95

AIRCRAFT SPRUCE SINGLE HEADSET BAG

Safe and convenient way to protect a single headset. Features foam padded single zipper compartment with convenient webbing handle. Made in USA. Size: 7"L x 4"W x 9"H. Color: Black.

P/N 13-55010 ..... $18.75

NORAL HEADSET FLIGHT BAG

The main compartment of this bag can hold a large headset and another space with divider for logbook and/or any other similar item. This bag has a rear pocket with secure touch fastener. It also has a small front pouch with touch fastener and one pouch in the left side for Transceiver/GPS. The right side has holders for pen and small flash light. The main compartment is H9" X W9" X G4.5".

Black ..... P/N 13-07468 ..... $33.95
Grey ..... P/N 13-11356 ..... $34.75

NORAL CFI / IFR PILOT FLIGHT BAG

This bag has two side pouches equipped for large sized headsets. One of these side pouches has a flap pocket with a zipper closure to store pens, flashlight, ID card and/ or license etc. Inside the main compartment is two removable pouches for GPS/Transceiver. The dimension of main compartment is H11" X W14.5" X G10". In the front of the bag is a large open pocket for easy access. The back of the bag has two open pockets and the bottom floor of the bag is a removable plastic board to reinforce it and to keep the bag from sagging when fully loaded. Also has two dividers in the main compartment that can be adjusted to a different position and can be removed if desired.

P/N 13-15768 ..... $139.95

NORAL AIR MAP CASE 1000

The Noral Air Map Case 1000 is made of 1680 Denier Ballistic water repellant material. Interior is fully padded and covered with the liner of water repellant taffeta.

Black ..... P/N 13-11434 ..... $22.75
Grey ..... P/N 13-11437 ..... $22.70

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

FLIGHT BAGS

ASA AIRCLASSICS FLIGHT BAG

ASA has brought pilot gear to a new level with the AirClassics series of pilot bags. Focusing on a clean, sophisticated and professional look, they have been designed and engineered to be supremely functional. Padded 600D nylon for superior durability. Comfort Grip connectable handles. Non-slip detachable carry strap. Reinforcing straps around bag for strength. #10 zippers for easy handling. Headsetn pockets on both ends. Large single-pull, zippered & dividable main compartment. 18"L x 11"H x 7"W P/N 13-02336 ..... $64.95

ASA AVIATOR FLIGHT BAGS

The Pilot Flight Bag and the Trip Bag, are made of fully padded nylon for extreme durability. They feature wraparound carry straps for strength, a non-slip detachable shoulder strap, and high-quality zippers on the main compartments.

Pilot Bag..... P/N 13-04057..... $39.75
Trip Flight Bag ..... P/N 13-04058..... $54.95

ASA TECH FLIGHT BAG

Ideal for the computer-toting pilot. It includes a padded laptop sleeve for safe storage of your computer or favorite EFB (up to 15" x 11") and has plenty of pockets for carrying everything from headsets to sticky notes. Dimensions: 19" wide x 8" tall x 12 1/2 " deep * Made of 600D polyester with PVC backing for extreme durability * Non-slip removable shoulder strap * Molded carry handle for strength and comfort • Rugged zippers * Outside ID pocket * Padded interior divider panels with numerous compartments * Padded interior laptop/EFB sleeve. P/N 13-06260 ..... $59.95

ASA CRM FLIGHT BAG

Numerous compartments and pockets keep everything secure and easily accessible in flight. There are even "hideaway" stretch mesh side pockets for water bottles. Dimensions: 14" wide x 12 1/2" tall x 9" deep * Made of 600D polyester with PVC backing for extreme durability * Non-slip removable shoulder strap * Padded carry handle * Rugged zippers * Interior organizer with multiple pockets * Large interior mesh pocket with toggle closure * Side zippered pocket with stretch mesh for water bottle P/N 13-06258 ..... $59.95

PROFLIGHT PREMIUM HEADSET BAG

Three small individual pockets. It is made to resist water and tears. Padded protection for an individual headset with a dual zipper on top makes access very easy. Will fit most ANR headsets. Size: 10-3/4" x 11-3/4" x 5"

P/N 13-06936..... $19.95

ASA FLIGHT BRIEFCASE

The Pilot Briefcase features an expandable, zippered main compartment with room for all ground and flight school necessities. The outer flap provides easy access to a chart pocket with multiple accessory storage areas to store everything from pencils and pens, to flashlights and flight computers. Also perfect for laptop computers. Each bag is black with the ASA wings logo tastefully silver-embroidered on the top. Count on ASA's AirClassics Flight Bags to bring many years of utility and pride. 15-1/2"L x 11"H x 3"W. P/N 11-08805 ..... $27.75

CASE FLIGHT

The Case Flight luggage bag is roomy, has multiple pockets, lightweight, and holds plenty of pilot gear. This professional case is made with rugged dependability in mind for today's aviator. Dimensions: 19 x 14 ½ x 10. P/N 11-09097 ..... $79.50

CASE PRO

The Case Pro luggage bag is roomy, has multiple pockets, lightweight, and holds plenty of pilot gear. It is equipped with wheels and a retractable handle for convenient mobility. The Case Pro luggage bag is a professional case made with rugged dependability in mind for today's aviator. Dimensions: 19 x 14 x 9.

P/N 11-09100 ..... $99.75

PRO-MAX FLIGHT CASE

The Case Pro-Max luggage bag is roomy, has multiple pockets, lightweight, and holds plenty of pilot gear. It is equipped with wheels and a retractable handle for convenient mobility. The Case Pro- Max is made with a more durable outer skin and has LOTS of pockets for easy convenient storage for all of your flight tools. The Case Pro-Max bag is a professional case made with rugged dependability in mind for today's aviator. Dimensions: 19 x 15.5 x 9

P/N 11-09101 ..... $167.95

AEROCOAST PRO I FLIGHT CASE

* Waterproof ballistic material * Metal piano hinge for added strength * Protective plastic plate * Multi access folder compartments * Multiple storage compartments * Flashlight holder * Leather wrapped handle * Side pocket compartment * Name card holder with clear cover * Embroidered gold logo * Added Velcro to both inside flaps * Outside dimensions 18 x 13 x 8 inches. P/N 13-06041 ..... $160.00

ASA CARGO FLIGHT BAG

Dimensions: 16 ½" wide x 8" tall x 12" deep * Made of 600D polyester with PVC backing for extreme durability * Widemouth opening for unrestricted interior access * Non-slip removable shoulder strap * Padded carry handle * Rugged zippers * Exterior ID pocket * Padded interior divider panels with many compartments * Padded exterior pockets and side pocket for smaller items. P/N 13-06259 ..... $59.85

AEROCOAST PRO SLIM NOTEBOOK BAG

A great addition to the 13-12894 Pro Cooler Bag sold separately. Shoulder strap connectiion points on both modular sections. Easy X-ray screening at TSA checkpoints so you will never take out your laptop again. You will save time and you will protect your laptop, iPad or EFB from physical damage. ipad compartment dimensions 15 x 11 x 1.5 inches. P/N 13-12895 ..... $27.50

AEROCOAST PRO COOLER BAG

Has two separate insulated compartments to keep your food warm or cold. Four additional pockets for easy storage of accessories. Rigid case construction for added durability. A great addition to the 13-12895 Pro Slim Notbook Bag sold separately. P/N 13-12894 ..... $45.00

AEROCOAST PRO EFB & INSULATED COOLER BAG

Top pocket for sunglass. Shoulder strap connectiion points on both modular sections. Modular design lets the EFB & Cooler portion to be used independently or used in unison. Easy X-ray screening at TSA checkpoints so you will never take out your laptop again. Two separate insulated compartments to keep your food warm or cold. Four additional pockets for easy storage of accessories. Leak resistant main compartment design. Fits under aircraft seats for easy stowage on travel. Outside dimensions: 15 x 11 x 10 inches. Laptop compartment dimensions 15 x 11 x 3 inches

P/N 13-12893 ..... $79.95

AEROCOAST PRO JET III FLIGHT CASE

EFB, Laptop, iPad compartment. Interlocking ergonomic handle system with double straps. Composite double digit combination locks. Secure side pocket compartment design. Waterproof ballistic material. Added fasteners on both inside flaps. Multi access folder compartments. Flashlight and pen holster. Name card holder with clear cover. Outside dimensions: 18.25 x 13 x 8.3 inches. P/N 13-12892 ..... $160.00

AEROCOAST PRO JET II FLIGHT CASE

EFB, Laptop, iPad compartment. Interlocking ergonomic handle system with double straps. Composite double digit combination locks. Secure side pocket compartment design. Waterproof ballistic material. Added fasteners on both inside flaps. Multi access folder compartments. Multiple storage compartments. Flashlight and pen holster. Name card holder with clear cover. Embroidered patch for added optional personalization. Outside dimensions: 18.25 x 13 x 8.3 inches P/N 13-12891 ..... $160.00

AEROCOAST PRO JET I FLIGHT CASE

EFB, Laptop, iPad compartment. Interlocking ergonomic handle system with double straps. Composite double digit combination locks. Secure side pocket compartment design. Waterproof ballistic material. Added fasteners on both inside flaps. Multi access folder compartments. Multiple storage compartments. Flashlight and pen holster. Name card holder with clear cover. Embroidered patch for added optional personalization. Outside dimensions: 18.25 x 13 x 8.3 inches P/N 13-12890 ..... $160.00

ASA AIRCLASSICS FLIGHT BAG PRO

1000D Nylon for extreme durability and gear protection. Large, zippered side pockets. Unique detachable chart wallet. A zippered, mesh interior pocket. Smaller mesh compartment on the outside of the bag. Black with the ASA wings logo tastefully silver-embroidered on the top. Dimensions: 20"L x 10"H x 8"W. P/N 11-08804 ..... $86.75

DOUBLE HEADSET BAG

Doube-sided, 1/4" padding everywhere; can hold two headsets. ..... P/N 13-02334 ..... $25.80

PS

JEPPESEN CASES & FLIGHT BAGS

JEPPESEN PILOT BACKPACK

A great backpack for the student pilot or certificated seasoned pilot. This backpack is a great option in offering convenience and flexibility. Perfect for carrying your laptop, charts, headset, and other pilot supplies. Features: • Padded laptop sleeve • Large center storage area • Computer accessory storage • Internal file sleeve • Fleece-lined audio pocket with headphone exit port • Digital-media pocket • Jeppesen zipper pulls 8 Sturdy neoprene grab handle Specifications: • 400x400 Dobby pindot nylon, 600-denier polyester • Weatherproof, fleece lined inner pockets •Overall dimensions: 21" x 14" x 9-1/2" • Laptop sleeve dimensions: 15-1/2" x 11-1/2" x 2"

P/N 13-07311 ..... $83.75

SINGLE HEADSET BAG

For those who like to fly with minimum baggage, this holds one headset, has extra pockets, and allaround padding ..... P/N 13-02333 ..... $17.95

FLIGHT ATTACHE

Holds all the materials a student pilot needs. 15" long x 11" deep ..... P/N 13-02335 ..... $13.95

VOYAGER II FLIGHT ATTACHE FOR IPAD

The Voyager II has upgraded metal snap hooks and d-rings to attach the stretchy, comfortable Air Lift shoulder strap. There is a separate pocket inside to carry your iPad1, 2 or 3 and will fit most iPad cases. The outer side pocket features a removable AND adjustable strap. The handles are now made of 1680D and the entire bag is accented with Leatherette. All the same organizing features including the Co-Pilot organization flap, chart pockets and battery sleeves are all still where they were before. If you fly with an iPad, this is a great case to help organize during your pre-flight. Size: 17.0 X 11.5 X 5.5in. Weight: 2lbs 13oz

P/N 13-11877 ..... $63.85

DISCOVERY II FLIGHT ATTACHE FOR IPAD

The Discovery II is based on the exact center compartment of the popular Discovery. The end pockets were removed, and reinforcment panels inserted into the ends. The reinforced panels provide substantial strength for the modular customization for your flight needs. The Discovery II still includes all of the popular Discovery features such as our exclusive, patented Co-Pilot organizing features, super durable construction and materials, 4 way adjustable main compartment divider, metal hardware, Sky High Air Lift strap which is unmatched in the aviation industry, and our 1 year no questions asked warranty (5 years manufacturing and material defects). If you carry a lot of flight gear and want flexibility for local and distant flights, this the bag for you!

P/N 13-14738 ..... $75.95

VOYAGER FLIGHT ATTACHÉ FLIGHT BAG

The Voyager Attaché flight bag gives you the ability and convenience of being able to carry charts, sectionals and all the necessities without carrying around a larger flight bag. The copilot feature allows you to organize up to 6 sectionals and essential equipment. The main compartment can hold a single headset, Jeppesen chart binders and/or air charts. A kneeboard pocket is on the back for added convenience. The Voyager is made of ballistic nylon for extra durability and the color is black with green flap.

P/N 13-03347 ..... $54.95

PORTABLE FOLDING LUGGAGE CART

3-Way portable luggage cart (folding cart) in black plastic with 37.5" extension handle. Load up to 66 lbs. Store flat. Makes moving items easy. Fits the Brightline Bag perfectly!
To attach the bag, place the front of the bag (pocket-side) flush against the telescoping handle. Take the handle and clip it into the front buckle. Wrap the handle around the telescoping handle and reattach it to the opposite front buckle. The bag is now securely attached to the cart.

P/N 13-10007 ..... $45.65

THE CAPTAIN FLIGHT BAG

The most versatile bag available. Headset bags can be removed and attached together to form a dual headset bag. Removable transceiver/GPS bag can be worn on your belt. 4-way interior custom divider can hold four Jeppesen binders. One large multi-use exterior zippered pocket. Two zippered storage pockets for glasses, charts, pilot operating handbooks and other miscellaneous accessories. Wide cushioned shoulder strap. (12" x 22-1/2' x 8")

Black ..... P/N 13-621214 ..... $121.95

THE AVIATOR BAG

Slightly smaller than the Navigator Bag, but still spacious enough for all your flight materials. Includes 1 exterior front pocket as well as detachable headset & transceiver cases. Constructed with durable PVC backed with 600 denier poly. 15"x 6.5" x 12" (black only)

P/N 13-00998 ..... $81.95

THE NAVIGATOR BAG

The ultimate choice for convenience and flexibility. Each Navigator Bag includes all of the features and benefits of the Captain Bag, except the removable transceiver/GPS bag and the two zippered exterior storage pockets. Instead it includes two exterior storage pockets for easy access to Section Charts. 12" x 22 1/2" x 8"

Black ..... P/N 13-00995 ..... $101.95

THE STUDENT PILOT

A great first bag for the student pilot. Numerous outside pockets organize charts, flight computer, fuel tester, plotter, pens and pencils, flashlight and much more. Comfortable, wide removable shoulder strap; double zipper opening for easy access. Reinforced bottom. Constructed with durable PVC backed 600 denier poly. 10"x 5.5"x17" (black only)

P/N 13-00997 ..... $35.95

JEPPESEN STYLE FLIGHT BAG

Student/Book Bag: Same great bag Jeppesen uses for its training kits. The bag is made from heavy-duty 6000 denier Cordura for superior strength and with a PVC coating on one side for added water resistance. Includes outside pockets, removeable shoulder strap, reinforced bottom. Size 10" x 5.5" x 17"

P/N 13-06280 ..... $29.95

TUFF NUFF HEADSET CASE

A rugged built case with "clamshell" design for easy access. Your headset is well protected by a soft foam lining and tough Cordura outer shell. Fits all popular makes and models, with extra room for small accessories. Measures 9-1/2" x 10-1/2" x 3", and weighs 7 oz.

P/N 4002 ..... $24.95

AIRCRAFT DOCUMENT CASE

This durable, flexible blue cordura pouch is an ideal way to keep aircraft registration, insurance, log books, operating manuals, and other important documents all in one safe location. Measures 18"W x 12"H. Features top quality zipper along front side for easy access and location to mark your aircraft number on front.

Color	Part No.	Price
Blue	13-20065	$19.50
Black	13-11883	$19.50
Red	13-02934	$19.50
Olive	13-11885	$19.50
Brown	13-11884	$19.50

PS

FLIGHT BAGS – AVIATOR'S LUGGAGE

SAGA AVIATION FLYBY FLIGHT BAG

SAGA Aviation has created one of the most compact, lightweight, and versatile flight bags ever. Spacious enough to carry the basics, yet occupying very little space in the cockpit, the FLYBY, made of durable materials, will last you many years.

Features: Large lined storage giving maximum headset protection, Back pocket for navigational charts and flight kneeboard, Several pockets with easy access for flashlight, cell phone and other accessories Zipper pocket for important documents, Water bottle holder, pencil holder and side pocket, Large, adjustable, and padded shoulder strap

P/N 13-09565 ..... $43.75

STEALTH COMPUTER BRIEF BAG

The Computer Brief features a padded compartment with a rigid plastic frame for storing a laptop computer. It also has a removable zippered pocket for storage of the battery pack and accessories.

Additional compartments accommodate folders and needed papers. The front of the bag contains a U-shaped pocket as well as a gusseted side-entry pocket. A back pocket provides easy access to important papers.

Features a sleeve in the back to slide over the handle of a rolling bag. Removal is easy and convenient while keeping extra bags securely fastened as you navigate today's busy airport terminals. H-13.5" x W-16.5" x D-6"

P/N 14-00599 ..... $29.95

VINYL FLIGHT KIT

This economical flight kit features two external end pockets, two internal dividers, a pen holder and two small sleeves for business cards, etc. The exterior is made of durable vinyl with brass combination locks and hardware. H13.5"xW18"xD8"6.75 lbs.

P/N 14-00554 ..... $77.75

USAC KIT BAG

This rugged kit bag is made from durable 20 oz twill, with heavy cotton webbing straps, will stand up to the toughest of journeys, either on land on in the air. Other details include antiqued brass zipper and detailing, screen print stencils, felt patch appliqué and handy interior pockets. 16 1/2" L x 9" W x 12" H.

P/N 13-07431 ..... $119.80

WWP-102 HEADSET BAG

This padded carry bag provides inexpensive insurance against headset damage. Featuring dual zipper openings, inside pocket sectionals, computers, glasses, etc. Bag is constructed of black waterproof nylon with carry handle.

P/N 17-00231 ..... $12.95

LUGGAGEWORKS STEALTH SUITER

This bag is an enhanced version of our original metal frame Stealth Bag and offers a combination of durability and functionality as well as first class looks. It comes with two front pockets, three side pockets and two back pockets. Internally, a shirt shelf and a movable divider are provided. Enhancements include a stainless steel retractable handle, redesigned top and bottom casting and modified zippers. As before, the handle extends to a comfortable height, always with top quality sealed bearing in-line skate wheels. It also features our innovative attachment system, and a stabilizer strap.

22 INCH SUITER

(H) 22 in. x (W)14 in. x (D) 8 in., 15.0 lbs.

Part No.	Logo	Price
14-02485	No Logo	$298.00
14-02479	Horizon Air	$299.99
14-02480	JetBlue	$354.95
14-02481	KittyHawk	$354.95
14-02482	Midwest Airlines	$354.95
14-02484	Flight Options	$354.95
14-02486	AfterBurner	$355.00
14-02488	Alaskain	$354.95
14-02489	Alpha	$354.95

Part No.	Logo	Price
14-02491	APA	$354.95
14-02492	ATA	$354.95
14-02493	ATI	$354.95
14-02494	Capjet	$355.00
14-02496	United	$354.95
14-02497	US Airways	$354.95
14-02498	Net Jets	$354.95
14-02499	Prime Jet	$354.95
14-02500	SkyWest	$354.95

26 INCH SUITER

(H) 26 in. x (W)14 in. x (D) 8 in. 15.8 lbs.

Part No.	Logo	Price
14-02453	No Logo	$329.95
14-02456	Alaskain	$353.00
14-02465	Horizon Air	$353.00
14-02466	JetBlue	$353.00

Part No.	Logo	Price
14-02468	Midwest Airlines	$353.00
14-02469	Net Jets	$353.00
14-02471	SkyWest	$353.00
14-02474	US Airways	$353.00

EXECUTIVE ROLLING BAG

The Executive Rolling Bag has an ABS metal frame. It also has several external pockets for storage of your travel necessities. The innovative attachment system is also a key feature of this bag. The stabilizer strap is featured on the 26" only.

22" Bag - Legal Carry-on. H-22" x W-14" x D-8"

26" Bag - Not Legal Carry-on H-26" x W-14" x D-8"

22" BAGS

Part No.	Logo	Price
14-02409	No Logo	$211.95
14-02410	AfterBurner	$238.95
14-02412	Alaskan	$238.95
14-02413	ALPA	$238.95
14-02415	APA	$238.95
14-02416	ATA	$238.95
14-02417	ATI	$238.95
14-02418	Capjet	$238.95
14-02420	Flight Options	$238.95
14-02421	Horizon Air	$238.95
14-02422	JetBlue	$238.95
14-02423	KittyHawk	$238.95
14-02424	Midwest Airlines	$238.95
14-02425	NetJets	$200.75
14-02426	Prime Jet	$238.95
14-02427	Skywest	$238.95
14-02430	US Airways	$238.95

26" BAGS

Part No.	Logo	Price
14-02431	No Logo	$245.95
14-02432	AfterBurner	$269.95
14-02434	Alaskan	$269.95
14-02435	ALPA	$269.95
14-02437	APA	$269.95
14-02438	ATA	$269.95
14-02439	ATI	$269.95
14-02440	Capjet	$268.95
14-02442	Flight Iptions	$269.95
14-02443	Horizon Air	$269.95
14-02444	JetBlue	$269.95
14-02445	KittyHawk	$269.95
14-02446	Midwest Airlines	$269.95
14-02447	NetJets	$269.95
14-02448	Prime Jet	$269.95
14-02449	Skywest	$269.95
14-02452	US Airways	$269.95

LEATHER FLIGHT KIT - SPLIT GRAIN

This high quality flight kit is made of split grain leather, has an inside divider, and comes with a headset case and two eyeglass cases that attach to the underside of the top and end flaps. There is an external pocket for added storage. It has a sturdy and comfortable leather top handle. The brushed nickel combination locks provide added security. H-14" x W-18" x D-8" Legal Carry-on. Warranty: 3 Years. P/N 14-00042 ..... $178.00

GELFLEX WHITE CREW LUGGAGE TAG

The Gelflex White Crew Luggage Tag is a great new version of a traditional Crew Tag. Black letters (CREW) on white background. On the back, there are spaces for you to write the following info: Name, Address, Phone, and Email. The back is coated with a special writeable surface. And best of all, it comes with a special flexible cord that enables you to attach it to your luggage or equipment without worrying about whether it will break or tear. 3-3/4" x 2-1/4.

White ..... P/N 14-02963 ..... $4.95

Blue ..... P/N 14-02960 ..... $5.50

PS

FLIGHT BAGS

SKY HIGH GEMINI

The Gemini flight bag is a fully padded duffle designed to protect the pilot's important gear. It is made with full sized compartment flaps, allowing easy organization of flight materials and access during flight - there is even a special stow-a-way pocket designed to hold most kneeboards. Everything is right where it should be - especially important during IFR flights. The center compartment has a double zipper opening with a padded quad-modular divider to segment the compartment for custom organization and easy access.

P/N 13-04254 ..... $83.95

SKY HIGH EXPLORER PRE FLIGHT POUCH

Our preflight pouch is made of durable 600D Polyester. It is designed to organize and hold your basic items for your preflight – Mini Mag size flashlight, fuel tester, pen/pencil, tire pressure gauge, and pliers or wrench. We have also included a grommet on the corner so you can attach a towel for wiping your hands clean. The Explorer will fit easily into any bag and has a Velcro strap to attach to your waist belt for convenience during the preflight.

P/N 13-03276 ..... $9.95

PROFLIGHT STUDENT PILOT BAG

The ProFlight Student Pilot bag is a great value! Black Cordura type material, carry strap. Great for students; use alone or as an accompaniment to your travel luggage. This bag is similar to the Jeppesen Student Pilot Bag in style and materials with multi side pockets. Size: (L)17" x (W)6" x (H)10"

P/N 13-06280 ..... $29.95

SCHEYDEN LUGGAGE VERY LIGHT KIT ENSEMBLE

The finest 3-piece flight crew luggage ensemble in the world. Manufactured in the USA using the finest materials and hardware available. Our ensemble is taller with a more slender profile (similar to that of a beverage cart) that allows you to slip down aisles of any aircraft to the flight deck with ease. Black.

VLK (Very Light Kit): • 12"H x 14"W x 5"D (2.8 lbs) • For pilots who have gone paperless • Perfect for iPads, laptops, or both • Ample storage for headset, flashlight, water bottle and gear • Removable padded shoulder pad • 1 Exterior zippered pocket • 1 Interior zippered pocket • 2 Interior breathable mesh pockets • 2 Interior side elastic loops to hold gear • Interior key holder • Interior ID holder • Made with Invista™ CORDURA® brand 1000 d water resistant nylon fabric up to 3x stronger and lasts up to 5x longer than standard polyester • Reliable and durable YKK® zippers and ITW Nexus® Buckles • Integrated Train Reaction™ luggage connecting system (Patent Pending Ser#12/348,857). Dimensions: 22.5. Weight: 13.2 Lbs. Limited lifetime warranty optional 5-Year NQA warranty upgrade.

P/N 13-14968 ..... $499.00
Embroidery ..... P/N 13-14972 ..... $20.00
NQA 5 Year Warranty ..... P/N 13-14973 ..... $149.00

SCHEYDEN LUGGAGE FLIGHT KIT ENSEMBLE

The finest 3-piece flight crew luggage ensemble in the world. Manufactured in the USA using the finest materials and hardware available. Our ensemble is taller with a more slender profile (similar to that of a beverage cart) that allows you to slip down aisles of any aircraft to the flight deck with ease. Black.

FK (Flight Kit): • 12"H x 14"W x 8"D • Ample storage for headset, flashlight, water bottle and gear • Removable padded shoulder pad • Two removable mesh clothing organizers • Interior horizontal clothing divider • Mesh zippered interior accessory pocket • One outside zippered pocket • Auxiliary side handle • Made with Invista™ CORDURA® brand 1000 d water resistant nylon fabric up to 3x stronger and lasts up to 5x longer than standard polyester • Reliable and durable YKK® zippers and ITW Nexus® Buckles • Integrated Train Reaction™ luggage connecting system(Patent Pending Ser#12/348,857). Dimensions: 22.5. Weight: 13.2 Lbs. Limited lifetime warranty optional 5-Year NQA warranty upgrade.

P/N 13-14970 ..... $499.00
Embroidery ..... P/N 13-14972 ..... $20.00
NQA 5 Year Warranty ..... P/N 13-14973 ..... $149.00

WEEKENDER COMBO FLIGHT BAG

The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. This bag is made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Grey ..... P/N 13-11385 ..... $72.75
Black ..... P/N 13-01434 ..... $72.75

NORAL EXTRA PADDED HELMET BAG

The swing hook for the adjustable shoulder strap is made of metal to ensure heavy load resistance. The shoulder strap has a soft rubber pad for your comfort and to keep the bag in fixed position while carrying on shoulder. This bag is made of 1680 Denier Ballistic water repellant material. Its interior is fully padded and covered with the liner of water repellant taffeta.

Grey ..... P/N 13-11382 ..... $89.95
Black ..... P/N 13-00262 ..... $89.90

CFI / IFR PILOT FLIGHT BAG

This bag has two side pouches equipped for large sized headsets. One of these side pouches has a flap pocket with a zipper closure to store pens, flashlight, ID card and/ or license etc. Inside the main compartment is two removable pouches for GPS/Transceiver. The dimension of main compartment is H11" X W14.5" X G10". In the front of the bag is a large open pocket for easy access. The back of the bag has two open pockets. Has two dividers in the main compartment that can be adjusted to a different position and can be removed if desired. Size: 11" x 23" x 12"

Black ..... P/N 13-00186 ..... $139.95
Grey ..... P/N 13-11375 ..... $139.95

BALLISTIC NYLON FLIGHT CASE 18"

Many RJ pilots requested a flight case design to fit the RJ cockpit. Using input from RJ pilots, CrewGear® created an RJ specific flight case. It has been flight tested by RJ line pilots who rated it an A+. Outside dimensions: 18.75" x 14.25" x 8.75" Color: Black. Fits most RJ flight case compartments

P/N 13-11599 ..... $114.95

BALLISTIC FLIGHT KIT

Made of durable ballistic fabric, this flight kit has internal dividers as well as external end and side pockets. A headset case and eyeglass case are provided, and attach to the underside of the top flap for easy accessibility. Sturdy protective runners on the bottom strengthen the bag. The flight kit also has a comfortable top handle. Security is enhanced by a set of combination lock clips. Dimensions: H-14" x W-19" x D-8.5" Legal Carry-on.

P/N 14-00553 ..... $146.75

ROLLING BALLISTIC NYLON FLIGHT CASE

Now roll your way through airports, crew parking lot, and down those eternally long concourses easily with CrewGear®'s Rolling Ballistic Nylon flight case. This flight case is loaded with unique features. Best of all, IT ROLLS! Color: Black. Inside dimensions: 18" x 13 1/2" x 8". Outside dimensions: 19 1/2" x 15 1/2" x 10 1/2".

P/N 14-00831 ..... $229.95

ULTIMATE "MULTI-TASKER" FLIGHT BAG PLUS

It's a Flight Case, an Overnight Bag, a Brief Case and Computer Bag all in one! Proudly designed by CrewGear®, this bag will accommodate a 2" JEP binder, pilot headset and all related work gear. There is a padded compartment for your Laptop Computer (14" or less), Net Book or iPad. The clothing compartment is perfectly sized for one pair of slacks, one shirt, and all your undergarments. The file-folder compartment is perfectly sized to hold documents, magazines and newspapers. That's not all; this bag also comes with a flight case organizer, toiletry pouch, hard-pocket sunglass/organizer case and a shock-absorbing shoulder strap. Weight: 5.15 lbs. (Empty) 6.10 lbs. (w/Accessories). Exterior Dimensions: 18" x 13.5" x 9.5". Color: Black

P/N 13-11598 ..... $151.90

PS

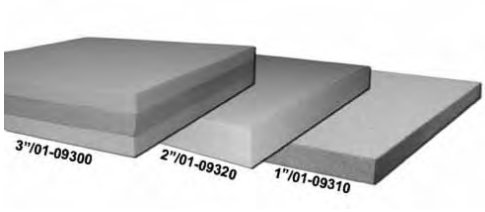
SEAT FOAM - FLIGHT SEATS

BACKSAVER FOAM

Backsaver foam is temperature sensitive, softening when it comes in contact with a warm surface; thus, in a seat cushion, the foam softens and conforms to the persons body. This provides even pressure distribution and unconstricted blood circulation, significantly reducing discomfort, even over long periods. In addition, Backsaver foam has excellent energy absorption properties, which have made it excellent for use in the U. S. space shuttle program and in military aircraft and helicopters. Pilots find that Backsaver cushions reduce their discomfort and fatigue, even on missions of 8 hours or more. Aircraft Spruce now makes Backsaver foam available to the homebuilt and general aviation market.

BACKSAVER FOAM 16" X 18" .....P/N 01-09325 ..... $92.50
BACKSAVER 36" X 80" FOAM .....P/N 01-09330 ..... $541.00

CONFOR FOAM SEAT CUSHION



Temperfoam is the conforming foam cushion that was developed for the "Astronaut's Couch" back in the Apollo space program. Seat foam has the capability of absorbing a tremendous amount of impact shock compared to common polyfoam and it is flame resistant. It is an excellent product that will give your seats enduring comfort that you never thought possible. It is not a soft seat, but it adapts to you for pressure- point-free comfort that is really incredible. The best universal cushion for aircraft use is a 3" T/38/T41/T47 laminate. Temperfoam is not currently FAA approved for certificated aircraft but is excellent for homebuilts. Some special sizes in 1", 2" or 3" thicknesses are available on special request.

1" x 16" x 18" .....P/N 01-09310 .....$25.50 ea.
2" x 16" x 18" .....P/N 01-09320 .....$48.50 ea.
3" x 16" x 18" .....P/N 01-09300 .....$83.75 ea.

INFLATABLE LUMBAR SUPPORT

This inflatable air pillow can be installed just under the seat material and will give you the customized support just where you need it. A convenient palmsize pump and a release valve control the firmness of the lumbar support. The In-Flight Back Support is made of a heavy duty self-extinguishing neoprene rubber, specially designed to pass FAR 23.853 flame-test requirements.

One inflatable lumbar support
P/N 13-01501 ..... $49.75
Two Inflatable lumbar supports ..... P/N 13-01821 ..... $81.95

SKWOOSH™ PILOT SEAT

SKWOOSH™ fluidized gel cushions are more comfortable because they relieve pressure on the "sitz" bones to help maintain circulation, and reduce numbness and lower back discomfort caused by prolonged sitting. The PILOT SEAT fits all aircraft seats, including those with a central harness attachment and it conveniently fits in most chart cases and carry-ons. The non-skid bottom makes SKWOOSH™ stay put, ensuring no movement during use while the low profile (½") allows for normal seat position. SKWOOSH™ cushions are made in the USA and are guaranteed for performance and workmanship. Weight: 8 oz. Open Dimensions: 10½"L x 15"W x ½"H. Folded Dimensions: 10½"L x 7½"W x 1"H.
P/N 13-05827 ..... $41.95

SKWOOSH PRO TRAVELER WITH AIR-FLO FABRIC

SKWOOSH™ fluidized gel cushions are more comfortable because they relieve pressure on the "sitz" bones to help maintain circulation, and reduce numbness and lower back discomfort caused by prolonged sitting. Non-skid bottom and is maintenance free. SKWOOSH™ cushions are made in the USA and are guaranteed for performance and workmanship. The patented, medically proven TekPad® gel is a lightweight, temperature stable, non-toxic composite . Weight: 8 oz. Open Dimensions: 10½"L x 15"W x ½"H. Folded Dimensions: 10½"L x 7½"W x 1"H
P/N 13-10284 ..... $54.75

PROFLIGHT SEATS

Sit higher, and sit softer on 2 or 3 inches of high-density foam covered with durable, "breathable" Cordura. Made of USAF specifications, with segmented backrest. Really makes a difference on a long flight. Also available: 3 or 4-inch thick child's cushion that finally lets kids see outside, keeps them interested as well as comfortable during long trips. Both seat and cushion are available in either Air Force blue or red. Add B (blue), or R (red) after part number to indicate color.

Dimensions for all Seats: Back: Width - 16" Height - 17" Seat: Width -15" Depth - 12"

Description	Part No.	Price
Blue 2" Booster seat w/ 1-1/2" back	13-02916	$59.95
Red 2" Booster seat w/ 1-1/2" back	13-02917	$59.95
Blue 3" Booster seat w/ 1-1/2" back	13-02918	$59.95
Red 3" Booster seat w/ 1-1/2" back	13-02919	$59.95
Blue 3" Booster seat w/ 3" back	13-02920	$59.95
Blue 4" Booster seat w/ 1-1/2" back	13-31855	$59.95
Red 3" Booster seat w/ 3" back	13-02922	$59.95
Child's Blue 3" Booster cushion	13-02923	$24.95
Child's Red 3" Booster cushion	13-02924	$24.95
Child's Blue 4" Booster cushion	13-02925	$33.90
Child's Red 4" Booster cushion	13-31861	$33.90
Blue - 4" Seat x 3" back	13-31845	$59.95
Red - 4" Seat x 3" back	13-31850	$59.95
Red - 4" x 1-1/2" back	13-31860	$59.95
Red - 2" Seat x 4" back	13-02863	$59.95
Red - 3" Seat x 4" back	13-02864	$59.95
Green - 4" Seat x 1-1/2" back	13-02866	$59.95
Green - 2" Seat x 1-1/2" back	13-02868	$59.95
Green - 3" Seat	13-02871	$37.25
Blue - Cut for flight stick 4" Seat w/ 1-1/2" back	13-12077	$59.95
Olive Drab - 4" Seat x 3" back	13-03029	$37.95
Gray - 4" Seat x 3" back	13-02865	$59.95
Gray 4" Booster Seat - No Seat Back	13-02860	$32.95

NORAL SEATS

This cushion is made with the finest materials available. It features a high back with a Lumbar Support for added comfort. The foam inside meets FAA FAR regarding fire materials. A strap is present for easy carrying and securing the cushion to the back of the seat when installed. Available in 2 sizes marked Type 'A' & Type 'B'.

Label 'A' fits Cessnas 172/182/172 Cutlas /210 and other larger seats.

Label 'B' fits Cessnas 150/152, Piper, Archer, Warrior, Cherokee, and similar seats.

Available only in Black, Navy Blue, & Smoke Grey.

Color	Part No.	Price
2" Seat Cushion - Type B		
Black	13-00323	$65.75
Grey	13-00326	$65.75
3" Seat Cushion - Type B		
Black	13-00331	$81.75
Grey	13-00333	$81.90
4" Seat Cushion - Type B		
Black	13-00338	$88.95
Grey	13-00341	$88.95
Color	Part No.	Price
2" Seat Cushion - Type A		
Black	13-00327	$69.75
Grey	13-00329	$69.75
3" Seat Cushion - Type A		
Black	13-00334	$83.75
Grey	13-00337	$83.75
4" Seat Cushion - Type A		
Black	13-00342	$89.90
Grey	13-00344	$89.95

Color	Part No.	Price
2" Seat Cushion only		
Black	13-00346	$38.85
Grey	13-00348	$38.85
4" Seat Cushion only		
Black	13-00224	$45.50
Grey	13-00227	$45.50
Color	Part No.	Price
3" Seat Cushion only		
Black	13-00221	$43.50
Grey	13-00223	$43.50

BLACK MAX COMFORTLITE SEAT

* 18" Wide X 19" Deep x 26" High
* 6061-T6 Aluminum Base and tubing.
* Assembled with AN Hardware.
  Material made from durable cordura nylon
* Includes a large storage pocket in the back
* Additional storage between pan and seat
* Pivots down to make it easier to get in behind the seat on a tandem

P/N 13-05554 ..... $218.95

PS

OREGON AERO® SEATING SYSTEMS

Oregon Aero® VK SmartCushion™ Systems for Experimental and Homebuilt aircraft offer maximum-comfort seating designed for your particular aircraft. The VK SmartCushion™ System shifts the hips, pelvis and back into a comfortable sitting position. At the same time, the seat cushions support occupants over as large an area of the seat surface as possible, preventing painful "hot spots." Pilot and passengers fly in comfort-no matter how long the flight. Simply put, Oregon Aero® offers the most comfortable seat in the industry All Oregon Aero® Seating Systems are 100% Satisfaction Guaranteed.

OREGON AERO® SEAT CUSHION GLASAIR I, II, III

GlasAir I (Pilot), II, III Left or Right Cushion Set un-upholstered cushion core.

NOTE: Cushion set includes: (1) back and (1) bottom cushion. Price per set.

Description	Part No.	Price
GlasAir I Pilot Left or Right Cushion Set	13-07474	$357.95
GlasAir II or III Left or Right Cushion Set	13-07475	$364.00

OREGON AERO® SEAT CUSHION GLASTAR

Glastar Left & Right Front Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Glastar Left Front Cushion Set	13-07476	$453.95
Glastar Right Front Cushion Set	13-07477	$453.95

OREGON AERO® SEAT CUSHION LANCAIR 320/360/IV PILOT/LEGACY

Lancair 320/360/IV Pilot/Legacy Left or Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Lancair 320/360 Left Front Cushion Set	13-07478	$498.00
Lancair 320/360 Right Front Cushion Set	13-07479	$498.00
Lancair IV Pilot or Co-Pilot Cushion Set	13-07480	$321.95
Lancair Legacy Left or Right Cushion Set	13-07481	$575.00

Front Rear

OREGON AERO® SEAT CUSHION RV-4

RV-4 Front & Rear Cushion Set un-upholstered cushion core

Description	Part No.	Price
RV-4 Front Cushion Set	13-07482	$321.95
RV-4 Rear Cushion Set	13-07483	$429.95

OREGON AERO® SEAT CUSHION RV-6

RV-6 Left or Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
RV-6 Left or Right Cushion Set 2"	13-07484	$321.95
RV-6 Left or Right Cushion Set 3"	13-07485	$321.95

OREGON AERO® SEAT CUSHION RV-7/RV-9

RV-7/RV-9 Pilot and Co-Pilot Cushion Set un-upholstered cushion core.

Description	Part No.	Price
RV-7 Pilot or Co-Pilot Cushion Set	13-07486	$342.00
RV-9 Pilot or Co-Pilot Cushion Set	13-07487	$321.95

OREGON AERO® SEAT CUSHION RV-8

RV-8 Front and Rear Cushion Set un-upholstered cushion core.

Description	Part No.	Price
RV-8 Front Cushion Set	13-07488	$362.95
RV-8 Rear Cushion Set	13-07489	$453.95

1 INCH PORTABLE UNIVERSAL SOFTSEAT® CUSHION SYSTEMS

Shifts your hips, pelvis and back into the proper, pain-free position. Helps minimize lower back pain from prolonged sitting. Eliminates pain from "hot spots." Can raise or move you forward. Zippered and interchangeable parts. 100% satisfaction guaranteed.

Two anchor options available: (1) Non-Skid Strips (most popular option) Two 1" wide x 10" long strips of black webbing with black non-skid rubber are hand sewn to the bottom of the cushion. (2) Straps - Best option if using Cushion Base for one purpose, such as in an aircraft. One-inch straps with adjustable buckle are hand sewn from side-to-side. Two hook and loop fasteners are hand sewn to the back.

1" Cushion is the most commonly used thickness. 1/2" Cushion is available for individuals with limited headroom. 2" Cushion available for individuals who need raised up. See www.aircraftspruce.com for additional sizes.

Color	Non-Skid Strips	Price	Straps	Price
Burgundy	13-08611-1	$210.95	13-08614-1	$224.95
Blue	13-08611-2	$210.95	13-08614-2	$210.95
Teal	13-08611-3	$210.95	13-08614-3	$210.95
Beige	13-08611-4	$224.95	13-08614-4	$225.95
Gray	13-08611-5	$225.95	13-08614-5	$210.95
Charcoal	13-08611-6	$224.95	13-08614-6	$210.95
Black	13-08611-7	$224.95	13-08614-7	$210.95

OREGON AERO® SEAT CUSHION VELOCITY

Velocity Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Velocity Cushion Set	13-07490	$352.95

OREGON AERO® SEAT CUSHION ZENITH/ZENAIR

Zenith/Zenair Left and Right Cushion Set un-upholstered cushion core.

Description	Part No.	Price
Un-upholstered CH701 Left cushion	13-07491	$298.00
Un-upholstered CH701 Right cushion	13-07492	$298.00
Un-upholstered CH601 Left cushion	13-07493	$301.95
Un-upholstered CH601 Right cushion	13-07494	$301.95

PS

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CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SEAT COVERS – SUN VISORS

SUPERLAMB SHEEPSKIN SEAT COVERS: NATURES OWN THERMOSTAT

The magic of 100% genuine sheepskin is quite simply that it will keep you cool in summer and warm in winter. No other natural or man-made fiber possesses the qualities of sheepskin. Whatever the temperature in your cockpit, sheepskin covers remain almost the identical temperature. Additionally, each hollow fiber absorbs up to 30% of its own weight in moisture. It keeps you dry, yet never feels wet itself. You avoid the heat and clamminess of vinyl, or even leather, because there's free flow of air between you and seat. Every cover is hand-made by master craftsmen from the finest chrome-tanned pelts, in colors to match or coordinate with any interior. Sold in pairs only, in 11 colors (request color samples when ordering). FAA Approved.

Available for the following planes: Beechcraft: Baron B-55, E-55, B-58, Bonanza V-35 (A or B), A-33, A-36, F-33A, A36TC. Cessna: 150, 152, 172, 177, 180, 182, 185, 210, 310, 340, 402, 414, 421. Aero Commander: 500, 600, 900, Piper: Archer, Cherokee, Warrior Tomahawk.

Specify year, make model and color choice when ordering. Car seat covers also available in same colors. Call for a price.

Superlamb Sheepskin Seat Covers (pair).....P/N 7736.....$513.00

Sheepskin Samples - Order a sample then return it for a full credit after you have selected a color and ordered your seat cover.....P/N 13-05553.....$50.00

COLORS AVAILABLE

Black	Navy	Charcoal	Metallic Blue	Oyster	Natural	Bamboo	Beige
Honey Tan	Oak	Mushroom	Creme	Silver	Mid Grey		

ROCKY MOUNTAIN SHEEPSKIN SEAT COVERS

Note: These are priced and sold individually.

Made in the US, our finest quality, 100% pure Australian merino sheepskin seat covers. Tailored from our exact current blueprints, or customized to your specifications, no matter what type of seat, the fit is perfect. Super plush, 1" thick sheepskin adds the greatest comfort, durability and protection for your seats. Hidden straps and elastic borders completely secure covers to seat. Available in 14 colors, shown below. Warranty: 4 years craftsmanship, 2 years materials. Fire testing compliance as per FAR 23.853

If requesting a color swatch please note: A refund is available for color swatch when returned in same condition received prior to order.

Description	Part No.	Price
Cessna 172s,182,210 (1995-2012) Sheepskin Cover	13-12242	$225.00
Cessna Sheepskin Covers (Specify Aircraft)	13-12243	$225.00
Beech Premier Sheepskin Cover	13-12244	$283.95
Beech Premier Sheepskin Covers	13-12245	$289.00
Pilatus PC 12 Sheepskin Cover	13-12246	$289.00
Sheepskin Covers Rear Bench	13-12267	$489.00
Sheepskin Covers Headrest	13-12268	$69.00
Sheepskin Covers Armrest	13-12269	$119.00
Socata TBM 700/850 Sheepskin Cover	13-12271	$289.00
Quest Kodiak Sheepskin Cover	13-12272	$289.00
Sheepskin Seatcover Universal	13-12273	$225.00
Sheepskin Door Armrest Cap Small	13-12356	$19.95
Sheepskin Door Armrest Cap Large	13-12357	$29.95

SUN SPOTS

* Front & Side Windows, Passenger side Windows. Also place onto Existing Transparent Sun Visors for extended coverage & darker shade "D" * Two 5-1/2" dia. disks, easy handling & storage * Suction cup attachment, lightweight, 4 mills thick * Disk rotate 306° "B", for total of a 10" diameter * 2 disks overlap for double shade strength "A" * Separate disks for single shade strength "B" * Split disks for half & half shade strength "C" P/N 13-06774..... $13.95

PILOT ARMOR™ GENERAL PURPOSE SUNSHADES

This general purpose sunshade provide "spot relief" on windows of any size. They are easily attached and removed to provide sun and glare protection wherever you need it. Made of commercial grade exterior polyester blended Sun Protection screen that has been treated and sealed with a reflective polymer which gives the fabric its protective features. • Excellent solar protection-eliminates up to 86% of the sun's rays, excellent thermal reflective features • Ideal compromise between solar protection and light transparency • Provides significant external visibility • For use on the ground or in the air • Will not damage acrylic windows • Full custom sets available, call us at 877-477-7823 for a quote.

Size	Part No.	Price
9.5"x6"	13-09666	$19.50
11"x6"	13-09665	$21.65
16"x9"	13-09664	$28.70
15"x22"	13-09662	$37.90
16"x16"	13-09663	$32.50

BONANZA/BARON ADJUSTABLE SUN VISORS

Aerospace construction means they work flawlessly, plus they are very adjustable. Rotate them up and down, turn to cover the side windows and slide them in and out for coverage where you want. P/N 05-03434..... $432.00

SUNGUARD SLAP ON SUN VISOR

Sunguard is a transparent polymer, that will statically attach to any smooth surface (windows in cars, boats, aircraft, RV's and homes). It is available in "olive green" tinted shade and absorbs approximately 78% of the light spectrum.

6X9.....P/N 13-08666..... $3.95

9X12.....P/N 13-08667..... $6.95

CLEAR VIEW SUN VISORS

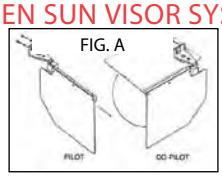
These visors are STCd & PMAd for Bonanza, Barons, and Travelairs. All the visors have 3 axis movements, thumb screw adjustable extenders, & UV protection. Component parts include brass and stainless steel fittings to assure non-binding operation. Clear View visors provide improved visibility, enhanced aircraft interior, and can be used as a sunshade when not in use as a sun visor. These visors are easily adjustable with extended coverage and precise placement. STC for Beech, Bonanza, Baron, and Travelair. Please specify aircraft make and model when ordering.

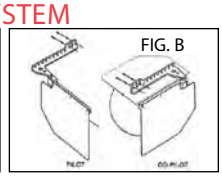
P/N 13-00102.....$289.95

PS

SUN VISORS

ROSEN SUN VISOR SYSTEM





Sun visors rotate and extend to offer complete cockpit protection form the sun. The oversize, tinted lens filters out 95% of the ultraviolet rays, reduces glare by 94% and heat by 86%. Distortion free. Fully STC'd and PMA'd. The system, which includes pilot and co-pilot visors, installs in minutes. (Exceptions: C-210 non-pressurized requires 1.5 hrs, C-152 requires rivnut installation by an A&P, C-177 req. 6-8 hrs.). Visit or website for specs., installation, and application data.

Aircraft	Part No.	Price
BEECH - Bonanza/Baron, standard	7568	$329.00
Bonanza/Baron,3rd Axis option	7311	$404.00
Duke	7738	$328.95
King Air	13-01927	$382.00
King Air 200 Monorail with visors (not for A200)	13-12787	$1,035.95
MOONEY - 1968 and later models original visors mounted on right or left side (not on center post)	7762	$398.00
PIPER - Comanche, All models,standard	7809	$349.00
Comanche, Third Axis option	7924	$418.00
Aerostar Monorail System	13-15027	$1,098.00
Cheyenne Monorail system w/visors	13-15028	$1,042.00
Cheyenne w/ 3rd Axis Visor Assy	13-15029	$1,147.00
Malibu Mirage Monorail System	13-15030	$1,459.00
Malibu Meridian Monorail System	13-15031	$1,459.00
Arapaho Comanche	13-07454	$397.95
Cherokee, Center mount	13-01315	$398.00
Cherokee, swivel stud	13-01316	$404.00
Seneca	13-01317	$404.00
CESSNA 1980 and later - 170's to 206's (except 177's) Center Mount	7629	$329.00
All 150's and 152's. Prior to 1980 - 170's - 206's (except 177's) Side Mount	7006	$329.00
Cessna 180 3rd axis (1981 & later)	13-03174	$398.00
210's w/o air cond. (Older 210's, see above)	7152	$359.00
P210's and 210's w/air conditioning	7426	$359.00
177's	7582	$389.00
T303	13-01928	$452.95
310s & 340s, special order to replace units with ball-joint cover style visor only (shown)	7687	$418.00
337	13-01308	$453.00
320	13-01311	$452.95
350/400	13-06044	$514.00
400	13-01312	$452.00
400 Monorail with visors	13-14937	$688.00
412B	13-05180	$452.95
Citation 500/501 Monorail with Visors SN>213/	13-14938	$1,050.00
Citation 500/501 Monorail with Visors SN<213/	13-14938	$1,050.00
Citation 3rd Axis Visor Assy.	13-14940	$377.00
Citation III Monorail with visors	13-14941	$1,241.00
Mustang Monorail System	13-14942	$1,222.00
Mustang w/ 3rd Axis Visor Assy.	13-15008	$376.75
GRUMMAN - Cheetah	13-01313	$426.95
RV-10 - Rosen Sun Visor Set - RV-10	13-05695	$398.00
Rosen Sun Visor - Pilot Side	13-05696	$199.95
Rosen Sun Visor Set - Copilot Side	13-05697	$199.95
MAULE	13-02471	$404.00
Rockwell Commander 114	13-03328	$398.00
OTHERS*		
Cirrus SR20 / SR22	13-03258	$404.00
Lancair IV	13-01934	$418.00
Aero Commander Monorail System w/ Visors	13-14850	$999.75
Aero Commander Replacement Lens Only	13-14928	$49.75
Aero Commander Visor Assy. Only	13-14930	$315.00
Bell 206 Jet Ranger Monorail w/ Visors	13-14931	$1,149.00
Bell 206 Long Ranger Monorail w/ Visors	13-14932	$1,149.00
Bell 206 Jet Ranger with AC Monorail System	13-14933	$1,149.00
Bell 222 Monorail System w/ Visors	13-14934	$1,143.00
BK117 Monorail System w/ Visors	13-14935	$1,759.00
BAC1/11 Monorail System w/ Visors	13-14936	$2,000.00
Challenger 600,601, 604 Monorail System w/ Visors	13-15009	$1,695.00
Challenger 600, 601, 604 Replacement Lens	13-15010	$97.75
Challenger 600, 601, 604 Visor Assy Only	13-15011	$338.00
Falcon 20 Monorail System w/ Visors	13-15012	$1,475.00
Falcon 50 200 Monorail System w/ Visors	13-15016	$1,475.00
Gulfstream I, II Monorail System w/ Visors	13-15017	$1,359.00
Gulfstream III Monorail System w/ Visors	13-15018	$1,941.00
Gulfstream iV Long Beach Monorail System w/ Visors	13-15019	$1,941.00
Gulfstream IV Savannah Monorail System w/ Visors	13-15020	$1,941.00
Gulfstream IV Kansas City Monorail System w/ Visors	13-15021	$1,941.00
Gulfstream 200 Galaxy Monorail System w/ Visors	13-15022	$2,139.00
Hawker 700 Monorail System w/ Visors	13-15023	$1,359.00
Hawker 750, 800, 850, 800XP, 850XP, 900XP, 1000 Monorail	13-15024	$1,439.00
Lear 45 Monorail System w/ Visors Standard Size Lens	13-15025	$1,238.00
Lear 45 Monorail System w/ Visors Small Size Lens	13-15026	$1,238.00
Homebuilders Universal surface mount	13-03175	$397.95
Homebuilders Universal tube mount	13-03176	$397.95
Monorail iPad I Short Hood Mount	13-14963	$178.75
Monorail iPad I Long Hood Mount	13-14964	$178.75
Monorail iPad Mini Short Hood Mount	13-14966	$178.75
Monorail iPad Mini Long Hood Mount	13-14967	$178.75

Homebuilders Universal systems are specific order & built to your specs

ROSEN THIRD AXIS UPDATE KIT: This update kit will fit any Rosen system that does not come standard with third axis option (Piper systems, for examples, come with third axis stanard).....P/N 13-04014.....$72.85

DIM-IT MOVEABLE VISOR

You can keep moving your head to stay in the shade of your visor, or you can get a DIM-IT visor and move it to where you want it. It's a 6"x12" sheet of tinted Lexan that can be positioned on any window in the cockpit by means of the attached vinyl suction cup. (An optional self-adhesive adapter plate lets you attach it to porous surfaces as well.) Completely transparent and distortion-free.

DIM-IT Moveable Visor.....P/N 7172.....$7.95
Adapter (for porous surfaces).....P/N 7113.....$4.65

MINI DIM-IT

Diminishes the intensity of direct sunlight, glare, and reflections. This little visor is made of high strength tinted Lexan and is distortion-free. Place the suction cup on window/windshield and press. P/N 13-01758.....$6.95

ADJUSTAVISOR

The Adjustavisor, a clip-on unit that virtually doubles the effective range of stock visors, adds contrast, and reduces glare and fatigue. Available with smoke polycarbonate lens with UV protection. There's also a suction cup model for aircraft with canopies. The cups are strong enough and the visor assemblies light enough that they stay attached to any window through most any maneuver. Size:3.5"x 12".

Clip-on (smoke).....P/N 13-03263.....$121.95
Suction (smoke).....P/N 13-03261.....$107.95

ROSEN VANS RV 6-7-9 ARC SUNVISOR

The Van's RV 6-7-9 Sliding Canopy ARC Sunvisor System design provides Van's RV 6-7-9 aircraft owners flexible, multi-axis sun attenuation, glare reduction and pilot comfort during standard cockpit flight operations.

Description	Part No.	Price
Rosen Vans Rv 6-7-9 ARC Sunvisor Assembly	13-16034	$435.00
Rosen Vans Rv 6-7-9 ARC Pilot Replacement Lens	13-16035	$69.95
Rosen Vans Rv 6-7-9 Co-pilot ARC Replacement Lens	13-16036	$69.95

RV-10 SUN VISOR

Blue Sky Sun Visors were specifically designed for the RV-10. The RV-10 visors retain all of the features of those that have been produced for certified aircraft since 2001. The visors provide improved visibility in hazy or cloudy conditions while still being out of the pilot's view when not in use. In addition to retaining the superior functionality, durability, and strength of the original Blue Sky Sun Visor, they provide sun and heat screening, whether coming from the front or side for both pilot and co-pilot. Installation is quick and requires only basic tools and mechanical ability. P/N 13-07444.....$198.00

UNIVERSAL SUNVISOR FOR HOMEBUILT AIRCRAFT

Universal Swivel Mounts - simplify installation into most homebuilt aircraft! Lightweight hardware and optical quality bronze acrylic visor. Designed, and visor tint specified, by eye doctor/pilot Dr. Steven DeGroff, to reduce, high-altitude and ocular media small-particle scatter and enhance vision at dusk, after sunset, when scotopic vision is used. Hundreds of same class visors are field-approved and in use in the Comanche fleet. P/N 13-07443.....$222.95

ROSEN CREW SUNSHADES

CrewShade is easily fixed to the side windows with (2) attached suction cups. Folds and stores in the included 6" diameter carrying pouch when not in use. Shade dimensions: 14 ½" x 17 ½"

P/N 13-06271.....$13.95

ROSEN MONORAIL IPAD MOUNTS

Monorail iPad Mount. This mount naturally displays the iPad in either a deployed or stowed position with one-hand tension control and multi-directional adjustability. Available for the iPad II and iPad III with long and short arm options. iPad not included."

Description	Part No.	Price
iPad I Short Hook Mount	13-14963	$178.75
iPad I Long Hook Mount	13-14964	$178.75
iPad II Short Hook Mount	13-12353	$178.75
iPad II Long Hook Mount	13-12362	$182.75
iPad III Short Hook Mount	13-12363	$182.75
iPad III Long Hook Mount	13-12364	$182.75
iPad Mini Short Hook Mount	13-14966	$178.75
iPad Mini Long Hook Mount	13-14967	$178.75

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AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

SUN SHIELDS – CANOPY COVERS

KENNON SUPER SUN SHIELDS

The most durable sun shield on the market has a clear polyester coating to protect the plexiglass windows. Heat can permanently damage the interior and avionics in your aircraft. The secret is a material with two surfaces of aluminum separated by trapped air. This combination reflects 97% of radiant heat, an insulation value of R-9 equivalent to two inches of fiberglass. Kennon Extra Firm shields fit snugly, and maintain their shape for a tight fit. They install in no time, and roll up for storage in compact, water-repellent bags. Weight is 1Lb. Available for most aircraft, specify year, make and model. For custom shields, specify exact size of windshield & windows. Also available for cars. Fabric edging insures snug fit & durability.

General Aviation ..... P/N 7672 ..... $178.00
Business Class ..... P/N 13-01071 ..... $225.95

PIPER SUNVISOR CATCHES

Many Piper aircraft have the same problem. The sun visor catches lose to stability, because the UV effect allows the plastic to become porous. These Piper Sunvisor Catches are made from a blended poly-plastic with a UV additive that will prevent UV corrosion. A set contains two pieces with the required plastic rivets. They are available in white and black (used in Piper PA-38 Tomahawk). The set for the Piper Tomahawk contains two extra rivets.

White ..... P/N 13-04187 ..... $33.85
Black ..... P/N 13-04188 ..... $33.85

KENNON COWL PLUGS

Kennon cowl plugs are constructed from red Aqualon over 2" thick foam and feature a binding around the outer edge of each plug so there is a tight seal which fits snugly in the cowl. This lip prevents the plugs from slipping inside the opening. A safety strap goes around the prop so if by chance you forget to remove the plugs, the prop will remove them for you. These cowl plugs install easily and comes with their own storage bag. Specify aircraft make, model & year when ordering. Include aircraft registration number to be printed on plugs at no extra charge.

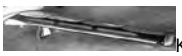
Single engine plugs ..... P/N 13-14111 ..... $95.00
Twin engines plugs ..... P/N 13-06212 ..... $190.00

CUSTOM FIT COWL PLUGS

These cowl plugs are tailored to fit popular Cessna and Beech single engine aircraft. High visibility yellow closed cell foam will not retain moisture. Printed on one side is "Remove Before Starting Engine", and the other is blank for the N#. They are joined by a nylon strap with a fluorescent orange Remove Before Flight flag. Please use following part no's. to specify aircraft.

C-150 (2 Hole Only) ..... P/N 13-02620 ..... $36.95
C-172 (1965+) ..... P/N 13-02625 ..... $34.95
C-182 (1972.5 - 1989) ..... P/N 13-02630 ..... $36.95
B33-35 ..... P/N 13-02637 ..... $34.50

Universal kit w/square inlets (Sqr blocks you cut to fit)
P/N 13-02645 ..... $31.50/pr



KENNON WIND SPOILERS

Kennon Wind Spoilers are a strip of soft fiber filled tubes that attach to the wing to slow airflow over the top and to prevent lift. An airplane was built to fly, given a strong wind, the plane will fly without you and no tie down will restrain a flying airplane for long. During the stormy winter of 1998, over 200 airplanes were picked up and destroyed by strong winds. Kennon Wind Spoilers could have saved many of these aircraft. The wind spoilers cover the leading edge of the wings but not the tips, and most are about 14.5 ft long (per wing). Specify aircraft make, model, year when ordering. P/N 13-14180 ..... $148.95/pr

KENNON COWL CAP COVERS

This small cover goes over the inlets and back onto the cowl about 12 inches. It closes under the spinner with Velcro. There are bungees with hooks on the two rear corners that keep the cover pulled back in place. The material used is Red Sunbrella: UV resistant, water resistant and yet breathable. This is a great alternative to plugs that often slide out of the opening or do not wedge straight in the opening due to the inside shape. Covers are available with Tail Number identification through a sewn on embroidered patch. Please specify aircraft year, make and model.

Single Engine ..... P/N 13-09884 ..... $195.00
Single Engine with small embroidery ..... P/N 13-11958 ..... $210.00
Single Engine with large embroidery ..... P/N 13-11959 ..... $220.00
Twin Engine ..... P/N 13-09884-2 ..... $390.00

PROPPASTIE

A ground-use only cover that will minimize snow, ice, and water from lying on your propeller hub bearings and freezing inside your spinner. Made of the highest quality UV-stabilized materials, designed to withstand all but the most extreme temperatures. Tested to remain in place in up to 51 mph wind gusts. Velcro, holds the PropPastie in place. P/N 13-10282 ..... $34.95

KENNON CABIN COVER - LOW WING

Kennon's Low Wing Cabin Cover covers the top of the cabin, the antennae and the entire window area. Made from Sunbrella which is designed to withstand the sun's ultra violet rays. Sunbrella is the award winning UV resistant outdoor fabric. It is very soft and breathable so it is safe to use as a year round cover on any aircraft. Each cover is custom built for the specific year, make and model of aircraft. You will be asked for aircraft year,make, model, and registration number when ordering this item. There is an additional cost for the microfiber lining, and the cost varies based on aircraft. Color of cover and trim is standard silver weathermax, custom colors available for additional fee: of $75.00

P/N 13-04047 ..... $449.00

KENNON DUST COVERS

The Kennon Dust Covers keeps dust, birds, and bird droppings off aircraft stored in hangars. Made from 210 Denier Nylon, the cover is soft, lightweight, and machine washable. Will not scratch the aircraft. It is easy to put on, with the elastic hem fitting around the nose, wing, and tail. Stores in its own storage bag and weighs only 10lbs. Available in sizes to fit any aircraft from homebuilt to military. Specify year, make & model of aircraft when ordering. Color: Black or Blue. Stock Color is Black. For Special order color (blue or red) add $28.95

Small for aircraft up to 21 ft long, wingspan to 31 ft.
P/N 13-14145 ..... $405.95
Med. for aircraft up to 30 ft long, wingspan to 37 ft.
P/N 13-14146 ..... $524.95
Light Twin up to 35 ft long w/wingspan to 40 ft.
P/N 13-14147 ..... $615.95
Red or blue color covers ..... P/N 13-06411 ..... $28.95
Other aircraft - Custom Made - Call for price

KENNON SUN BLOCKER AIRCRAFT COVERS

Kennon's Canopy Cover is constructed from silver WeatherMax. Provide Kennon with antenna measurements and we will tailor the cover so it fits neatly around antenna, OAT boot and ADF wires at no additional charge. Kennon's deluxe canopy cover is constructed with polyester WeatherMax and lined with anti-grit to prevent sand and dirt from adhering to the fabric and later scratching your windows.

Weathermax is an engineered polymer material uniquely designed specifically for constant outdoor use. It is extremely UV resistant and extremely resistant to fading and color loss. This fabric is breathable, abrasion resistant and eliminates sagging. Static charged acrylic windows attract dust and dust scratches. Kennon's new Anti-Grit lining helps reduce static and further helps prevent scratching.

Choice of Trim Color.
See www.aircraftspruce.com for Kennon Color Chart.

HIGH WING WRAP-AROUND COVER – Cessna120-210, Cessna 337; L-19; PA10, PA22 including Pacer, Tripacer, Cub, Super Cub, Colt, Luscombe, Stinson 108, Aeronca, Citabria, Maule, Rockwell 685/690/980, Aviat, Christian Husky, Lake Renegade
Deluxe ..... P/N 13-04450-D $395.95

LOW WING WITH 2 SIDE WINDOWS- This is for a 4 seat plane
Deluxe ..... P/N 13-04451-D $427.95
Deluxe ..... P/N 13-14149-A $425.95

LOW WING WITH 3 SIDE WINDOWS – Earlier than 1971 Piper Cherokee VI,Piper, PA28 181, 200, 235 incl. Arrow, Archer & Warrior, Dakota, Aerospatiale, Trinidad, Tobbago, Piper Commanche (Some but not all...ASK), Aztec, Apache, Cessna 310 (exception to 2 window rule)
Deluxe ..... P/N 13-14148-D $475.95

LOW WING WITH 4 SIDE WINDOWS – Piper Cherokee VI, Lance, Saratoga, Malibu, Seneca, Aerostar, Beech Baron 58, Beech 33, 36, Beech King , Air (Cockpit), Lear 2500, 3500 (Cockpit)
Deluxe ..... P/N 13-14149-D $590.00

LOW WING WITH 4 TO 5 SIDE WINDOWS – Piper Navajo Chiefton, Cheyenne, Cessna 340, 402, 414, 425, 441, Citation, Beech Duke
Deluxe ..... P/N 13-14150-D $665.00

LANCAIR & ZENAIR CANOPY COVERS

These custom designed covers for the Lancair 235/320 & the Zenair Zodiac canopy are made of acrylic Sunbrella fabric and are available in blue, grey, or white. The 100% acrylic fabric wont shrink, fade, or rot. Nylon webbed straps assure secure fit while snap together buckles permit fast adjustment, fastening, and release. Side adjustments provide tight fit. These covers will protect your avionics and interior from sunlight and heat damage. Color: Blue

Lancair Blue Canopy Cover ..... P/N 13-14110 ..... $425.00
Kennon ZenairBlue Canopy Cover ..... P/N 13-14140 ..... $398.00

PS

BRUCE'S CUSTOM COVERS

BRUCES CUSTOM CANOPY COVERS

Canopy Covers help reduce damage to your airplane's upholstery and avionics caused by excessive heat, and they can eliminate problems caused by leaking door and window seals. They keep the windshield and window surfaces clean and help prevent vandalism and theft When requested, it is also sometimes possible to design Canopy covers that can attach to the aircraft fuselage using pop-riveted snap-heads at the rear and snap-head screws on the engine cowl. The Canopy Cover is custom sewn and the corners are trimmed to match the colors of the airplane. The airplane's registration number can be im-printed onto both sides of the cover for an additional charge. A duffle bag is included with all Canopy Covers. Made from Silver Acrylic Sunbrella or Silver Solution-Dyed Polyester and is lined 100% with a soft and smooth microfiber. The outer material is medium-weight and treated for water resistance, UV resistance and anti-static buildup. The inner lining is a very soft and smooth microfiber to prevent scratching. Does not contain hydrocarbon compounds that can harm Plexiglas windshields and acrylic finishes. Other colors are available. Please contact us for availability and price. Light weight material available.

Description	Part No.	Price
C350 & C400 Corvalis, Corvalis Tt	13-15233	$555.00
Cessna 150 & 152 Wrap-around Style	13-15126	$411.00
Cessna 170 Wrap-around Style	13-15141	$454.00
Cessna 172 & 175 (t-41, T-41a/c) Wrap-around Style	13-15157	$454.00
Cessna 177 Cardinal Wrap-around Style	13-15172	$454.00
Cessna 180/185 Skywagon Wrap-around Style	13-15185	$454.00
Cessna 182 Skylane Wrap-around Style	13-15210	$464.00
Cessna 206 Stationair Wrap-around Style	13-15217	$464.00
Cessna 210 Centurion Wrap-around Style	13-15226	$464.00
Travel Canopy Cover C350 & C400	13-15234	$347.00
Travel Canopy Cover Cessna 150 & 152 Wrap-around Style	13-15127	$240.95
Travel Canopy Cover Cessna 170 Wrap-around Style	13-15142	$240.95
Travel Canopy Cover Cessna 172 & 175 Wrap-around Style	13-15159	$240.95
Travel Canopy Cover Cessna 177 Cardinal Wrap-around Style	13-15173	$240.95
Travel Canopy Cover Cessna 180/185 Skywagon Wrap-around Style	13-15186	$240.95
Travel Canopy Cover Cessna 182 Skylane Wrap-around Style	13-15211	$240.95
Travel Canopy Cover Cessna 206 Stationair Wrap-around Style	13-15218	$240.95
Travel Canopy Cover Cessna 210 Centurion Wrap-around Style	13-15227	$240.95
Beech Bonanza/Debonair	13-15089	$555.00
Beech Bonanza 36 Models	13-15099	$587.00
Beech Baron 58	13-15111	$682.00
Travel Canopy Cover Beech Bonanza/debonair	13-15090	$347.00
Travel Canopy Cover Beech Bonanza 36 Models	13-15101	$347.00
Travel Canopy Cover Beech Baron 58	13-15112	$347.00
Diamond Da20, Katana, Eclipse	13-15263	$400.00
Diamond Da40	13-15270	$496.00
Travel Canopy Cover Diamond Da20, Katana, Eclipse	13-15264	$347.00
Travel Canopy Cover Diamond Da40	13-15271	$347.00
Grumman Aa1	13-15277	$400.00
Grumman Aa5	13-15286	$496.00
Travel Canopy Cover Grumman Aa1	13-15278	$347.00
Travel Canopy Cover Grumman Aa5	13-15287	$347.00
Lancair Columbia 300,350,400	13-15296	$555.00
Lancair Models 320,360	13-15307	$400.00
Lancair Iv	13-15317	$496.00
Travel Canopy Cover Lancair Columbia 300,350,400	13-15297	$347.00
Travel Canopy Cover Lancair Models 320,360	13-15308	$293.95
Travel Canopy Cover Lancair IV	13-15318	$347.00
Mooney Early M20 Series	13-15327	$555.00
Mooney 201,205,231,252 & Mse	13-15337	$555.00
Mooney Ovation	13-15347	$555.00
Mooney Tls, Bravo, Acclaim Tn, Type S, & Porsche Powered Models	13-15367	$555.00
Travel Canopy Cover Mooney Early M20 Series	13-15328	$347.00
Travel Canopy Cover Mooney 201,205,231,252 & Mse	13-15338	$347.00
Travel Canopy Cover Mooney Ovation	13-15357	$347.00
Travel Canopy Cover Mooney Tls, Bravo, Acclaim Tn, Type S, & Porsche Powered Models	13-15368	$348.00
Piper Pa-24 Comanche	13-15377	$496.00
Piper Pa-28	13-15388	$496.00
Piper Pa32	13-15399	$587.00
Travel Canopy Cover Piper Pa-24 Comanche	13-15378	$347.00
Travel Canopy Cover Pa-28	13-15389	$347.00
Travel Canopy Cover Piper Pa32	13-15401	$454.00
Vans Aircraft Rv-10	13-15409	$496.00
Vans Aircraft Rv-12	13-15420	$400.00
Vans Aircraft Rv-6/6a	13-15429	$400.00
Vans Aircraft Rv-7/7a	13-15436	$400.00
Vans Aircraft Rv-8/8a	13-15443	$400.00
Vans Aircraft Rv-9/9a	13-15451	$400.00
Travel Canopy Cover Vans Aircraft Rv-10	13-15410	$347.00
Travel Canopy Cover Vans Aircraft Rv-12	13-15421	$347.00
Travel Canopy Cover Vans Aircraft Rv-6/6a	13-15430	$315.00
Travel Canopy Cover Vans Aircraft Rv-7/7a	13-15437	$315.00
Travel Canopy Cover Vans Aircraft Rv-7/7a	13-15444	$315.00
Travel Canopy Cover Vans Aircraft Rv-9/9a	13-15452	$315.00

BRUCES CUSTOM WING COVERS

The Wing Covers are a perfect solution to protect your paint from sun damage and prevent winter frost, snow, ice buildup, and corrosion. They are made from Solu-tion-Dyed Polyester or Acrylic Sunbrella and form-fit to slip around each wing tip, cover the entire upper surface of the wing and wrap around the leading and trailing edges. The covers secure under the wing with adjustable straps from the trailing edge to the leading edge. The wing covers can also attach to each other with adjustable straps at the leading and trailing edges of the wing under the belly of the plane. We have the ability to also accommodate wing tip modifications, such as STOL kits, droop tips, and vortex generators. Labeled LEFT and RIGHT for your convenience. Hail Protection version can be made. Set of 2.

Description	Part No.	Price
Cessna 150 & 152	13-15134	$422.00
Cessna 170	13-15147	$454.00
Cessna 172 & 175	13-15164	$454.00
Cessna 177 Cardinal	13-15178	$454.00
Cessna 180/185 Skywagon	13-15192	$454.00
Cessna 1872 Skylane	13-15193	$454.00
Cessna 206 Stationair	13-15194	$454.00
Cessna 210 Centurion	13-15196	$454.00
C350 & 400 Corvalis, Corv Tt	13-15198	$454.00
Beech Bonanza/Debonair	13-15094	$454.00
Beech Bonanza 36 Models	13-15105	$454.00
Beech Baron 58	13-15117	$1,195.00
Cirrus SR20	13-15199	$454.00
Cirrus SR22	13-15201	$454.00
Diamond DA-20, Katana, Eclipse	13-15202	$422.00
Diamond DA-40	13-15203	$454.00
Grumman AA5;tiger,cheetah,traveler	13-15291	$454.00
Horizontal Stabilizer Covers Grumman AA	13-15292	$256.95
Grumman AA1	13-15205	$422.00
Lancair Columbia 300,350,400	13-15302	$454.00
Lancair Models 320,360	13-15312	$422.00
Lancair Iv	13-15322	$454.00
Mooney Early M20 Series	13-15332	$454.00
Mooney 201,205,231,252 & Mse	13-15342	$454.00
Mooney Ovation	13-15362	$454.00
Mooney Tls, Bravo, Acclaim Tn, Type S, & Porsche Powered Models	13-15372	$454.00
Piper PA-24 Comanche	13-15383	$454.00
Piper PA-28	13-15393	$454.00
Piper PA	13-15405	$454.00
Vans Aircraft RV-4-WCW	13-16013	$325.00
Vans Aircraft RV-10	13-15414	$454.00
Vans Aircraft RV-12	13-15425	$422.00
Vans Aircraft RV-6/6a	13-15434	$422.00
Vans Aircraft RV-7/7a	13-15441	$315.00
Vans Aircraft RV-8/8a	13-15448	$422.00
Vans Aircraft RV-9/9a	13-15456	$422.00

BRUCES CUSTOM HORIZONTAL STABILIZER COVERS

Horizontal Stabilizer Covers are a perfect solution to protect your paint from sun damage and prevent frost, snow, ice buildup, and corrosion. They are made from Solution-Dyed Polyester or Acrylic Sunbrella. They cover the entire upper surface of the stabilizers and overlap around the leading and trailing edges as well as the wing tip. The covers secure under each stabilizer with adjustable straps. In some instances, cut-outs are made in the trailing edge of the wing covers to accommodate for static wicks. Horizontal Stabilizer Covers for winter use or long-term all year use are usually available, and are normally made from Solution-Dyed Polyester or Acrylic Sunbrella. A Hail Protection version can be made. Although these covers are bulky, they do help protect your wing and control sur-faces against small to medium-size hail. **Set of 2 - Winter Use**

Description	Part No.	Price
C150 & 152	13-15136	$133.75
C170	13-15148	$240.95
C172 & 175	13-15166	$256.95
C177 Cardinal	13-15179	$256.95
Cessna 180/185 Skywagon	13-15206	$256.95
Cessna 182 Skylane	13-15214	$256.95
C206 Stationair	13-15222	$256.95
C210 Centurion	13-15230	$240.95
C350 & C400	13-15238	$256.95
Beech Bon/deb	13-15095	$256.95
Beech Bon 36	13-15106	$256.95
Beech Baron 58	13-15118	$342.00
Cirrus SR20	13-15247	$256.95
Cirrus SR22	13-15256	$256.95
DA20,Katana,Eclipse	13-15268	$133.75
Diamond DA40	13-15275	$256.95
Grumman AA1	13-15282	$133.75
Grumman AA5	13-15292	$256.95
Lan C300,350,400	13-15303	$256.95
Lancair Models 320,360	13-15313	$133.75
Lancair IV	13-15323	$256.95
Mooney Early M20 Series	13-15333	$256.95
M201,205,231,252 & Mse	13-15343	$256.95
Mooney Ovation	13-15363	$256.95
Mooney TLS, Bravo, Acclaim TN, Type S, & Porsche Powered Models	13-15373	$256.95
Piper PA-24 Comanche	13-15384	$256.95
Piper PA-28	13-15394	$256.95
Vans Aircraft RV-10	13-15415	$256.95
Vans Aircraft RV-12	13-15426	$133.75
Vans Aircraft RV-6/6a	13-15435	$133.75
Vans Aircraft RV-7/7a	13-15442	$133.75
Vans Aircraft RV-8/8a	13-15449	$133.75
Vans Aircraft RV-9/9a	13-15457	$133.75

PS

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CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

BRUCE'S CUSTOM COVERS

BRUCES CUSTOM ENGINE COVERS

Once the material for each order is cut into its appropriate parts, highly trained sewing machine operators meticulously assemble the products with durable thread, rivets, and canvas trim. Engine Cover is a one-piece cover (100% lined with microfiber) that is a combination of the Canopy Cover and Engine Cover. This cover will enclose the engine cowl and will extend aft to cover all of the windows.

Description	Part No.	Price
Cessna 150 & 152	13-15132	$315.00
Cessna 170	13-15144	$293.95
Cessna 172 & 175	13-15162	$347.00
Cessna 177 Cardinal	13-15176	$347.00
Cessna 180/185 Sky Wagon	13-15189	$293.95
Cessna 182 Skylane	13-15212	$400.00
Cessna 206 Stationair	13-15220	$347.00
Cessna 210 Centurion	13-15228	$347.00
C350 & C400 Corvalis, Corvalis Tt	13-15236	$293.95
Beech Bonanza/debonair	13-15092	$293.95
Beech Bonanza 36 Models	13-15103	$347.00
Beech Baron 58	13-15114	$816.00
Cirrus SR20	13-15245	$347.00
Cirrus SR22	13-15254	$347.00
Diamond DA20, Katana, Eclipse	13-15266	$293.95
Diamond DA40	13-15273	$347.00
Grumman AA1	13-15280	$293.95
Grumman AA5	13-15289	$347.00
Lancair Columbia 300,350,400	13-15299	$293.95
Lancair Models 320,360	13-15310	$293.95
Lancair IV	13-15320	$347.00
Mooney Early M20 Series	13-15330	$293.95
Mooney 201,205,231,252 & MSE	13-15340	$293.95
Mooney Ovation	13-15360	$293.95
Mooney TLS, Bravo, Acclaim TN, Type S, & Porsche Powered Models	13-15370	$293.95
Piper PA-24 Comanche	13-15381	$347.00
Piper PA-28	13-15391	$347.00
Piper PA-32	13-15403	$347.00
Vans Aircraft RV-10	13-15412	$347.00
Vans Aircraft RV-12	13-15423	$293.95
Vans Aircraft RV-6/6a	13-15432	$293.95
Vans Aircraft RV-7/7a	13-15439	$293.95
Vans Aircraft RV-8/8a	13-15446	$293.95
Vans Aircraft RV-9/9a	13-15454	$293.95

Description	Part No.	Price
Insulated/cold Weather Engine Cover Beech Bon/deb	13-15093	$454.00
Insulated/cold Weather Engine Cover Beech Bonanza 36	13-15104	$454.00
Insulated/cold Weather Engine Cover Beech Baron 58	13-15116	$1,110.00
Insulated/cold Weather Engine Cover Cessna 150 & 152	13-15133	$422.00
Insulated/cold Weather Engine Cover Cessna 170	13-15146	$454.00
Insulated/cold Weather Engine Cover Cessna 172 & 175	13-15163	$486.00
Insulated/cold Weather Engine Cover 177 Card	13-15177	$486.00
Insulated/cold Weather Engine Cover Cessna 180/185	13-15190	$347.00
Insulated Cold Weather Engine Cover C182 Skylane	13-15213	$486.00
Insulated Cold Weather Engine Cover C206 Stationair	13-15221	$486.00
Insulated Cold Weather Engine Cover C210 Centurion	13-15229	$486.00
Insulated Cold Weather Engine Cover C350 & C400	13-15237	$454.00
Insulated Cold Weather Engine Cover Cirrus SR20	13-15246	$486.00
Insulated Cold Weather Engine Cover Cirrus SR22	13-15255	$486.00
Insulated Cold Weather Engine Cover DA20	13-15267	$400.00
Insulated Cold Weather Engine Cover DA40	13-15274	$454.00
Insulated Cold Weather Engine Cover Grumman AA1	13-15281	$400.00
Insulated Cold Weather Engine Cover Grumman AA5	13-15290	$454.00
Insulated Cold Weather Engine Cover Lan C300,350,400	13-15301	$454.00
Insulated Cold Weather Engine Cover L320 & L360	13-15311	$401.00
Insulated Cold Weather Engine Cover Lancair IV	13-15321	$454.00
Insulated Cold Weather Engine Cover M20	13-15331	$454.00
Insulated Cold Weather Engine Cover M201,205,231,252	13-15341	$454.00
Insulated Cold Weather Engine Cover Mooney Ovation	13-15361	$454.00
Insulated Cold Weather Engine Cover Mooney Tls, Bravo, Acclaim, Tn, Type S & Porche Powered Models	13-15371	$454.00
Insulated Cold Weather Engine Cover Piper PA-24 Comanche	13-15382	$454.00
Insulated Cold Weather Engine Cover Piper PA-28	13-15392	$486.00
Insulated Cold Weather Engine Cover Piper PA-32	13-15404	$486.00
Insulated Cold Weather Engine Cover Vans A/C Rv-10	13-15413	$454.00
Insulated Cold Weather Engine Cover Vans A/C Rv-12	13-15424	$400.00
Insulated Cold Weather Engine Cover Vans RV-6	13-15433	$400.00
Insulated Cold Weather Engine Cover Vans A/C RV-7	13-15440	$400.00
Insulated Cold Weather Engine Cover Vans A/C RV-8	13-15447	$400.00
Insulated Cold Weather Engine Cover Vans A/C RV-9	13-15455	$400.00

BRUCES CUSTOM HEATSHIELDS

Heatshield Interior Reflectors are made of a special laminate of metallized polyester film and closed cell foam. Less than 1/8" thick, the Reflector can roll up and store in a sleeve, yet is stiff enough when flat to stand up against the windshield using the sun visors and window framing only. On some designs no Velcro or suction cups are necessary. Heatshields are an excellent short-term remedy for cockpit overheating, but use the Canopy Cover for more effective and practical long term protection. Heatshields should not be used on polarized windows.

Description	Part No.	Price
Heatshield Set Cessna 150 & 152	13-15138	$234.95
Heatshield Set Cessna 170	13-15151	$229.95
Heatshield Set Cessna 172 & 175	13-15168	$245.95
Heatshield Set Cessna 177 Cardinal	13-15182	$250.95
Heatshield Set Cessna 180/185 Skywagon	13-15208	$245.95
Heatshield Set Cessna 182 Skylane	13-15216	$250.95
Heatshield Set Cessna 206 Stationair	13-15224	$250.95
Heatshield Set Cessna 210 Centurion	13-15232	$250.95
Heatshield Set C350 & C400 Corvalis, Corvalis TT	13-15240	$250.95
Windshield Heatshield Cessna 150 & 152	13-15137	$96.00
Windshield Heatshield Cessna 170	13-15149	$96.00
Windshield Heatshield Cessna 172 & 175	13-15167	$96.00
Windshield Heatshield Cessna 177 Cardinal	13-15181	$96.00
Windshield Heatshield Cessna 180/185 Skywagon	13-15207	$96.00
Windshield Heatshield Cessna 182 Skylane	13-15215	$96.00
Windshield Heatshield Cessna 206 Stationair	13-15223	$96.00
Windshield Heatshield Cessna 210 Centurion	13-15231	$96.00
Windshield Heatshield C300 & C450	13-15239	$96.00
Heatshield Set Beech Bonanza/Debonair	13-15097	$250.95
Heatshield Set Beech Bonanza 36 Models	13-15108	$250.95
Heatshield Set Beech Baron 58	13-15122	$352.00
Windshield Heatshield Beech Bonanza/debonair	13-15096	$96.00
Windshield Heatshield Beech Bonanza 36 Models	13-15107	$96.00
Windshield Heatshield Beech Baron 58	13-15119	$96.00
Heatshield Set Cirrus SR20	13-15249	$250.95
Heatshield Set Cirrus SR22	13-15258	$250.95
Windshield Heatshield Cirrus SR20	13-15248	$96.00
Windshield Heatshield Cirrus SR22	13-15257	$96.00

Description	Part No.	Price
Heatshield Set Grumman AA1	13-15284	$224.95
Heatshield Set Grumman AA: tiger,cheetah,traveler	13-15294	$240.95
Windshield Heatshield Grumman AA1	13-15283	$96.00
Windshield Heatshield Grumman AA5	13-15293	$96.00
Heatshield Set Lancair Columbia 300,350,400	13-15305	$240.95
Heatshield Set Lancair IV	13-15325	$240.95
Windshield Heatshield Lancair Columbia 300,350,400	13-15304	$96.00
Windshield Heatshield Lancair Models 320,360	13-15314	$117.75
Windshield Heatshield Lancair IV	13-15324	$96.00
Heatshield Set Mooney Early M20 Series	13-15335	$250.95
Heatshield Set Mooney 201,205,231,252 & MSE	13-15345	$250.95
Heatshield Set Mooney Ovation	13-15365	$250.95
Heatshield Mooney TLS, Bravo, Acclaim TN, Type S, & Porsche Powered Models	13-15375	$250.95
Windshield Heatshield Mooney Early M20 Series	13-15334	$96.00
Windshield Heatshield Mooney 201,205,231,252 & MSE	13-15344	$96.00
Windshiled Heatshield Mooney Ovation	13-15364	$96.00
Windshield Heatshield Mooney TLS, Bravo, Acclaim TN, Type S, & Porsche Powered Models	13-15374	$96.00
Heatshield Set Piper PA-24 Comanche	13-15386	$240.95
Heatshield Set Piper PA-28	13-15397	$240.95
Heatshield Set Piper PA-32	13-15407	$250.95
Windshield Heatshield Piper PA-24 Comanche	13-15385	$96.00
Windshield Heatshield Piper PA-28	13-15395	$133.75
Windshield Heatshield Piper PA-32	13-15406	$96.00
Heatshield Set Vans Aircraft RV-10	13-15418	$240.95
Windshield Heatshield Vans Aircraft RV-10	13-15416	$96.00

BRUCES CUSTOM ENGINE INLET PLUGS

Engine Inlet Plugs are custom fit for your intakes, made with heavy-duty vinyl material, and stuffed with a single block of sculpted urethane foam. Each plug has a zipper that allows the foam to be removed and dried if necessary. Engine plugs have warning flags that are visible from the cockpit or 'remove before flight' streamers sewn onto the face of the plugs.

Description	Part No.	Price
Cessna 150 & 152	13-15131	$122.75
Cessna 170	13-15143	$138.75
Cessna 172 & 175	13-15161	$128.00
Cessna 177 Cardinal	13-15174	$128.00
Cessna 180/185 Skywagon	13-15187	$128.00
Bruces Engine Inlet Plug Cessna 182 Skylane	13-15070	$135.00
Bruces Engine Inlet Plug Cessna 206 Stationair	13-15072	$130.00
C350 & C400 Corvalis, Corvalis Tt	13-15235	$128.00
Beech Bonanza/debonair	13-15091	$138.75
Beech Bonanza 36 Models	13-15102	$144.00
Beech Baron 58	13-15113	$235.95
Cirrus Sr20	13-15244	$128.00
Cirrus Sr22	13-15253	$128.00
Diamond Da20, Katana, Eclipse	13-15265	$122.75
Diamond Da40	13-15272	$138.75
Grumman Aa1	13-15279	$128.00
Grumman Aa5	13-15288	$138.75

Description	Part No.	Price
Lancair Columbia 300,350,400	13-15298	$128.00
Lancair Models 320,360	13-15309	$122.75
Lancair Iv	13-15319	$128.00
Mooney Early M20 Series	13-15329	$128.00
Mooney 201,205,231,252 & Mse	13-15339	$128.00
Mooney Ovation	13-15359	$138.75
Mooney Tls, Bravo, Acclaim Tn, Type S, & Porsche Powered Models	13-15369	$144.00
Piper Pa-24 Comanche	13-15379	$138.75
Pa-28	13-15390	$128.00
Piper Pa32	13-15402	$128.00
Vans Aircraft Rv-10	13-15411	$133.75
Vans Aircraft Rv-12	13-15422	$133.75
Vans Aircraft Rv-6/6a	13-15431	$128.00
Vans Aircraft Rv-7/7a	13-15438	$133.75
Vans Aircraft Rv-8/8a	13-15445	$128.00
Vans Aircraft Rv-9/9a	13-15453	$133.75

PS

POLYURETHANE WING FUEL MAT

This polyurethane wing fuel mat can be easily cleaned with soap and water. Avoid spraying product with silicone or wd-40 type products because this material will cause dust and dirt to attach to pad possibly scratching wing surface. Color fading will not affect the integrity of the polyurethane material. Color options available at point of purchase. Dimensions: 18" x 24" x 0.30 Length and width dimensions are subject to +/- 1/8 toleranceService range: -20F - 200F. Fuel port: 5" diameter. Durable impact absorbing polyurethane. Non-Marking and Non-Abrasive, UV stable. Exposure to direct sunlight will cause color fading. Fuel Resistant and chemical resistant with the exception of MEK.

Blue.....P/N 01-01284 ..... $50.00
Orange.....P/N 01-01285 ..... $50.00
Black.....P/N 01-01286 ..... $50.00
Red.....P/N 01-01287 ..... $50.00

CHADD PADD FUEL MAT

The multi-purpose (Aviation/Marine) 15"x20" Chadd Padd® is the best choice for use where high fuel volumes or high flow rates of fuel are in play - they were originally invented for the high flow rate of aviation refuelers and definitely provide a little more piece of mind.

Each padd is anti-static treated, hydrophobic (repels water & floats), and holds approx 11 fl.oz. of petroleum; which means the 1 Roll of 18 Padds in its own compact dispenser box will absorb an approx. total of 198 fl.oz. or 6.1 quarts." 15" X 20"

P/N 13-08161 ..... $33.25

CHADD PADD FUEL MAT DISPENSER

The Chadd Padd Dispenser is a must-have for any fueling operation serious about refueling safety! Made from ultra-white PVC; this convenient, water proof dispenser makes sure your Chadd Padds® will stay clean, dry, and most importantly, readily available for daily fuelings or should there be an immediate need for a petroleum absorbent Padd.

The Chadd Padd® Dispenser accommodates the larger, duel-port Chadd Padds® Refill Roll 18 that are 15 inches wide.

Chadd Padds® pictured in the dispenser are not included; however, mounting hardware is included. Size: 9"x17"x9" Weight: 5.5lbs

P/N 13-08163 ..... $58.25

CHADD PADD WIND CHOCKS

The Wind Chocks™ are used to hold the Chadd Padd® down during use in windy conditions and help to also give the Padds rigidity, form, and the traditional "roll n fold" feel. Rated for use in winds up to 20kts, the Wind Chocks™ crimp onto the Padd as to not allow anything to touch the craft's surface except the soft, clean, and dry Chadd Padd®.

They're made from a soft and flexible material that helps them to conform to the surface being fueled while still allowing for versatility in their placement on the Padd as they can be applied in almost any configuration that is best for the refueler. The Wind Chocks™ are also surprisingly heavy for their size and weigh almost 2 lbs for the pair; ensuring your Chadd Padd® will stay "chock'd" or "anchored" in place. 2"x13.75"x2". Weight: 1lbs, 6oz

P/N 13-08162 ..... $49.95

CESSNA HIGH-WING FUEL VENT SCREEN

Fuel flow to your aircraft's engine can be compromised by insects or debris entering fuel tank vents. This remove-before-flight Fuel Vent Screen prevents contaminants from obstructing or contaminating the fuel system. The attached foot-long, florescent, and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions, so it won't be forgotten during your preflight. Fits Cessna piston engine aircraft. Inside diameter of PVC sleeve is 0.365"

3/8 Inch .....P/N 13-10437 ..... $19.95
1/2 Inch .....P/N 13-12390 ..... $19.95

FUELING / ENGINE ACCESS WING MATS

Please specify color when ordering: Red, Light Blue, Royal Blue, Black, Green, Yellow and Safety Orange. Features: • Protective and durable impact absorbing Urethane-polymer • UV · Fuel · Chemical resistant • Non-marking · Non-abrasive • Exceeds FAA and military standards • -20º F to 200º F service integrity • Standard 5-inch diameter service port • Special design and private labeling available • Approved by all major oil companies, airlines, military and fuel service operations • 3 year warranty

Part No.	Color	Size	Price
13-11206	Red	18" x 24"	$94.75
13-11207	Royal Blue		$89.95
13-11208	Orange		$89.95
13-11209	Yellow		$94.75
13-11210	Black		$94.75
13-11211	Green		$94.95
13-11212	Red	18" x 36"	$129.95
13-11213	Royal Blue		$129.50
13-11214	Orange		$124.95
13-11215	Yellow		$129.75
13-11216	Black		$124.95
13-11217	Green		$129.50

WING MAT

This navy blue carpet can be placed on the wing prior to boarding which will protect both the wing and the aircraft interior. This mat rolls up easily for storage in the aircraft and an attached elastic band keeps it rolled up. The rubber backing is perfect for use on low wing aircraft. Two sizes available.

Small Wing 10.5" x 36".....P/N 13-07195 ..... $19.70
Large Wing 21" x 48".....P/N 13-07196 ..... $48.65

DIRECT FUEL LEVEL INDICATORS

These Direct Fuel Level Indicators are quality made of acrylic PVC tube with an aluminum scale. They are available calibrated to individual tanks or uncalibrated for custom calibration to home built tanks. These Indicators allow an accurate check of on board fuel level indicators and eliminate the guess work.

Description	Part No.	Price
Fuel Level Indicator C-150/C-152 +	12-21200	$16.95
Fuel Level Indicator C-150 LONG 19	12-21205	$18.50
Fuel Level Indicator C-170 / C-172	12-21210	$16.95
Fuel Level Indicator C-172 34G	12-21215	$16.95
Fuel Level Indicator 1958+ C182 32 GAL	12-21225	$16.95
Fuel Level Indicator C-182 42G	12-21230	$16.95
Fuel Level Indicator C-210 45G	12-21240	$17.55
Fuel Level Indicator PA-24 30G	12-21245	$18.50
Fuel Level Indicator 7KCAB	12-21250	$18.50
Fuel Level Indicator PA-28	12-21255	$16.95
Home Built Universal Fuel Level Indicator CK Rod	12-21260	$18.50

FUEL HAWK FUEL GAUGES

The Fuelhawk is just 11" long, clear lightweight and unbreakable. It's easy to use and gives an instant readout in gallons usable. No more guessing. These handy devices offer the answers to these very important questions: 1.How many gallons of usable fuel are remaining in the tank? 2.How much fuel can be added without going over gross weight? 3. Are the aircraft fuel gauges working & accurate?

Part No.	Application	Price
13-00443	Cessna 152 (standard 12 gal. tanks)	$8.95
13-00442	Cessna 172 (standard 19 gal. tanks)	$8.95
13-01468	New Cessna 172 Skyhawk (26.5 gal.)	$9.95
13-01469	New Cessna 182 Skylane (43.5 gal.)	$8.85
13-00441	Cessna 182LR (42 gal. Long range tanks)	$8.95
13-00439	Universal for any aircraft, w/graph & calibration chart	$8.95
13-00949	Universal XL Fuel Gauge (16" long)	$11.95
13-11189	Universal Gauge 26"	$18.95

PS

COWL PLUGS

Cowl Plugs with attached "remove before flight" streamer for general aviation aircraft. Prevents bird and foreign objects from entering through the cowl. Comes complete with a linking lanyard and remove before flight streamer. Heavy duty cross linked construction and durable nylon hand sewn stitching complete the set. Please specify aircraft make, model, & serial number when ordering. Plugs are furnished with free embroidery and pitot tube cover.

Single engine..... P/N 13-01742 ..... $68.75
Twin engine ..... P/N 13-01743 ..... $139.85

PROPELLER SLINGS EXHAUST COVERS

Propeller Slings & Exhaust Covers keep your propeller secure and in place, eliminating any bearing damage caused by a free-spinning propeller with no lubrication. The integral exhaust covers protect the costly turbine wheel from debris & birds. Simple, quick one man operation. Please specify aircraft make, model, serial no. when ordering. P/N 13-01744 ..... $106.90

INLET PLUGS

These protect your engine form foreign object damage, blowing dust and sand, birds and debris. Complete with remove before flight flag and easy pull handle for insertion and removal. Please specify aircraft make, model, & serial no. when ordering. P/N 13-01745..... $92.95/eng

JET ENGINE COVERS

Made of extremely durable, water-proof and fire resistant Herculite, our covers are guaranteed for 10 yrs. Each set is hand crafted and sewn to order. Complete with storage bag and remove before flight flags. Please specify aircraft make, model, & serial no. when ordering.

P/N 05-04077 ..... CALL FOR QUOTE

ENGINE INTAKE COVER

Protect your engine from natural hazards which could cause serious in-flight problems. This economical design fits practically every single or twin, even homebuilts. The lightweight, fire-retardant mesh fabric will not blister or melt. After simple one-time installation of mounting hardware, cover snaps into place and secured with Velcro. Folds for easy storage. Complete with mounting hardware & "Remove Before Starting Engine" streamers. Also available: Bib that allows you to cover additional intakes.

Engine Intake Cover..... P/N 7148..... $64.85

KUVR**IT WHEEL COVERS

A vinyl-coated polyester that is fade resistant and California State Fire Marshall approved (#F-2310). The weave breathes and yet provides 85% shade factor from the suns damaging ultra violet rays. It is easy to care for. Simply machine wash and just hang it to dry. The KUVR*IT II Wheel Cover is easy to use. Simply place the cover over your tires and adjust the strap to the desired tightness and lock into place. There are 2 sizes for your convenience:

Small fits tire size: 5.00 – 5/15 x 00-6 ..... P/N 13-03158 ..... $39.85
Medium fits tire size: 6.00 - 6/7.00-6 ..... P/N 13-03159 ..... $43.50

REDWING TRAILING EDGE PROTECTIVE FOAM

RedWing helps prevent aircraft damage and head injuries. Just slide the foam onto the trailling edges of ailerons, elevators, rudders or flaps to protect these surfaces while tied down or in the hangar.. RedWing is also ideal for proecting landing gear doors, aviionics antennas, and winglets. The bright red color reminds the pilot to remove RedWing before flight, and RedWing is reuseable and unaffected by UV, water, or oils. Furnished in 3ft. sections which can by easily cut to smaller sections. P/N 13-02566 ..... $24.85

BIRD DETERRENT - BIRDXPELLER PRO

The BirdXPeller PRO is a sonic bird repeller that broadcasts a variety of naturally recorded bird distress signals and predator calls that frighten, confuse and disorient pest birds within the effective range. Pest birds cause damage, liability and health hazards. Sonic bird control is a safe, humane, eco-friendly way to get rid of birds from outdoor areas. Sonic repellers use high-definition digital recordings. Customizable settings allow for easy, DIY pest control. Real sounds – digital playback of naturally recorded threats. Covers up to 1 acre. Repels: pigeons, starlings, sparrows and gulls. P/N 13-00091 ..... $268.95

WICKSHIELD

Warning type cover for aircraft, wire/rod & "whisker" type, Static Wicks. These are very simple to use, economical, and conveniently packaged in 8 packs. They offer practical protection for the wicks, charter/corporate passengers, crew, and maintenance staff! They have been well received by corporate fleets. Features: One size fits all static wicks. Lightweight- will not stress static wicks - will not scratch airplane finish. Quick "Attach - Release" Clasp - will not stick to wicks - will not freeze in place. P/N 13-11708 ..... $29.75

STEARMAN COCKPIT DUST AND RAIN COVER

One of the problems with traveling in your Stearman is the lack of space to haul necessities. This Cockpit Cover weighs about 1 pound in it's storage bag, which is the size of a quart carton.

The cover is made from back-packing tent material which is rain proof and light weight. Installs with two Velcro straps and four elastic cords using plastic fasteners. There is no metal to scratch your finish. Available in Federal Yellow. .....P/N 13-11616 ..... $159.00

KOGER SUNSHADES

The Koger Sunshade was developed to provide protection from the sun while flying an airplane that has a large bubble plastic canopy like the RV-6, RV-7, RV-8, RV-9 and many other types of aircraft.

Key Benefits:

- Retractable to front or rear.
- Lightweight (9oz. for side by side RV models)
- Install in 1/2 to 1-1/2 hours depending on the model.
- Makes instruments more visible, and the cockpit more comfortable.

Fits	Description	Part No.	Price
RV-8	Special 15" W x 46" L	13-05657	$243.00
RV-6, 6A, 7, 7A, 9, 9A	Standard RV TIP-UP 30" W x 25" L	13-05658	$157.00
RV-6, 6A, 7, 7A, 9, 9A	Standard RV Slider30" W x 25" L	13-05659	$157.00
RV-6, 7, 9	Super RV Slider -34" W x 35" L	13-09609	$229.00
Arion Aircraft – Lighting, Breezer, Cirrus, Classic Sport - S-18 & S-18T, Europa Evektor – Eurostar, Glasair- 320 and 360 Lancair – Legacy, Mustang II Sequoia Falco - F9L, Skylark Sting Sport, Texan, Zenith - Zodiac	Large Universal for larger clear bubble canopies with no center structural members 34" W x 35" L	13-05660	$229.00
Air Tourer AESL T-6, Alisport LLC Sailplane, American Champ 8GGGBC, Apis INC Sailplane, Citabria, Cozy III & IV, Dynamic WTP, Evektor Sportstar, Fasanation D4, Glasair, Nuventure Questair, Rans Coyote II, Rans S-7S & S-6, T-18, Team Rocket F-1, Vans RV 4	Custom made to order shades	13-05661	$219.00

TRISOFT WINGTIP BUMPER

Trisoft Bumpers provide protection for the trailing edge of the wing, delta fins and ventral fins. Each Trisoft Bumper is made of chemical resistant EVA foam and provides ultimate aircraft protection. The Trisoft Bumpers also work great as wing edge indentifiers. This helps protect your employees while they are working or walking under the wing. P/N 13-08263 ..... $27.50

TRISOFT WINGTIP/PROP TIP COVERS

* Avoid Accidents * Protect Employees and Aircraft * Reduce Insurance Claims * Remain In Compliance Trisoft Aircraft Covers * Can Be Used As a Safety and Warning Device on Prop Tips. Trisoft is a simple foam triangular cover that slips onto the corners of the prop tips, gear doors, wing flaps (in the lowered position), wing tips, and dorsal antennas. Trisoft can be used on personal aircraft, corporate aircraft, commercial aircraft, military aircraft and helicopters. P/N 13-06003 ..... $17.95

PS

PLANE SIGHTS REMOVE BEFORE FLIGHT

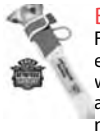
PLANE SIGHTS PITOT TUBE COVERS

Extremely obvious, very durable, and weather resistant pitot tube covers for every aircraft.

ANGLED PITOT TUBE COVER - Aircraft Type: Piston Powered Plane This durable, weather-resistant orange and yellow reflective cover fits virtually any size pitot tube. It stands out in daylight or darkness under all weather conditions, so it can't be missed. Large sewn-on Velcro tabs keep it securely in place under all conditions. Weight: 0.14 kg If length of the tube exceeds 6.75" and the diameter exceeds 7/8", then the Universal Pitot tube cover would be a better choice. As seen on the 2009 AOPA 'Let's Go Flying' Cirrus SR22 P/N 13-05611 ..... $13.95

UNIVERSAL PITOT TUBE COVER - Aircraft Type: Piston Powered Plane. This durable, weather-resistant orange and yellow reflective cover fits virtually any size pitot tube. It stands out in daylight or darkness under all weather conditions, so it can't be missed. Universal covers fit any length of tube from the smallest home built ¼" tubes up to 7/8" jet probes. The versatile hook/loop Velcro strap with sewn-in rubberized trim allows the cover to be quickly and securely fastened to the pitot tube. Weight: 0.00 kg The inside diameter of the cover is 7/8". Guaranteed to work on any Cessna, Beechcraft, Cirrus, Diamond, Grumman or Mooney aircraft, as well as most Pipers and many light sport aircraft.

P/N 13-05610 ..... $13.95



BLADE PITOT COVER - Aircraft Type: Piston Powered Plane Forgetting to remove a faded, dull and worn-out pitot tube cover can jeopardize the safety of you and your passengers. And when cold weather prevents you from installing your pinch-and-insert style blade pitot cover, ice and snow can contaminate your pitot system. Some blade pitot covers also cause damage to paint when the sleve is being forced on and off. The highly conspicuous and very durable Plane Sights Blade Pitot Cover is a perfect fit for any aircraft with a blade-type pitot tube or piper gear extension mast.. Properly installed, it's guaranteed not to blow off, fade in the sun or wear out for at least two years. Fits Piper, Katana, some Rockwell, late Grumman, Lake 250, and all other aircraft with a blade-type pitot tube. (As seen on the 2008 AOPA "Get Your Glass" sweepstakes aircraft) Weight: 0.15 kg Fits Piper, Katana, some Rockwell, late Grumman, Lake 250, and most other aircraft with a blade type of pitot tube.

P/N 13-06016 ..... $15.95

PITOT TUBE PLUG (5/8") - Aircraft Type: Piston Powered Plane 5/8" inside diameter vented pitot plug with its unmistakably conspicuous Remove-before-Flight Streamer. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The plug is attached to the streamer's rugged black oxide coated zinc grommet with a galvanized steel ring, and is vented to prevent pressurization damage. This 5/8" Plug Fits Aero Commander, Twin Beach, Bonanza, Cessna 300/400/500, Conquest Series, Grumman, Lear, Mooney, Piper Cheyenne and Navajo aircraft. Weight: 0.04 kg 5/8"/ 0.625" (15.875mm) ID x 1.85" (38.10mm) P/N 13-06019 $13.95

PITOT TUBE PLUG (3/4") - Aircraft Type: Piston Powered Plane. 3/4" inside diameter vented plug with its unmistakable Remove-before-Flight Streamer provides a perfect easy-on, easy-off solution. ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions. The poly plug is attached to the streamer's rugged black oxide coated zinc eyelet with a stainless steel ring. This ¾"plug Fits Cessna 150, 152, 172, 177, 182, 200 series, and 337 models. Weight: 0.04 kg 3/4"/0.75" (19.05mm) ID x 2" (50.80mm) useable length P/N 13-06018 ..... $13.95

LIGHT SPORT PITOT PLUG KIT - Aircraft Type: Piston Powered Plane. Light Sport/Homebuilt Pitot Plug Kit provides a perfect fit for many homebuilt pitot tubes, light sport pitot tubes, and aircraft fuel vents. The kit includes several vented plugs so it even works with double-tube systems and is guaranteed not to pressurize your pitot static system. ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions. The kit comes complete with three different-sized pitot tube plugs, a unique streamer, and two rust-resistant coated triangle rings. WARNING: CHECK WITH YOUR AME AND CONSULT YOUR OWNER'S MANUAL BEFORE USING A FUEL VENT PLUG. P/N 13-06020 .....$13.95

PLANE SIGHTS AIRCRAFT MARKERS & STATIC WICK COVERS

Prevent hangar rash and broken static wicks

STATIC WICK COVER SET (TUBE STYLE 7") - Aircraft Type: Jet. A lower priced alternative to Static Wick Markers. They protect static wicks from damage on the ground and make wing/elevator tips more obvious, preventing hangar rash. Slide these round style covers on for a tight weather resistant fit on Citations and other jets. Weight: 0.04 kg Round, tubular poly cover, 0.310" x 0.450" x 7.000"Long. *Shock cord lanyard not included P/N 13-06888 ..... $48.95

STATIC WICK COVERS (SMALL ID X7") - Aircraft Type: Jet. Installed and removed in seconds, Static Wick Covers help prevent delays and inconvenience due to hangar rash. Extremely obvious and very durable Static Wick Covers make these vulnerable parts highly visible by day or night. Slide these round style covers on for a tight weather resistant fit on your Bombardier (Challenger & Global Express) or Hawker/Beechcraft and many other jets. If necessary cut with scissors to desired length. Weight: 0.20 kg Fit's over static wick part #'s: Chelton 2-17SC-1,Chelton 2-11SC-1, MIL-9129D, DG17770. Fits Bombardier, Hawker/Beachcraft and others

P/N 13-06777 ..... $54.75

STATIC WICK COVER (SQUARE STYLE) - Aircraft Type: Jet These Square Style Static Wick Covers protect, usually yellow pronged static wicks from damage on the ground and make wing/elevator tips more obvious, thereby preventing hangar/ramp rash. Slide these rectangle covers on for a tight weather resistant fit on Falcon, Hawker, Beechjet, older Lear Jet and many other static wicks. Weight: 0.21 kg Includes three (3) Static Wick Covers per package Square Poly, 0.75"x0.25"ID x 3.50" Long, (in stock) (also available by special request, 5.25" length sleves) Standard two year warranty applies. *Shock cord lanyard not included

P/N 13-06776 ..... $48.95

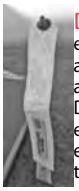
UNIVERSAL AIRCRAFT MARKER - Aircraft Type: Piston Powered Plane. Highly reflective markers make vulnerable wing and elevator tips clearly visible under all conditions, and their projecting "proximity fuses" warn that something is too close before damage occurs. Fit all aircraft from Airliners to light sport aircraft, including models with static wicks and strobe lights. For aircraft with tip tanks, the wing marker opening fits over one end of the tank. A full set stows easily under most aircraft seats. Once initial fitting is done, the markers can be installed and removed in seconds during routine pre- and post-flight walk-arounds. Weight: 0.08 kg Package Contents: Two (2) corner marker pieces, two (2) harness pieces, two (2) marker fuses, four (4) 54" lengths of shock cord with cord hook ends, and four shock cord hook ends for assembly.

P/N 13-05603 .....$159.95

TURBO PROP TIE - Aircraft Type: Turboprop. Fits most Turbo Props including Caravans, Beech 1900s, King Airs and others. An adjustable heavy duty ½" shock cord and metal hook allows the versatile design to work on so many turbo prop aircraft. Also allows our Prop Tie to Integrate with existing cowl plugs and exhaust covers. For any Turbo-Prop up with to 10" wide blade. Comes with 36" of HD 1/2" size adjustable shock cord and two stainless clips.

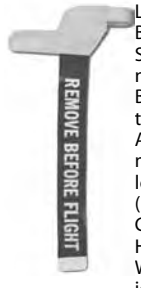
P/N 13-06778 ..... $59.95

REMOVE BEFORE FLIGHT STREAMER - Blazing yellow color stands out equally well in daylight or darkness under all weather conditions. A cord can be attached to the streamer to the rugged black oxide coated zinc eyelet. Ideal for any remove-before-flight application. Weight: 0.03 kg. Streamer - 12.25" long x 2" wide, two metal rings included..... P/N 13-05612 ..... $12.95



DIAMOND STALL WARNING PLUG - Aircraft Type: Piston Powered Plane Diamond recommends that operators of their DA40 and DA20 aircraft plug the stall warning air inlet holes on these aircraft while they're parked on the ground. Fits any Diamond DA40 or DA20, one way or the other. ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions..... P/N 13-06830 ..... $39.95

HI VISIBILITY BOOTIE PITOT COVER



Long Life Clip - Hook and loop closure
Bright Yellow Sock - More visible against aircraft finishes
Softer Vinyl Banner - Less abrasive to paint and aluminum
Bright White Letters - High visibility lettering, Fuel resistant (won't chip off), Non-abrasive
Applications: Specially designed for yse with pylon mounted Pitot Probes, fits Nose, Fuselage, or under wing locations, VL jets, and regional service airline aircraft (Boeing, Beechcraft, Bombadier, Cessna Jets, Cirrus, CRJ, Piper, Grob, Grumman, Gulfstream, Lear, Embraer, Hawker, Honda, Saberliner, Swearinger, and others)
Warbirds with "arrow head" type Pitot Tubes (North American, most AT-6, SNJ, Vultee BT-13, Grumman F4F Wildcat, F6F Hellcat, B-25 Mitchell, P-47 Thunderbolt, and many others) TAT Probes, Dynon Angel of Attack - Pitot Proves, Pylon mount, Rosemount Pitot Probes..... P/N 13-12349 .....$8.65

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

BANNERS – PITOT TUBE COVERS

AIRCRAFT FOR SALE BANNERS

Designed specifically for aircraft use, these banners slip right over your prop blades, moving in the breeze to attract attention-but will not rub against painted surfaces. Each banner is 9" x 23", made of heavyweight rubberized Nylon that is weather-repellent and resists tearing. Sold as a set of 2. P/N 5412 ..... $22.90

PROPELLER MOUNTED BANNERS

Two 28" x 8", white printing on red reinforced vinyl. Yellow, blue and white pennants, slides over prop, fastens with velcro.

For Sale ..... P/N 13-06402 ..... $29.75
For Rent ..... P/N 13-06635 ..... $29.50

FOR SALE PROP BANNER

Consists of three pieces. Each prop banner is 11" high X 22" long when mounted. Made of RED vinylized polyester with BOLD WHITE lettering. Unlike prop banners that are a sleeve which must be slipped over the prop blade only, these banners are split at the bottom and are held together with velcro. This allows the banner to be opened up and then wrapped around virtually ANY structural member of the aircraft

P/N 13-06014 ..... $28.75

AIRCRAFT SPRUCE PROPELLER CARD

These prop cards are great when displaying your aircraft at a fly-in or event. There's room to fill in your personal information as well as large notes instructing onlookers to enjoy the views of your beautiful aircraft, but keep their hands off. They easily slide on and off the blades of your propeller. If you are organizing an event, these are affordable enough to pick up in bulk and pass them out to all who attend. 8-1/2"x 11". Semi-Gloss. P/N 13-12320 ..... $1.35

PITOT TUBE COVERS

Durable leather-like provides optimum protection. Velcro strap attaches booty to 5/8" or 11/16" dia. L-shaped pitot tube. Red "Remove Before Flight" streamer. Made of flame- proof and weather-resistant National Aerospace material. ..... P/N 15210 .... $7.95

SLIP ON PITOT COVER - Slip fit over 1/4"or 1/2" dia. pitot. Red Remove Before Flight streamer attached. Made of flame-proof/weather-resist. National Aerospace material.

P/N 15220 ..... $6.95

ROUND CESSNA PITOT COVER - This yellow urethane pitot cover fits round, high-wing Cessna pitot tubes. Grooved fitting releases air pressure as the barometer changes.

P/N 5139 ..... $7.95

PIPER PITOT COVER - This pitot cover is designed to fit the blade style pitot commonly found on piper aircraft. Small vent hole prevents pressurizing system. ..... P/N 5740 ..... $14.85

REMOVE BEFORE FLIGHT RIBBON

This 3"x24" bright orange streamer with black letters features a grommet for a C ring to attach to anywhere on the aircraft. High visibility, fire resistant material. P/N15200 ..... $6.95

DO NOT TOW STREAMER

17" Streamer, attach with Velcro, Color international orange. P/N 13-02004 ..... $12.85

ASA REMOVE BEFORE FLIGHT BANNER

A bright red heavy nylon banner that can be fastened to anything that needs removing before flight. Comes with a grommet and wire ring that can be attached to everything from gear pins to gust locks and pitot covers. Heavy duty vinyl is tear resistant.

P/N 13-02380 ..... $6.75

ASA PITOT TUBE COVERS

Fit snugly over standard aircraft pitot tubes, and are vented to avoid pressurizing the pitot static system. Critical to safe operations, the cover keeps dirt, contamination, and insects from entering the pitot tube. A "remove before flight" streamer hangs off the cover as a prominent preflight reminder to pilots. Molded in the United States, the cover uses a heavy duty plastic material. Pitot Tube Cover 5/8" (small) ..... P/N 13-02378 ..... $6.85
(Fits: Cessna 300/400 series, Citation & Conquest, Beech singles & twins, Piper Navajo & Cheyenne, Mooneys, Mitsubishi, Lear Jets & Cirrus)
Pitot Tube Cover 3/4" (large) ..... P/N 13-02377 ..... $6.85
(Fits: Cessna 150,152,172,177,182, 200 series, Skymaster & the Falcon Jet)

FUEL CAP COVER

The STAY SEALED cap is a patented fuel cap cover that locks onto the existing factory cap and seals to the surface of the wing. Designed and tested against heavy rains, strong winds, high temperatures, and extreme cold. It sealed out melring snow and ice, blowing rain and water from aircraft washing. *To be used anytime the aircraft is stored outside. The device MUST be REMOVED BEFORE FLIGHT.

Model SSCC fits the following: Cessna Series: 152, 172, 182, 206, 207, 210. Fitted with the raised metal fuel cap. ..... P/N 05-03662 ..... $47.75
Model SSCP fits the following: Cessna 120,140,150,172 with recessed fuel filler opening ..... P/N 05-03668 ..... $47.75
Model SSPC fits the following: Piper Series: PA-28-140,PA-28-160,PA-28-180, PA-28-200, PA-32-260, PA-32-300 fitted with the raised metal fuel cap. ..... P/N 05-03669 ..... $47.75

"REMOVE BEFORE FLIGHT" PITOT COVERS

Universal cover ..... P/N 13-04396 ..... $11.85
Piper blade cover ..... P/N 13-02946 ..... $9.95
3/4 pitot cover ..... P/N 13-04395 ..... $8.95
5/8 pitot cover ..... P/N 13-04394 ..... $8.95
Sm RBF streamer ..... P/N 13-02818 ..... $7.90
Lrg RBF streamer ..... P/N 13-02819 ..... $5.75
Nelson RBF Streamer
P/N 13-04397 ..... $6.75

FUEL VENT COVER

The fuel vent cover is designed to fit most fuel vents, and will not pressurize the fuel system. The ribbon is nylon with a vinyl coating and silkscreened letters. P/N 13-02817 ..... $10.95

REMOVE BEFORE FLIGHT STREAMER

Red "REMOVE BEFORE FLIGHT" Streamer with white lettering. Measures 2" wide and 17-1/2" long

2" X 17" ..... P/N 13-06238 ..... $5.75
3" X 31" ..... P/N 13-11731 ..... $8.50

BLADE PITOT COVER

Fits Piper, Katana, some Rockwell, and late Grumman aircraft.

P/N 13-02379 ..... $6.85

KEY CHAINS

Remove before flight key chain with white letter REMOVE BEFORE FLIGHT on red banner

P/N 13-02836 ..... $3.95

Key ring with a white printed "I'D RATHER BE FLYING" on blue banner.

P/N 13-02949 ..... $2.95

Key ring with blue writing "I LOVE FLYING" on off-white banner

P/N 13-02950 ..... $2.95

REMOVE BEFORE FLIGHT KEYCHAIN

Red, "REMOVE BEFORE FLIGHT" is 11-1/2" in length. Great for your keys, ID, or badge. The "REMOVE BEFORE FLIGHT" is silk screened in white on red nylon. ..... P/N 13-03822 ..... $2.95

PROFLIGHT AIRCRAFT KEY CHAINS

ProFlight aircraft personal streamer with attached ring and slogan "I'D RATHER BE FLYING". P/N 13-10450 ..... $1.95

ProFlight aircraft personal streamer with attached ring and slogan "I LOVE FLYING".

P/N 13-10448 ..... $1.95

ProFlight aircraft personal streamer with attached ring and slogan "REMOVE BEFORE FLIGHT". P/N 13-10447 ..... $1.95

ProFlight aircraft personal streamer with attached ring and slogan "HAVE YOU CLOSED YOUR FLIGHT PLAN".

P/N 13-10449 ..... $1.99

PS

PITOT TUBE COVERS

REMOVE BEFORE FLIGHT STREAMER

2-1/4" wide, 17" long red polyester fabric with white writing: "Remove Before Flight"
P/N 13-01458 ..... $4.75

UNIVERSAL STATIC PORT COVERS

SPC-101

SPC-102

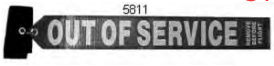
An inexpensive, yet very effective alternative to other covers and plugs. The SPC-101 is designed to fit an aircraft with one static port on each side of the aircraft and the SPC-102 is designed to fit an aircraft with two static port on each side of the aircraft.
Features: • Universal design to fit most aircraft • Lightweight entire assembly weighs less than 1/2 pound • Attaches with heavy duty lever cups designed to lift up to 40 pounds each • No fuselage modification required • Prevents the possibility of any damage to static ports by being and externally mounted cover • Malleable lightgauge red anodized aluminum easily conforms to virtually any surface contour • Adjustable to allow for attaching lever cups on or around decals and pin striping • Installed at temperatures from -20°F to 110°F
SPC-101 ..... P/N 13-06723 ..... $176.90
SPC-102 ..... P/N 13-06724 ..... $189.75

PITOT COVERS

Avoid costly damage to your pitot-static system. Protects from dust, insects, wind and other foreign matter. Will not pressurize pitot-static system.

MODEL 4602 - Fits Piper, Katana, some Rockwell, and late Grumman aircraft.P/N 13-06395 ...$8.75
MODEL 4935 - Bootie Type, all Naugahyde, white boot, red with white printing, 2" x 16". ..... P/N 13-06397 ..... $9.50

STREAMERS



5811 "OUT OF SERVICE" - 3" x 24", yellow printing on red reinforced vinyl with grommet and ring. 2" securing strap with grommet and velcro. ..... P/N 13-06399 ..... $8.95

5813 "DO NOT TOW" - 3" x 16", yellow printing on red reinforced vinyl with grommet and ring. 2" securing strap with grommet and velcro. P/N 13-06401 ..... $10.95

4604 "REMOVE BEFORE FLIGHT" - 2" x 16", white printing on red reinforced vinyl with grommet and ring.
P/N 13-06396 ..... $4.95

PITOT TUBE COVER INSTALL TOOL

This tool was developed, in response to fleet owner and FBO requests. They were having experienced difficulty installing Covers onto high wing Pitot Probe locations, e.g., Cessna Caravans, Bush aircraft with Tundra tires, float planes and amphibians. In field trials it was found that this tool is also very useful to install-remove the same Covers onto over-the-nose Pitot Probes, of Very Lite and commercial jet aircraft! Features: * View-Through cover grippers for easy install * Low mass for control in windy conditions * Ergonomic shape to reach high wing, and most over-the-nose mounted probes * All weather non-slip handle grip .....P/N 13-06672..... $62.85

REMOVE BEFORE FLIGHT STREAMER TAKE OFF EH

The blazing yellow colour of this foot-long, ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions, so it can't be missed. Each streamer comes complete with eight inches of size-adjustable, highly visible reflective shock cord and safety clips. The cord is attached to the streamer with a rugged black oxide coated zinc eyelet. These features make the streamer ideal for any remove-before-flight application, including gear pins, cowl plugs, AOA indicator cages, TAT, ice detector and static port covers. P/N 13-12386 ..... $12.95

PITOT TUBE PLUG 3/4 INCH TAKE OFF EH

Our very durable 3/4" inside diameter vented plug with its unmistakable Plane Sights Remove-before-Flight Streamer provides a perfect easy-on, easy-off solution. The blazing yellow color of this foot-long, ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions, so it can't be missed. The poly plug is attached to the streamer's rugged black oxide coated zinc eyelet with a stainless steel ring. This ¾"plug Fits Cessna 150, 152, 172, 177, 182, 200 series, and 337 models. P/N 13-12385 ..... $13.95

PITOT TUBE PLUG 5/8 INCH TAKE OFF EH

The Plane Sights 5/8" inside diameter vented pitot plug with its unmistakably conspicuous Remove-before-Flight Streamer provides the perfect easy-on, easy-off solution, while protecting against insect and water contamination. The blazing lime green colour of this foot-long, ANSI-compliant and weather-resistant reflective streamer stands out equally well in daylight or darkness under all weather conditions, so it can't be missed. The plug is attached to the streamer's rugged black oxide coated zinc grommet with a galvanized steel ring, and is vented to prevent pressurization damage to the pitot static system. This 5/8" Plug Fits Aero Commander, Twin Beach, Bonanza, Cessna 300/400/500, Conquest Series, Grumman, Lear, Mooney, Piper Cheyenne and Navajo aircraft.
P/N 13-12384 ..... $13.95

LIGHT SPORT PITOT PLUG KIT TAKE OFF EH

The Plane Sights extremely conspicuous and very durable Light Sport/Homebuilt Pitot Plug Kit provides a perfect fit for many homebuilt pitot tubes, light sport pitot tubes, and aircraft fuel vents. The kit includes several vented plugs so it even works with double-tube systems and is guaranteed not to pressurize your pitot static system. The blazing yellow color of the included foot-long, ANSI-compliant and weather-resistant reflective remove-before-flight streamer stands out equally well in daylight or darkness under all weather conditions, so it can't be missed. The kit comes complete with three different-sized pitot tube plugs, our unique streamer, and two rust-resistant coated triangle rings. The kit can also be used to prevent insects from plugging your fuel vent, which is known to cause loss of power with Cessna, light sport and home-built aircraft. WARNING: CHECK WITH YOUR AME AND CONSULT YOUR OWNER'S MANUAL BEFORE USING A FUEL VENT PLUG.
P/N 13-12387 ..... $13.95

BRUCES UNIVERSAL CUSTOM PITOT TUBE COVERS

The Original and World's Finest Aircraft Covers for Airplanes, Jets, Helicopters, Gliders and QEC Off-link Jet Engines.
Once the material for each order is cut into its appropriate parts, highly trained sewing machine operators meticulously assemble the products with durable thread, rivets, and canvas trim.
Pitot Tube Covers, made of Naughahyde vinyl, are designed to cover the entire pitot assembly. Slipping on over the tube, the cover tightens around the base with a special Velcro strap detail. A "remove before flight" streamer is attached to the cover. Non-burning Pitot Covers are designed to withstand more than 500° Fahrenheit, and will prevent the pitot cover from melting onto the tube if the pitot heat is accidentally turned on with the pitot cover attached
Pitot Tube Cover for the following applications: • Beech: Bonanza B35, Bonanza B36, Baron B58 • Cessna: Cardinal 177, Centurion 210, Corvallis 350 • Cirrus: SR20, SR22 • Grumman: American AA5 • Piper: Comanche PA24, Cherokee Six PA32 • Lancair: IV, Columbia 300, Columbia 350, Columbia 400, Lancair 320, Lancair 360 • Mooney: Ovation, M20, 201, 205, 231, 252 & MJ20 MSE
P/N 13-15994 ..... $28.75

Pitot Tube Cover for the following applications: • Cessna: 150, 152, 172, 175, 180/185 Skywagon, 182 Skylane, and 206 Stationair. • Grumman AA1. P/N 13-15995 ..... $28.75

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

CONTROL LOCKS – EZ FLAP

AIRCRAFT WINDLOCK

The Wind-Lock is designed to attach to an aircraft's controls inside the cockpit. The none-ridged mechanism keeps tension on the Elevators, holding them in the full down position. This position also allows moisture to drain from inside the control surface. It also holds the Ailerons in a streamlined position. As the wind gusts, resistance is applied. The harder the wind blows, the more resistance is applied to the controls. When the wind dies down, the Wind-Lock allows the Ailerons to return to their normal position. As the load is reduced, the tensioning mechanism reduces pressure on the control yoke. P/N 05-04044..... $72.75

AMC AIRPLANE CONTROL LOCK

Rather than tying your seat belt to your controls, try AMC's new Airplane Control Lock. This lightweight control lock will stop your control surfaces from moving with the winds and will also prevent damage to your controls such as bending. This new Control Lock is lightweight and easily stored.

Airplane control lock cessna or any aircraft with control spacing of 14"-19".....P/N 13-02851.....$77.95
Mooney.....P/N 13-03164.....$77.95
Cessna 210.....P/N 13-03165.....$77.95
Cessna 206.....P/N 13-03166.....$77.95
Skymaster.....P/N 13-03167.....$77.95

KENNON GUST LOCKS

Locks flaps, ailerons, elevator or rudder securely. Made from special weather resistant, high density, closed cell foam with a nylon eyebolt! Won't scratch.

P/N 07-01329..... $23.50

PAD-LOK CONTROL SURFACE LOCK

Like it says, a padded lock. Effectively locks control surfaces while the padding compresses to the proper configuration and protects the surface finish. Padding won't absorb water. Hard-to-miss Dayglo color, plus yarn streamers. Wt. 10 oz.

P/N 13-22700..... $17.95

THE CONTROL SAVER

The Control Saver control lock was designed for Piper and Mooney aircraft to protect aircraft controls in high wind gusts. It holds the ailerons in the neutral position and stabilizer in the down position. This control lock is light weight, easy to use and fits in an area as small as your shirt pocket. Sold to thousands of Piper and Mooney owners worldwide. P/N 13-15505..... $39.95

SAF-T-STOP

Saf-T-Stop is an auxiliary seat stop mechanism approved by the FAA for use with Cessna seat track A.D. #87-20-03. Installs easily, sliding over seat track. Approved for: Cessna 150, 152, 172, R172, 175, 180, 182, 185, 190, 205, 206, 207, 210, 303, 337. Not a seat lock, Saf-T-Stop is designed to restrict rearward motion if the seat lock fails. P/N 13-18510..... $45.50/pr

AILERON & RUDDER SOFT LOCK

The Aileron & Rudder Soft Lock is made out of a durable foam that will not scratch your paint. Slides in gap between rudder and vertical stab. Keeps rudder from moving while plane is on the ground. Comes with "Remove Before Takeoff" flag. Patent Pending.

P/N 13-11615..... $38.75

RANS CONTROL LOCK

RANS has developed a control lock that attaches to most models. The lock consists of a bungee cord, a couple of hooks and cap that slips over the top of the control stick. Allows for bungee tension to be set for a particular model. Not hard bolted so if an outside force against the control surfaces occur, the bungees will absorb the load. P/N 13-10434..... $22.90

REMOVE BEFORE FLIGHT AIRPLANE CONTROL LOCK

Piper and Mooney aircraft do not have control locks. That's why there is now a Control Saver control lock to meet the needs of pilots who fly these planes.

PA-28 1968-97.....P/N 13-12726.....$39.95
PA28 1997-Current.....P/N 13-12727.....$39.95
PA32 1968-97.....P/N 13-12728.....$39.95
PA32 1997-Current.....P/N 13-12729.....$39.95

LIGHT SPORT CONTROL LOCKS

These control lock is easy to install and positively locks the ailerons and elevator of the aircraft models listed below. Gust lock is manufactured using 6061T3 aluminum. The control stick clamping portion has a protective sleeve to prevent damage to special control handles. The latching mechanism is tow locking buttons that cannot come loose until released by the pilot which insures the owners that their ailerons and elevators are safe from wind damage. The control lock is red anodized with a "Remove Before Flight" decal, and each unit comes complete with instructions in a 4" x 4" x 12" box. Only weighs 3 1/2 ounces.

VANS RV CONTROL LOCK CL200 - Eligible Aircraft Models: Carbon Cub SS, Cessna SkyCatcher, Comet FK-12, Diamond DA40, Highlander, J-3 Cub, Legend Cub, Peregrine FK-04, Renegade Falcon, Savage Cub, Stearman PT-17, Tecnam P92 & P2008, Van's RV4, RV6/6A, RV7/7A, RV9/9A, RV10 P/N 13-11304 ..... $49.50

VANS RV CONTROL LOCK CL212 - Eligible Aircraft Models: Vans RV12 only. P/N 13-11319 ..... $49.85

VANS RV CONTROL LOCK CL100 - Eligible Aircraft Models: Piper-Sport and SportCruiser only. P/N 13-11269 ..... $49.85

VANS RV CONTROL LOCK CL110 - Eligible Aircraft Models: Aerotrek A220 & A240,AirCam,Alto 100,Breezer ELSA, Bristel, Champion Scout, Citabria, Decathlon,Diamond DA20 & TC100,Evector Harmony & Sportstar, KitFox Super Sport 7, Lightning LS1, Luscombe,Peregrine FK-9, Phoenix, Ran's SL-19, Coyote 2, S-7LS, Remos LSA, SeaRay, Spirit, Sting S4, Tecnam P2002 P/N 13-11318 ..... $49.50

PIPER AILERON GUST LOCKS

The Posi-Lock was designed to address the need for a true control lock for spring return flaps on the Super cub and similar Piper equipped aircraft. Constructed of aircraft aluminum and Stainless steel over-center adjustable latch hooks. Includes "REMOVE BEFORE FLIGHT" banners on each gust lock. Patent Pending.

Model No.	Description	Part No.	Price
PA18SET	4 PC, 2 Aileron, 2 flap	13-14759	$345.00
PA18A	2 Aileron gust locks	13-14760	$197.75
PA18A	2 flap gust locks	13-14761	$197.75
PA22SET	4 PC, 2 Aileron, 2 flap	13-14762	$345.00
PA22A	2 Aileron gust locks	13-14763	$197.75
PA22F	2 Aileron gust locks	13-14764	$197.75
PA12SET	4 PC, 2 Aileron, 2 flap	13-14765	$345.00
PA12A	2 Aileron gust locks	13-14766	$197.75
PA12F	2 flap gust locks	13-14767	$197.75

UNIVERSAL CONTROL LOCK

Stainless steel construction with silicone rubber to protect aircraft interior and folds into small package for easy storage. Installs in seconds from the pilot seat and fits most aircraft with a control column. Other control locks are not required like the one Cessna provides. Cannot get your feet on the Pedals to taxi aircraft and keep the elevator in the nose down position.

P/N 13-13075.....$254.00

EZ FLAP HANDLE EXTENSION

Because EZ Flap puts the flap control at the correct location close to the yoke (instead of down on the floor under the panel), pilots can finally remain upright while using the flaps, and stay focused on takeoff/landing, obstacles, terrain, traffic, and instrument scan. No more bending over - no more loss of visibility. EZ Flap improves the performance of the pilot!

EZ Flap mounts to the existing aircraft flap handle with no disassembly and no de-rigging in 20-40 minutes, with only two small screw holes. The original aircraft flap control remains fully functional. 100% made in the USA. Full FAA STC-PMA approval on 95% of all US manual flap aircraft.

CESSNA/PIPER FLAP HANDLE EXTENSION APPLICATIONS: Cessna: 170 / 172 / 175 / 180 / 182 / 185. Piper: PA-28 / PA-32 Cherokee Family. Piper: PA-34 / PA-44 Seneca / Seminole. Beech: 19/23/24 Musketeer Family P/N 13-06946 ..... $499.00

SUPERCUB HANDLE EXTENSION APPLICATIONS: Piper: PA-18 Super Cub. Piper: PA-20 / PA-22 Pacer / Tri-Pacer. Maule: M-5 thru M-9 Family. Stinson: 108 Family P/N 13-07438 ..... $499.00

PS

AIRCRAFT LOCKS

PROP LOCK CHAIN

The THEX50 is a "T-HEX" maximum security chain 5 ft in length with hardened 10mm hexagon shaped links. Hexagon shaped case hardened trip heat treated super chain. This heavy duty Prop Lock Chain is the perfect way to insure the security of your aircraft, particularly at remote or foreign airports. The hexagon shaped, heat treated heavy duty chain can endure over 10 tons of cutting force, insuring your aircraft against theft. A black nylon cover over the chain protects your aircraft from the chain when in place. The Prop Lock Chain is 5 feet long and weighs 12lbs. P/N 13-05182 ..... $46.85

WHEEL CHOCK LOCK

This innovative aircraft security device clamps to the wheel which prevents theft of the aircraft, while the built-in chock prevents the wheel from rolling forward when parked. The lock and chock are yellow, while the red rubber coated arms protect the finish of the wheel. Fits any type of wheel up to 12" wide. Lifetime warranty. P/N 13-06141 ..... $73.75

YORK GUST-LOK™

The York Gust Loks the ultimate protection for your plane from wind and theft. It locks the control surfaces in a neutral position and prevents damage to control surfaces and tail caused by wind gust loads. It is welded steel, fully adjustable, is lightweight, and features a powder coat finish. The York Gust Lok is compact for easy storage and is quick and easy to use. Wt: 2.2 lbs.

CONTROL WHEEL AIRCRAFT

Aircraft	Part No.	Price
PA-28, PA-32, PA-24, PA-30 & PA-39, PA-32R, PA-34 & PA-44	13-00855	$243.95
Commander 112 / 114	13-32730	$234.95
Mooney, Grumman Goose, Maule (Tricycle gear & Seaplane) PA-23, & Grumman American, Myers 200 & Commander200	13-00863	$255.95
Cessna Single engine 150'&172's, Helio Courier, 295/395	13-00864	$254.95
Cessna Single engine 180, 206 & 210's fixed & retract gear & Cessna 337	13-00865	$271.95
Cessna Twins except 337 & 310	09-00329	$299.95
Aerostar, Commander 500, Beech Baron, Bonanza, Duke & 18/C-45, Lake L-A-4 (except Renegade)	13-32790	$249.95
Cessna Tailwheel, Stinson, Beech Staggerwing	13-32800	$234.95
Lake Amphibian	13-32820	$112.95
Beech King Air	13-32830	$266.95
Cessna 310's	13-32840	$266.95
Aeronca Chief 508, Taylorcraft BC 12-D, Stinson 108 & 108-1	13-32850	$234.95
PA-38	13-32860	$234.95
Maule (Tailwheel)	13-32871	$237.95
Piper PA-31, Chieftain, Navajo, Cheyenne	13-32880	$266.95
Socata (Trinidad), Grumman Widgeon	13-32890	$241.95
Seawind	13-32885	$234.95
Dehaviland Beaver	13-00866	$299.95
Cessna Twins (except 337 & 310)	13-00867	$299.95
Piper Malibu	13-00868	$299.95

STICK CONTROL AIRCRAFT

Aircraft	Part No.	Price
J3 w/Shin Knocker Tubes	13-00871	$266.95
J-4	13-11870	$266.95
Piper PA-12	13-00872	$266.95
Piper PA-16	13-00873	$266.95
Piper PA-14	13-00875	$266.95
Piper PA-15/17	13-00876	$266.95
Piper PA-18 & J3 Shin knockers	13-00877	$266.95
Piper PA-20	13-00878	$167.98
Champ & Citabria	13-00879	$299.95

Aircraft	Part No.	Price
Husky, Pitts	13-00880	$299.95
Micco	13-00881	$299.95
Nanchang CJ-6	13-11872	$266.95
Swift	13-00883	$299.95
RV-6	13-00884	$266.95
RV-8	13-11868	$266.95
Kit Fox	13-00886	$266.95
Waco	13-00887	$266.95
Lancair IV	13-00888	$266.95
Luscombe	13-11869	$266.95
Bellanca	13-06114	$266.95
YAK 52	13-11871	$266.95

YORK ACCESSORIES

Do not throw away warning flag (included with each Gust-Lok™, but also sold separately) ..... P/N 13-00869 ..... $21.50

AIRGIZMO UNIVERSAL GUST LOCK

The AirGizmos Gust Locks are designed to quickly lock virtually any control surface securely. Its bright color and integrated flag reminds you to remove before flight. The rubber cushions ensure that your finish will be protected. They are lightweight and portable. Perfect for carrying in the plane wherever you go.

P/N 13-06139 ..... $32.95

AVIATION PROP LOCK

The Prop Club® inhibits flight by creating an out-of-balance condition. Made of tempered steel, The Prop Club® is an anti-theft device that locks securely onto the propeller at the hub via a four-digit combination. The small Prop Club® has a compressed opening range of 4-1/4" to 5-1/2"(wt: 2.4 lbs) and the large Prop Club® has a compressed opening range of 6" to 8"(wt: 2.8 lbs). As long as the Prop Club® can attach to the base of the prop within this range, and the closed dimensions are smaller than the widest part of the prop, The Prop Club® will remain securely attached to the propeller hub. It will not work on props that maintain the same width from base to tip.

Small Prop Club ..... P/N 13-03378 ..... $179.00
Large Prop Club ..... P/N 13-03379 ..... $189.00

THE ALPHA WHEEL LOCK 2000

The Alpha Lock 2000 adjusts to virtually any wheel size in seconds and completely immobilizes the aircraft or vehicle wheel from rotating or turning. The lock is pick and drill resistant and cannot be frozen with freon. Soft, coated arms will not mar or scratch wheels and rims. Furnished in bright red color to warn thieves, weather resistant, and carries a 2-year warranty. Excellent for locking aircraft, autos, trucks, trailers, boat trailers, motorcycles, RV's, etc. Locks anything on wheels! Wt: 8 lbs. P/N 13-00436 ..... $151.75

THE PLANE LOCK

For Cessna C-172-210s, except for the C-177. Prevents the wind from popping your doors open and provides an added measure of security against break-ins. No tools or STC required. From outside the aircraft, the pilots door is locked by reaching through the window (prior to closing it) and pushing down the door safety handle. Then, slip the Plane Lock over the window sill and lock the window shut. P/N 13-03386 ..... $151.75

THROTTLE MIXTURE LOCK

Here's a simple, inexpensive aircraft theft deterent, that fits virtually all push-pull throttle and mixture controls. The device will accept shafts up to .375" diameter, is made of heavy-gauge cadmium plated steel, and uses a simple padlock (not included).

P/N 13-18500 ..... $13.95

AIRCRAFT THROTTLE LOCK

Protect your aircraft from theft! This throttle lock is recommended by the International Aviation Theft Bureau, Avemco Insurance Co., AOPA and other insurance companies. Available for vernier or non-vernier throttle.

Vernier Lock..... P/N 13-08000 ..... $89.75
Non-Vernier Lock..... P/N 13-08100 ..... $89.75

NELSON AILER-LOCKS

- 2 Sizes
- 13" RBF streamer
- Locks flaps, ailerons, elevators, or rudder

Ailer-Lock standard (4.25") ..... P/N 13-02829 ..... $16.95
Ailer-Lock Large (10")..... P/N 13-22705 ..... $32.00

SKYLOK

Skylock is an inexpensive throttle lock for aircraft with Cessna type push-pull throttles. The device will accept shafts up to .375" diameter, and is made of heavy-gauge cadmium plated steel. Skylock affords great peace of mind to aircraft owners at very little cost. Just put in place after every flight, secure with your own favorite padlock, and your throttle cannot be moved! Simple, but it works. P/N 13-18500 ..... $13.95

ANTI-THEFT LOCK FOR BONANZAS

Built for those incomparable Beechcraft. All have FAA STC/PMA as applicable. The rugged, locksmith quality key lock combines forces with hardened steel pins embedded in the lock body that roll to defeat cutting. Bright red color, easy to use, installs in just seconds. Patent Pending.

P/N 05-03435 ..... $274.50

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

H3R AVIATION FIRE EXTINGUISHERS

The FAA recommends and/or requires Halon fire extinguishers on aircraft. H3Rs Halon fire extinguishers are the extinguishers of choice in the aviation industry. They cause no mess or damage, and do not require taking a plane out of service for clean-up; a costly process for both the aircraft owner and insurance carrier. The heat-seeking quality of the Halon gas makes it a superior fire fighting agent.

DISPOSABLE, LOW-MAINTENANCE HALON 1211-1301 BLEND -

Contain a proprietary blend of the "liquid streaming agent," Halon 1211, and the gaseous "total flooding agent," Halon 1301. The blend's power lies in the Halon 1301, which is both a firefighting agent and a propellant. Low maintenance and non-rechargeable. Lightweight aluminum canister Disposable. Tested to ANSI/UL 711 and UL 1093. Meets DOT requirements Meets the requirements in Advisory Circular 20-42C , "Hand Held Extinguishers for Aircraft" and/or NFPA 408, "Standard for Aircraft Hand Portable Fire Extinguishers" 12-year shelf life. Fire extinguishers include a mounting bracket.

RECHARGEABLE, STURDY INDUSTRY-STANDARD HALON 1211 -

Required on commercial transport aircraft. Although classified a "liquid streaming agent," Halon 1211 also performs remarkably well as a "total flooding agent," seeking out and extinguishing fires in inaccessible places. A 6-year maintenance and 12-year hydrostatic test are required.Rugged steel cylinder. Pressure gauge enables easy confirmation of charge. Tested to ANSI/UL 711 and UL 1093. Meets DOT requirements. Meets the requirements in Advisory Circular 20-42C , "Hand Held Extinguishers for Aircraft" and/or NFPA 408, "Standard for Aircraft Hand Portable Fire Extinguishers". Fire extinguishers include a mounting bracket or a wall hook.

HALON 1211-1301 BLEND UNITS	Part No.	Range	Price
RT A400 - 14 oz. (UL Rating 2B:C)	13-07650	4-6 ft	$158.75
RT A600 - 1.2 lb. (UL Rating 2B:C)	13-07655	6-8 ft	$203.95
RT A1200 - 2.5 lb. (UL Rating 5B:C)	13-07660	7-9 ft	$373.00

HALON 1211 UNITS	Part No.	Range	Price
A344T - 1.3 lb. (UL Rating 2B:C)	13-01993	9-12 ft	$107.95
A344TC - 1.3 lb. (UL Rating 2B:C)	13-02546	9-12 ft	$154.75
C352TS - 2.5 lb. (UL Rating 5B:C)	13-01966	9-15 ft	$187.95
C352TSL - 2.5 lb. (UL Rating 5B:C)	13-02547	9-15 ft	$205.95
C354TS - 3.0 lb. (UL Rating 5B:C)	13-02548	9-15 ft	$217.95
A1600 - 3.5 lb. (UL Rating 1A:5B:C)	13-07665	8-10 ft	$513.00
B355T - 5.0 lb. (UL Rating 10B:C)	13-02545	9-15 ft	$292.95
B369 - 15.7 lb.(UL rating 1A:10B:C)	13-02557	12-18 ft.	$561.95
B371 - 19.9 lb. (UL rating 2A:40B:C)	13-02558	12-18 ft.	$668.95

FIRE EXTINGUISHER BRACKETS

BKT400 - Brackett for the RT-A400 Fire Extinguisher
P/N 13-06166 ..... $10.50

BKT600 - Brackett for the RT-A600 Fire Extinguisher
P/N 13-06167 ..... $11.50

BKT1200 - Brafkett for the RT-A1200 fire Extinguisher
P/N 13-06168 ..... $14.50

845 - Brackett for the A344T Fire Extinguisher
P/N 13-06170 ..... $9.75

845 - Brackett for the A344TC Fire Extinguisher
P/N 13-06171 ..... $9.75

817S - Brackett for the C352TS, C352TSC, C354TS Fire Extinguisher
P/N 13-06172 ..... $15.85

BKT1600 - Brackett for the A1600 Fire Extinguisher
P/N 13-06169 ..... $13.50

H3R BILLET MOUNTS

H3R Performance hand held 1 lb. and 2.5 lb. fire extinguishers come standard with aviation style mounting brackets. Stylish and versatile billet mounting accessories are also available. Band clamps fit 2.6" or 3.0" diameter fire extinguishers, and can be combined with the flat surface mount or either of the two roll bar mounts. Available in polished and brushed finishes. One year limited warranty.

Brushed - Band clamp for 1.0/1.4 lb. fire extinguishers
P/N 13-06065 ..... $79.95

Brushed - Band clamp for 2.5 lb. fire extinguishers
P/N 13-06067 ..... $79.95

Brushed -Flat surface mount ..... P/N 13-06069 ..... $42.85

SAFECRAFT FIRE EXTINGUISHERS

A feature not found on other extinguishers is the "swivel" head design. The discharge head can be rotated to align the pull cable, which provides more installation flexibility. The aluminum cylinder is U.S. DOT approved and is capable of being refilled by Safecraft Inc. The extinguisher will accept two separate discharge lines, which allows installation flexibility currently not found in competing fire extinguishers. White powder coated cylinder with red aluminum anodized head. Designed to be mounted in the "head down" attitude.

3 lb. ..... P/N 13-01634 ..... $385.00
5 lb. ..... P/N 13-01633 ..... $385.00
10 lb. ..... P/N 13-05177 ..... $619.00

FIREFLY PLUS FLASHLIGHT/STROBE

The Firefly Plus is a flashlight/emergency locator strobe which is visible for over one mile. The operating life of the strobe is 10 hours, and 2 hours for the flashlight (continuous). Firefly Plus operates on 2 AA batteries (not included) and made of durable ABS plastic. Waterproof & weighs 4 oz. Size: 2" dia. x 5-3/8"h. Excellent addition to any aircraft or home emergency kit.

P/N 13-54050 ..... $38.75

C-STROBE LIGHT

The C-Strobe Light is a life preserver signaling emergency strobe which attaches to a life jacket or life vest with a steel pin or Velcro straps. The omni-directional strobe light is visible up to 2 miles. C-Strobe features a slim, lightweight, waterproof case and operates more than 8 hrs (continuous). Operates on 2 AA alkaline batteries (not included).

P/N 13-54020 ..... $29.60

MINI B 300 PERSONAL RESCUE TRANSMITTER

• In-line speaker emits audio warble to confirm activation and transmission of distress signal or to notify of accidental activation • Exclusive ACR audio indication of transmission allows effective self-test • User-replaceable battery •Frequency stability exceeds ETS 300 152 standard • Perfect for use as Crew-Overboard system when combined with Vecta2™ Direction Finder • Floats if dropped overboard • 121.5 MHz (SAR frequency) • Antenna maximizes peak effective radiating power when fully extended. • Battery installation instructions included Operating life: 24 hours @ -20°C (-4°F)

P/N 13-02416 ..... $209.95

RESCUE LASER FLARE MAGNUM™

Ahand-held nighttime laser signaling device that provides a convenient, effective way to signal a rescue party up to 20 miles (32 km) away, depending on atmospheric conditions. It's ease of operation, long life and waterproof design makes it the perfect survival signaling device. Unlike conventional pyrotechnic flares, the Rescue Laser Flare™ is non-flammable, non-hazardous and can operate continuously for 72 hours on two replaceable AA batteries.

72 Hour ..... P/N 13-01924 ..... $79.95
15 Hour ..... P/N 13-01923 ..... $89.95

EMERGENCY STROBE

• Waterproof • USCG approved • Operates up to 60 hours • Uses D battery • Red lens available

Strobe ..... P/N 13-02811 ..... $24.75
Mounting Tri-pod ..... P/N 13-14016 ..... $65.00

ACTIVE EXTINGUISHING LINE

Active Extinguishing Line is totally independent, 1kg, fire extinguishing system from any power source. Its main secret lies in the heat detector in a form of a line made out of special laser predriller polymer, shich will react instantly to any source of heat or fire. This line (heat detector) is connected to reservoir containing fire-extinguishing agent: hexafluoropropane FE-36. Inside of the protected device (equipment) a loop made out of the heat detector breaks, creating a mini sprinkler, directly over source of fire or heat, extinguishing it instantly. In a moment of activation the system closed circuit switch collapsses sending a signal informing of fire. For experimental aircraft only. Ask for status of pending STCs.....P/N 13-03266 ..... $698.00

1301 HALON FIRE SUPPRESSION SYSTEM

The Stroud 1301 Halon System is designed for use in Experimental and Personal light aircraft. The complete system includes 5 lb. 1301 Halon bottle with mounting assembly, actuating valve, 3 spray nozzles, Bulkhead Tee, and 25 feet of aluminum tubing and 16 ft. long pull cable. 1301 Halon is approved for occupied areas and leaves no residue.

P/N 13-07670 ..... $523.00

RECHARGEABLE, DURABLE EPA-APPROVED HALOTRON 1™

While it is less powerful pound for pound than Halon 1211, Halotron 1 offers all of Halon 1211's clean agent benefits, and Halotron 1 is less damaging to the ozone layer. H3R Aviation offers two Halotron 1 fire extinguishers: one FAA-approved unit for aircraft use and one wheeled unit for the flight line/ramp. These rechargeable extinguishers have pressure gauges and require a 6-year maintenance and a 12-year hydrostatic test

P/N 13-02562 ..... $6,785.00

PS

SMOKE HOODS - LIFE VESTS

PARAT C EMERGENCY SMOKE HOOD

The PARAT C is a lightweight, portable easy to don smoke escape hood designed for selfrescue in the event of a fire. The PARAT C protects the wearer for a minimum of 15 minutes from smoke, carbon monoxide and toxic gases normally present during a fire. It is ideal as a personal escape device which can be used in emergency situations occurring in homes, office or apartment buildings, schools, hospitals, plant facilities and hotels. FEATURES:Hood made from flame-retardant, selfextinguishing PVC material. Bright orange hood with high visibility and excellent reflective properties. One universal size. Can be worn with glasses, long hair and beards. Large visor treated with anti-misting agent provides wide range of vision for quick escape. Elastic collar makes hood easy to don and adjust. Comfortable, soft, inner mask allows wearer to breath normally through nose or mouth, Perfect for frequent travelers.

Parat C Smoke Hood ..... P/N 13-04232 ..... $174.75
Parat C Wall Holder ..... P/N 13-06642 ..... $20.75

PROVITA SMOKE HOOD

The Provita Smoke Hood provides 20 vital minutes of life-saving evacuation time. It is proven to protect from smoke and 98% of toxins created by fire, including: Chlorine, Ammonia, Acrolein, Hydrogen Chloride, and Hydrogen Sulfide. Lightweight and compact. One size fits all. Smoke hood easily comes out of its 8" x 6" x 1" vacuum sealed bag - ready for use in seconds. There is no front or back which allows the smoke hood to be put on quickly for panic situations. The rubber seal easily slips over your head and seals - not allowing any smoke through. The smoke hood provides 360 degree vision and 20 vital minutes to escape a smoke-filled room.

P/N 13-11343 ..... $189.00

EAM TWIN CELL CREW LIFE VEST

This twin-cell vest comes with 35 lbs.of buoyancy for adults of all sizes. This model is designed with back panels and has received approvals from countries around the globe. Comes with water-activated light, like all EAM life vests. 5 years frequency of inspection

P/N 13-12683 ..... $76.95

TWIN CELL LIFE PASSENGER VEST

This twin-cell, single attachment, single adjustment vest has become the industry standard. 5 year frequency of inspection. TSO-C13e Approved. Inflated Buoyancy: 35 lbs. minimum. Temperature: Functional Range: -40 to 140°F (-40 to 60°C),Storage Range: 0 to 120°F (-17.8 to 48.9°C) Humidity: Functional Range: Up to 95% Relative Humidity, Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level CO2 Gas Charge: 2 x 0.035 lbs. (2 x 16 grams). Frequency of Inspection: Every 60 months

P/N 13-12686 ..... $69.95

EAM XF-35 LIFE VEST

Only 1.13 lbs. (513 grams). The XF-35 offers significant fuel savings to operators wishing to stay with the added security of a twin-cell vest. 5 year frequency of inspection standard. Inflated Buoyancy: 35 lbs. minnimum. Approvals: USA FAA TSO-C13f; German LBA Approval No. 40.321/33; United Kingdom CAA Approval No. AR01445. Storage Range: 0 to 120°F (-17.8 to 48.9°C) Humidity: Functional Range: Up to 95% Relative Humidity; Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level

5 yr. Passenger Yellow ..... P/N 13-12677 ..... $69.50
10 yr. Passenger Yellow ..... P/N 13-12685 ..... $69.95
5 yr. Crew Orange ..... P/N 13-12678 ..... $69.95

EAM UXF-35 LIFE VEST

This single cell vest is the lightest weight aviation vest in the world, weighing only .9 lbs (410 grams). 5 year frequency of inspection comes standard, 10 year version available. TSO-C13f Approved. Inflated Buoyancy: 35 lbs. min. Temperature: Functional Range: -40 to 140°F (-40 to 60°C); Storage Range: 0 to 120°F (-17.8 to 48.9°C) Humidity: Functional Range: Up to 95% Relative Humidity; Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level

UXF-35 ..... P/N 13-12679 ..... $68.95
UXF-35 (10 year) ..... P/N 13-12684 ..... $69.95

EAM BRAVO LIFE VEST

This continuous wear, yoke style life vest is ideal for helicopter pilots or anyone flying long distances over open water. Includes a 2-inch, extra wide, waist strap for comfort and security. Equipped with water-activated light, retro-reflective tape and a whistle. Optional storage pouches attach to the waist strap to hold signal kit or EPIRB. Easy fold lines for repackaging. Functional Range: -40 to 140 oF (-40 to 60 oC);Storage Range: 0 to 120 oF (-17.8 to 48.9 oC) Humidity Functional Range: Up to 95% Relative Humidity Storage Range: Up to 70% Relative Humidity Altitude -2000 to 45,000 feet above sea level

P/N 13-12680 ..... $239.95

EAM GA12 SINGLE CELL LIFE VEST

Ideal for inland and near shore operations where an FAA approved life preserver is not required. Provides 17lbs. buoyancy. Functional Range: -40 to 140 oF (-40 to 60 oC);Storage Range: 0 to 120 oF (-17.8 to 48.9 oC) Humidity: Functional Range: Up to 95% Relative Humidity Storage Range: Up to 70% Relative Humidity Altitude: -2000 to 45,000 feet above sea level

P/N 13-12682 ..... $36.95

EAM INFANT LIFE VEST

This specially designed and affordable life vest is made exclusively for children less than 35 lbs. (16 kg). EAM infant vests come in USA and European versions, for the constantly changing safety markets of commercial carriers.

With Co2 ..... P/N 13-12681 ..... $87.95
Without Co2 ..... P/N 13-12778 ..... $97.75

SURVIVAL PRODUCTS LIFE RAFTS

Perfect for general aviation. Small and compact it fits in a lightweight valise 4" x 12" x 14" and weighs only 12 lbs. But don't be fooled by its size, price or weight. This raft will do the job for you under the most adverse condition. It provides a fresh water buoyancy of 190 lbs. per person and a deck area of 3.6' per person which exceeds all Govt. standards. Inflated, the raft is 46' inside and 68' outside and every square inch has been meticulously made from raw materials and components tested for their durability and life expectancy. Every raft is pressure tested and all seams and adhesive bonds rigorously checked prior to release. Raft includes sea anchor, bailing bucket, hand inflation pump, and CO inflation system. Optional survival equipment shown below. 6-13 person raft is 5' x 12' x 14' and weighs 18 lbs. Available in non-TSO'd and TSO'd versions.

Non-TSO'd 4-6 Person Life Raft ..... P/N 13-31610 ..... $1,498.00
Non-TSO'd 6-13 Person Life Raft ..... P/N 13-31660 ..... $1,853.00
Non-TSO'd 4-6 Person Basic Raft w/o canopy ..... P/N 13-31670 ..... $1,864.00
TSO'd 4-6 Person Raft w/canopy only ..... P/N 13-31680 ..... $2,082.00
TSO'd 4-6 Person Raft w/91 equip ..... P/N 13-31690 ..... $2,418.00
TSO'd 4-6 Person Raft w/121 equip ..... P/N 13-31700 ..... $2,633.00
TSO'd 4-6 Person Raft w/135 equip ..... P/N 13-31710 ..... $3,059.00
Non-TSO'd 8-12 Person Basic Raft w/o canopy ..... P/N 13-31715 ..... $2,489.00
TSO'd 8-12 Person Raft w/canopy only ..... P/N 13-31725 ..... $2,750.00
TSO'd 8-12 Person Raft w/91 equip ..... P/N 13-31735 ..... $3,187.00
TSO'd 8-12 Person Raft w/121 equip ..... P/N 13-31745 ..... $3,338.00
TSO'd 8-12 Person Raft w/135 equip ..... P/N 13-31755 ..... $4,070.00
TSO raft with FAR91 kit 6M ..... P/N 13-05861 ..... $4,395.00

SURVIVAL RAFT ACCESSORY EQUIPMENT KITS

Far 91 Kits includes: canopy with inflatable mast, equipment container, signal flag, 3 signal flares, two cell flashlight with alkaline batteries, first aid kit, raft repair kit, sea dye marker, signal mirror, food rations, water rations, and signal whistle. Far 121 Kits includes: All of above plus: utility knife, survival manual and sponge. Far 135 Kits included: all of above plus: magnetic compass, eight pint desalter, fishing kit, 75 ft. retaining line, two paddles and radar reflector.

Far 91 Emergency Kit ..... P/N 13-31620 ..... $477.00
Far 121 Emergency Kit ..... P/N 13-31630 ..... $578.00
Far 135 Emergency Kit ..... P/N 13-31650 ..... $1,072.00

REVERE COASTAL COMPACT RAFT

Double 200 lb. SuperRev™ ballast pockets, it enhances stability in rough sea conditions. Its light weight allows for easy deployment and the compact size makes stowage easy in the smallest of spaces. Operation is easy. Just open the red flap on the valise and extend the painterline. Give a hard pull and the raft inflates automatically in less than 30 seconds. Coastal Compact Raft is not recommended for offshore use.

Raft	Part No.	Price	With Canopy	Price
2	11-07471	$965.00	---	---
4	11-07472	$1,148.00	11-07473	$1,295.00
6	11-07474	$1,390.00	11-07475	$1,487.00

PS

REVERE AERO COMPACT LIFE RAFTS

Our lightest and most compact liferaft...ever! Ideal for general aircraft, the Aero Compact series offers an enhanced level of safety for overwater flights. With double 200 lb. ballast pockets, the Aero Compact enhances stability in the roughest of sea conditions. Its light weight allows for easy deployment, and the compact size makes stowage easy, even in the smallest of spaces. Equipment Pack Contains: 2 Red Hand Flares - USCG/SOLAS, Bailer, Signal Mirror, Paddles, Repair Kit, Seasick Tablets, Water Tight Flashlight, Extra Flashlight Batteries, Whistle, Sponges, Floating Knife. Specifications: Weight: 13 lbs • Dimensions - Packed (L"xW"xH"): 14 x 9 x 5. *Neither Canopies or Equipment Packs are available for 2-Person Aero Compacts.

2 Person ..... P/N 11-09399 ..... $1,029.00
4 Person ..... P/N 11-09401 ..... $1,295.00
4 Person Canopy ..... P/N 11-09402 ..... $1,479.00
4 Person Canopy and Standard Kit ..... P/N 11-09403 ..... $1,659.00
4 Person Canopy and Standard Kit Plus ..... P/N 11-09404 ..... $1,698.00
4 Person Canopy and Deluxe Kit ..... P/N 11-09405 ..... $2,125.00

REVERE AERO ELITE LIFE RAFTS

The Aero Elite offers both crew and passengers easy usage when facing the stress of a life threatening situation as opposed to other liferafts that can be difficult to lift and transport at the time of need. Vertical bulkheads inside divide the tube into two independent air-holding compartments. If one compartment is punctured, the other keeps you afloat.

The Aero Elite includes one large oversized tube 13" round as well as an automatically inflated canopy. Offering a spacious 4 square feet per person, the Aero Elite also includes a heavy duty boarding ladder for entry assistance. The Aero Elite also includes an inflatable floor, stowage pockets, zippered windows, flashing strobe, extra large ballast pockets, an extensive equipment pack including USCG/SOLAS flares plus much more. A training DVD comes with the raft to help you and your crew prepare for use in an emergency situation. The Aero Elite is vacuum- packed to add greater protection against the environment and minimize servicing costs as service is required just once every three years. If serviced according to manufacturer's specs, the Aero Elite offers a 12 year warranty. Equipment Pack Contains: 2 Red Hand Flares - USCG/SOLAS, Bailer, Signal Mirror, Paddles, Repair Kit, Seasick Tablets, Water Tight Flashlight, Extra Flashlight Batteries, Whistle, Sponges, Floating Knife Aero Elite Liferaft Data Sheet. Features: Highest quality, lightest weight coastal liferaft available today. Large, oversized tube 13 inches in diameter. Spacious 4 square feet per person interior Automatically Inflating Canopy. Heavy duty boarding ladder. Insulated Inflatable Floor. Stowage Pockets. Zippered Windows Flashing Strobe Extra Large Ballast pockets for stabilization in rough seas Extensive Equipment Pack including USCG/SOLAS pyrotechnics. Training DVD to help crew prepare for use in an emergency situation. Vacuum packed to add greater protection against environment and minimize servicing costs. Service required just once every three years. 12 year limited warranty.

4 Person ..... P/N 11-09409 ..... $2,617.00
6 Person ..... P/N 11-09411 ..... $2,865.00
8 Person ..... P/N 11-09412 ..... $2,884.00

SWITLIK INFLATABLE LIFE RAFT

The Switlik ISPLR brings advanced military design and mission-proven durability to a single place life raft available for mariners and pilots who are serious about their personal lifesaving equipment. Fully reversible. The unique U-shaped design allows the raft to be fully reversible, allowing quick, easy entry from the water - whichever side is up when it automatically inflates. The ISPLR's low slung floor design allows seating at a slight recline lowering the center of gravity well below the waterline, increasing stability in rough waters. Zip to the elements. Twin zippers, located on either side, allow you to partially close the canopy, keeping the elements out while providing great ventilation. ..... P/N 13-16033 ..... $895.00

COMFORT MAX INFLATABLE LIFE-VEST

Features: •USCG approved for persons at least 16 years of age weighing 80 lbs. and above with a chest size between 30" and 52" •Dual waist belt stainless steel adjusters. Provides for easy adjustment with both hands and a more custom fit •Exterior inflation system access flap. Allows for clear, direct access to the CO2 cylinder for rearming. CO2 cylinder can be replaced without opening and unfolding the entire PFD •Waist strap and back strap attachment points fully connected and reinforced from inside for added strength •Heavy duty 420 denier nylon packcloth outer cover •Twin 2" wide back straps for comfort and security •Comfortable neck. The neck area has no Velcro or edge binding to cause chafing or abrasion for all-day comfort.

Red ..... P/N 13-04373 ..... $119.95

REVERE PFD RE-ARMING KIT

This manual PFD Rearming Kit for Comfortmax Inflatable PFDs is an instant CO2 manual inflation system. P/N 13-08831 ..... $17.95

REVERE COMFORT MAX MANUAL BELT PACK

Specifications: Model: 45-61098-101N. Sizing: Adult Universal. User Weight: More than 90 lbs (> 41kg) Chest Size: 30"-52". Buoyancy: 35 lbs (156 Newtons). Approx. Unit Dimension: 10"x4"x3". Appro. Weight: 2 lbs. Color: Navy.

P/N 13-08826 ..... $74.85

REVERE SPORT MAX MANUAL REARM KIT

Color: Red P/N 13-08829 ..... $16.75

EAM TITAN XF LIFE VEST

The TITAN XF is carefully designed to offer advanced protection for crew aboard an aircraft during over-water flight. Created with a heavy-duty front zipper and a fixed mesh back, the TITAN XF remains securely fastened throughout flight.

Blue With D Rings ..... P/N 13-12961 ..... $332.00
Blue Without D Rings ..... P/N 13-12959 ..... $319.00
Orange With D Rings ..... P/N 13-12961 ..... $332.00
Orange Without D Rings ..... P/N 13-12959 ..... $319.00

EAM GENERAL SURVIVAL KIT

This kit contains equipment for survival and search/rescue aids for use by aircraft crew and passengers after an emergency landing in uninhabited terrain. Collection of equipment designed for survival and search & rescue situations in case of an emergency.

P/N 13-12823 ..... $294.95

SEE WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE SELECTION OF EAM SURVIVAL KITS

WORLD CLASS LIFE JACKET

Features of this life jacket include a tailored off-the-neck fit that will not limit your range of motion, reflective tape on cover and bladder for greater visibility, and a safety whistle (attached to bladder). Adult universal size. Halkey-Roberts 3F inflator. Manual inflation by pulling lanyard or by oral tube. Over 35 lbs. (150 Newton) buoyancy. Clear window to view arming status of mechanism. 2" encircling body belt with buckle. USCG Approved Type III.

P/N 14-00682 ..... $199.50

INFLATABLE BELT

Features include reflective tape on the bladder for greater visibility, 2" deluxe web belt with buckle, and single point indicator window. Inflates in seconds to over 35 lbs. of buoyancy. One size fits adults over 80 lbs. with 30 - 52" chest size. Will not inhibit your range of motion while hunting or fishing. U S Coast Guard approved Type III. Rearm kit 38MRK.

Specifications:35 lbs. of buoyancy (over 150 newton) • Equipped with single point indication of arming status • Reflective tape on cover and bladder for greater visibility • Safety whistle attached to bladder • 2" deluxe web belt with buckle • USCG Approved Type III • One size fits adults over 80 lbs. ..... P/N 14-00681 ..... $149.50

PS

SURVIVAL EQUIPMENT

MUSTANG INFLATABLE LIFE PRESERVERS

INFLATABLE BELT PACK PFD - A perfect choice for any boater interested in a lightweight design with high mobility, the Mustang Survival MD3003 Classic Inflatable PFD can be easily worn over a t-shirt in warm weather or over a jacket in colder conditions. The simple construction makes it is easy to wear and maintain, the durable nylon shell makes it suitable for a variety of activities and the inflated cell features a safety whistle and SOLAS reflective tape for high visibility.

P/N 13-06372 ..... $114.95

DELUXEINFLATABLEPFD(MANUALACTIVATION) - The Deluxe Inflatable PFDs combine the advanced safety of inflatable technology with product enhancements such as comfort-improvement features and a safety inspection window to easily tell users if the inflator is ready for use. The Velcro(TM) closure makes it easy to wear and maintain while closing to the outside to reduce chafing around the neck and chest; the neoprene Comfort Collar(TM) eliminates neck irritation. Made for recreational enthusiasts and professionals alike, the MD3085 sports a manual inflation system and is lightweight and close-fitting to ensure it doesn't interfere with daily activities.

P/N 13-06373 (BLUE) $168.95
P/N 13-06381 (RED) $163.75

MD3085/MD3087 RE-ARM KIT - The Manual Inflatable Re-Arm Kit contains everything necessary to re-arm your Mustang Survival Manual Inflatable PFDs after deployment.
Contains: one 33gram CO2 cylinder, one re-arming instruction manual.
For model numbers: MD3085 - Deluxe PFDs 3F Manual - USA, MD3087 - Deluxe PFDs 3F Manual with Harness - USA
MD3051 - Deluxe PFDs 3F Manual - Canada
MD3052 - Deluxe PFDs 3F Manual with Harness - Canada
Use only Mustang Survival re-arm kits. Use of other re-arm kits may result in improper operation or failure to operate and will void the product's warranty.

P/N 13-06374 ..... $21.75

MANUAL INFLATABLE RE-ARM KIT: MA7170 - The Manual Inflatable Re-Arm Kit contains everything necessary to re-arm your Mustang Manual Inflatables after deployment. Contains: one 33gram CO2 cylinder, one green inflator pin, one re-arming instruction manual.
For model numbers: MD1166, MD3000, MD3003, MD3004, MD3020, MD3025, MD3091 Use only Mustang Survival re-arm kits. Use of other re-arm kits may result in improper operation or failure to operate and will void the product's warranty.

P/N 13-06375 ..... $18.95

CLOSED CELL NEOPRENE HOOD

BREATHABLE CONSTANT WEAR AVIATION COVERALL

The MA7348 Closed Cell Neoprene Hood offers increased protection against the elements when worn with Mustang Survival anti-exposure gear. Designed for easy integration with the MSD900, MSD901, MSD585, MAC200 and MAC300, the hood provides exceptional head and neck insulation and includes a lanyard to tether hood to suit, an adjustable mouth guard for protection from spray and a velcro attachment point for an emergency light. Sizes: N/A or Universal Colors: RED

P/N 13-06380 ..... $60.75

EGRESS POCKET BAG FOR SURVIVAL VEST

The Egress Pocket Bag makes for easy storage of your survival vest. The bag has the ability to easily strap behind an aircraft seat. The orange ripcord is an easy release for an emergency situation in which a pilot can bail out of a burning plane and grab his or her survival materials without it getting in the way of a safe escape.

P/N 13-12582 ..... $42.75

TACTICAL AVIATOR FIRE RETARDANT SURVIVAL VESTS

Professional looking Aviators vest with Westex fire retardant fabric, Blue in color and reversible to High-visibility orange fabric for easy spotting.
Loaded model is prepacked with quality survival neccesities to help in an estimated 72 hours of a survival situation.
Attention: Items packed in vest may very, based on availability Color: Westex fire retardant fabric, Blue in color and reversible to High-visibility orange fabric

Empty			Loaded		
Size	Part No.	Price	Size	Part No.	Price
Medium	13-12580	$299.00	Medium	13-12581	$479.00
Large	13-12580-L	$299.00	Large	13-12581-L	$479.00
X Large	13-12580-XL	$299.00	X Large	13-12581-XL	$479.00
2X Large	13-12580-XXL	$299.00	2X Large	13-12581-XXL	$479.00
4XL Large	13-12580-4XL	$299.00	4XL Large	13-12581-4XL	$479.00

TACTICAL AVIATOR SURVIVAL VESTS

Professional looking Aviators black fabric, reversible to High-visibility orange fabric for easy spotting.
Loaded model is prepacked with quality survival neccesities to help in an estimated 72 hours of a survival situation. Attention: Items packed in vest may very, based on availability. Color: Black 600 Denier Cordura outer layer with High Visibility Orange 600 Denier Cordura inner layer

Empty			Loaded		
Size	Part No.	Price	Size	Part No.	Price
Medium	13-12577	$175.00	Medium	13-12578	$350.00
Large	13-12577-L	$220.00	Large	13-12578-L	$350.00
X Large	13-12577-XL	$175.00	X Large	13-12578-XL	$350.00
2X Large	13-12577-XXL	$175.00	2X Large	13-12578-XXL	$350.00
4XL Large	13-12577-4XL	$175.00	4XL Large	13-12578-4XL	$350.00

SNUGPAK CHRYSALIS SLEEPING BAGS

Chrysalis is a sleeping bag that has evolved to the next level; putting you in control of temperature and comfort by transforming from a warm, snug sleeping bag, into a cool and spacious one, with a built in LED light to assist you. The bag boasts all the features of a quality Snugpak® mummy-style sleeping bag but the jumbo zip baffle can be opened out to give much more room within the sleeping bag by opening the expander panel. The extra space within the bag allows air to move around, keeping the bag cooler. And if the temperature drops, just zip the bag tighter and instantly boost the warmth around you. The Chrysalis is the ideal sleeping bag for unpredictable conditions. LED Light. Expander Panel System (EPS). Chisel Shaped Foot - For Extra Comfort. Zip Baffle. Anti-Snag Two-Way Zipper. Snugfit Hood. Hanging Dry Tabs.

MODEL 1 - Temperature Rating: 45°F to 36°F (7°C to 2°C). Legnth:: 87". Weight:: 35 oz. Width:: 30-24". Pack Size:: 6 x 8". Fill:: Softie®. Shell:: Paratex (micro) with Reflectatherm. Liner:: Paratex (light).

P/N 13-12457 ..... $119.00

MODEL 2 - Temperature Rating: 36°F to 27°F (2°C to -3°C). Legnth:: 87". Weight:: 46 oz. Width:: 30-34". Pack Size:: 7 x 9". Fill:: Softie®. Shell:: Paratex (micro) with Reflectatherm. Liner:: Paratex (light).

P/N 13-12458 ..... $139.00

MODEL 3 - Temperature Rating: 23°F to 14°F (-5°C to -10°C). Legnth:: 87". Weight:: 56 oz. Width:: 30-34". Pack Size:: 9 x 10".

P/N 13-12459 ..... $159.00

MODEL 4 - Temperature Rating: 14°F to 5°F (-10°C to -15°C). Legnth:: 87". Weight:: 69 oz. Width:: 30-34". Pack Size:: 9 x 11".

P/N 13-12460 ..... $179.00

MODEL 5 - Temperature Rating: 5°F to -4°F (-15°C to -20°C). Legnth:: 87". Weight:: 85 oz. Width:: 30-34". Pack Size:: 10 x 13".

P/N 13-12461 ..... $199.00

PS

SWITLIK AVIATOR LIFE VEST

The Switlik Aviator Life Vest is supremely more comfortable to wear, and specifically designed for the seated position in your aircraft. It's the vest you'll forget you're wearing. The new interior cell folding technique combined with our open V-Neck design allows the Aviator to lay over your shoulders relieving the pressure on your neck during those long flights. We have located our new beaded handle in the center of the vest allowing for an easier approach for deployment. The breakaway safety feature eliminates the risk of snagging. The red handle also offers the best visibility in low light conditions. The Switlik Zipper closure keeps your inflatable vest secure at all times. The simple reliable dual breakaway design provides immediate inflation when activated. Backup oral inflation tubes are conveniently located on either side of the vest and easily reached through the side access flaps. P/N 13-12687 ..... $239.00

SWITLIK X BACK AIR CREW LIFE VEST

The aptly named X-Back is ergonomically fitted to your shoulder contour for a perfect fit. As accessories are added the weight is distributed over your shoulders and off your neck for vastly improved comfort. The adjustable X-Back straps provide enough range making it one size fits all. The MOLLE (Modular Lightweight Load-Carrying Equipment) system lets you customize your vest with the accessories you need. The contoured cut of the MOLLE side panels locates the accessories away from your midsection. The simple reliable dual breakaway design provides immediate inflation when activated. Backup oral inflation tubes are conveniently located on either side of the vest and easily reached through the side access flaps. High visibility red beaded handles are found on both sides of the vest making for simple activation. They incorporate a breakaway safety feature to prevent snagging.

P/N 13-12688 ..... $399.00

SWITLIK AVIATION LIFE VEST AV-35H

AV-35H Double Cell Airline Passenger Vest. The AV-35H donning style features a single waist strap and adjusting buckle without a back panel. The AV-35H donning style features a single waist strap and adjusting buckle without a back panel.

P/N 13-16031 ..... $69.95

SWITLIK AVIATION LIFE VEST AV-200

The Switlik AV-200 is the latest advancement is airline life vests. Offering airlines a lightweight, compact and inexpensive vest while meeting all the safety features required by the FAA. The AV-200 donning style features a single waist strap with a single adjusting buckle. Meets FAA/TSO C-13f Approval: 2 Year TBO. P/N 13-16032 ..... $51.85

SWITLIK X BACK BOTTLE HOLSTER

The Switlik HEEDS/HABD Holsters are specifically designed to be mounted on an angle, readily accessible and unobstructed by safety restraints. This ideal location reduces fatigue by keeping weight off your neck

HEEDS ..... P/N 13-12689 ..... $85.00
HABD ..... P/N 13-12690 ..... $51.00

SWITLIK X BACK LEG STRAPS

Quick donning adjustable leg straps are neatly stored using the Velcro™ ties making them a clean and simple accessory to have.

P/N 13-12691 ..... $59.00/pr.

SWITLIK X BACK MOBILE PHONE POCKET

Safe, secure and easily accessible cell phone holster fits all popular models. P/N 13-12692 ..... $22.00

B.A.S.E.™ SURVIVAL KIT

This amazingly light kit weighs just 2.4 oz. The water-tight aLokSak® will keep everything extra dry to 200 ft. under the water and is strong enough to be used many times over.

Sparkie™ FireStarter: This lightweight emergency fire starter boasts one-handed operation! It generates intensely hot sparks and works in any weather. Sparkie™ weighs only 0.8 of an ounce.

WetFire™ Tinder (2 cubes): You will love this amazing fire starting tinder is non-toxic, odorless, smokeless, and you can start a fire even in the driving rain. In fact, WetFire™ tinder actually burns longer when its WET! A small pile of tinder shavings is all you need to start a roaring fire.

StarFlash® Signal Mirror: This signal mirror is unbreakable, can be aimed precisely, floats and can signal for communications up to 100 miles away. You can use it hiking, camping, or backpacking to apply first aid or camouflage. StarFlash® was chosen as the premier signal mirror of the U.S. Air Force and other government agencies 10 years ago.

JetScream™ Whistle: This whistle is one of the loudest in the world, any louder and it would cause physical pain, literally. You can hear JetScream's™ amazing 122Db ear-piercing shriek, above most natural or man-made noises. It is equivalent to the sound of a rock concert or a jet at take off. You can use JetScream™ in the city or woods for communication and personal protection.

aLOKSAK Waterproof Storage Bag: This lightweight bag is waterproof to 200 feet!

Kit Includes: 1 Orange Sparkie™ Fire Starter, 2 WetFire™ Tinder Cubes, 1 StarFlash® Signal Mirror, 1 Orange JetScream™ Whistle, Clear plastic flexible aLokSak® pouch (watertight to 200 ft.)

Specifications: Dimensions: 6 1/2" x 3 7/8" x 1 5/8" (16.5 x 9.8 x 4.1 cm)
Weight: 2.4 oz. (168g). P/N 11-10515 ..... $26.75

ION FLASHLIGHT FIRESTARTER™

During outdoor adventures, flights over remote areas, or in any emergency survival situation, there are two pieces of equipment that you never want to be without, a flashlight and a firestarter. Solo Scientific combined the two into one lightweight, compact, powerhouse of a product called the ion Flashlight Firestarter™!

The ion Flashlight Firestarter™ is a flashlight, a firestarter, a magnetic tool, has a safety mechanism, is knurled for grip, water proof, shock resistant, and can even be used to cauterize wounds in the field (by qualified medical personnel only).

The energy efficient ion Flashlight Firestarter™ will work in any environment that will support life and uses a super bright (but energy efficient) white LED for illumination. P/N 13-11695 ..... $118.75

WATERPROOF NOTEBOOK

Durable waterproof, tear-proof notebook with handy survival essentials checklist on back cover. Great for keeping logs in wet environments and pocket-sized to fit anywhere. Pencil included.

Specifications: 50 page count, Dimensions: 3" x 5", Weight: 2.6 oz.

P/N 11-10522 ..... $3.95

SWITLIK X BACK BUDDY CLIP

When ditching your aircraft it's important for survivors to stay together. The Switlik Buddy Clip allows you to quickly tether yourselves together via a 6 foot (1.8 m) 550 lb (250 kg) test line with a CRES snap hook. When not in use it is neatly packed into a nylon pouch. The pouch is designed to be attached with snaps to the MOLLE system and by dead ending the buddy line loop directly to the MOLLE Loops as a back up. P/N 13-12693 ..... $17.00

SWITLIK X BACK ALL IN ONE POCKET

The new All-In-One pocket allows you to organize all your equipment into one area. Complete with two zipper pockets, interior MOLLE straps, interior compartments, and a conveniently located pen holder on the outside. Available in left and right.

Right Side ..... P/N 13-12694 ..... $64.00
Left Side ..... P/N 13-12695 ..... $64.00

PS

PROFORCE SURVIVAL PRODUCTS

SNUGPAK SOFTIE ELITE 2 SLEEPING BAG

An all round two season sleeping bag. Supplied with its own compression stuff sack. Temp. Rating: 36°F / 27°F (0°C / -5°C). Weight: 46oz. Length: 86". Chest: 65" + EPS. Color: Olive. Pack Size: 8" x 8" (fully compressed) P/N 13-08778 ..... $152.15

SNUGPAK SOFTIE ELITE 3 SLEEPING BAG

Equipped with the unique easy to deploy EPS Expanda Panel System and its own sturdy compression stuff sack. A layer of the exclusive Reflectatherm metalized barrier helps to reflect heat back inside. Temp. Rating: Comfort 23°F / Low 14°F (-5°C / -10°C). Weight: 56oz. Length: 86". Chest: 65" + EPS. Pack Size: 9" x 9" (fully compressed)

Black ..... P/N 13-08780 ..... $194.65
Olive ..... P/N 13-08779 ..... $194.65

SNUGPAK SOFTIE ELITE 4 SLEEPING BAG

A generous fill weight of insulation combined with a layer of the exclusive Reflectatherm metalized barrier places this sleeping bag high in the thermal stakes, giving excellent all round protection Easy to deploy EPS Expanda Panel System. Supplied with its own compression stuff sack. Temp. Rating: Comfort 14°F / Low 5°F (-10°C / -15°C). Weight: 69oz. Length: 86". Chest: 65" + EPS. Color: Olive. Pack Size: 10" x 10" (fully compressed) P/N 13-08781 ..... $211.65

SNUGPAK SOFTIE 9 HAWK SLEEPING BAG

The Softie® 9 Hawk is a multifunctional true three season sleeping bag that covers most US temperatures and can be easily up rated to a four season bag by adding a Snugpak® liner. Temp. Rating: Comfort 23°F / Low 14°F (-5°C / -10°C). Weight: 53oz. Length: 86" Chest: 60". Color: Olive. Pack Size: 9" x 9" (fully compressed) P/N 13-08777 ..... $239.25

SNUGPAK JUNGLE BAG SLEEPING BAG

The Jungle Bag is an ideal sleeping bag for tropical conditions. Travelsoft Insulation was selected and chosen for its exceptional performance in hot and humid conditions. Can be opened out into a blanket for more versatility. Concealed roll away mosquito netting which can be zipped over the face. Temp. Rating: Comfort 45°F / Low 36°F (7°C / 2C). Weight: 27oz. Length: 86". Chest: 60". Pack Size: 6" x 6" (fully compressed)

Black ..... P/N 13-08783 ..... $75.65
Olive ..... P/N 13-08782 ..... $75.65
Desert Tan ..... P/N 13-10258 ..... $75.65
Red ..... P/N 13-10259 ..... $75.65

PROFORCE DRI-SAK

Store your sleeping bag, clothing, and any other items you want to keep dry in a Dri-Sak™. They are seam taped, nylon with a TPU Film Lamination to ensure protection if your gear takes an unexpected dive into the water. They are a great addition that can be used in conjunction with any of the Snugpak® backpacks or any other backpacks. Not intended to be submerged for extended periods of time. Roll-top closure must be closed correctly (recommended rolling 3 times and buckled to keep contents dry). Contact with abrasive or sharp objects can damage and/or compromise the integrity and waterproofness of our Dri-Sak bags. D-Rings for securing if necessary.

Medium - Dimensions: 6.75" x 18.125" / 17 x 46 cm. Volume: 8 liters. Weight: 2.29 oz. / 60 g

Olive ..... P/N 13-08784 ..... $17.00
Black ..... P/N 13-08785 ..... $17.00
Coyote ..... P/N 13-08786 ..... $17.00

Large - Dimensions: 8.5" x 20.75" / 22 x 53 cm. Volume: 13 liters. Weight: 3.17 oz. / 90 g.

Olive ..... P/N 13-08787 ..... $20.40
Black ..... P/N 13-08788 ..... $20.40
Coyote ..... P/N 13-08789 ..... $20.40

MULTIMAT SUPERLITE MAT

Offering the lightest and most compact options, using the very latest ultra light materials, meeting the highest standards for quality and reliability. Ultra-lightweight 20D rip-stop polyester top and base fabric. Quality ultra-lightweight, vertically drilled 14kg/m3 PU foam core for lasting performance and full inflation. TPU membrane for air-tight seal. Easy valve can be locked while adding air by mouth. Mats supplied with stuff sack matching upper fabric, retaining band and repair kit. Size: 72" x 20" x 1" (1830 x 510 x 25mm). Weight: 18 oz (530g). Temp Range: 5ºF to 130ºF (-15°C to +55°C). Color: Olive/Black (reversible). Compactness: 10.25" x 4.75" mid-folded (260 x 120mm) P/N 13-10253 ..... $84.15

PROFORCE EMERGENCY SURVIVAL BAG

The NDûR Emergency Survival Bag comes in a small compact packable size but yet opens into a full sized sleeping bag that will fit a fully clothed adult. It is made of a strong insulating material which reflects back 90% of the user's body heat. It not only helps to provide protection in various weather conditions but also prevents and assists treatment of Hypothermia. P/N 13-08798 ..... $6.80

PROFORCE COMBAT CASUALTY BLANKET

The NDûR Emergency Survival Blanket is made of strong insulating materials that reflects 90% of radiant body heat, reversible olive to silver. This large survival blanket provides emergency protection in all weathers and prevents and assists treatment of Hypothermia. Blankets are used as first response for preventing hypothermia in trauma cases. Hypothermia in trauma cases occurs regardless of ambient temperature. Stopping heat loss should begin immediately. It can also be used as a signaling device for easy identification P/N 13-08797 ..... $3.40

PROFORCE BACKPACKER MOSQUITO NET

Supplied with hanging kit and stuff sack, very compact, single point net for occasional use when backpacking space is at a premium. Fits snugly over single bed. The double strength valance with tent peg loops makes it ideal for outside use with a sleeping bag and pad. Treated with Deltamethrin as recommended by the World Health Organization, for added protection against insect borne diseases such as Malaria, Dengue Fever and Encephalitis. Color is Olive. Weight: 8 oz

P/N 13-08791 ..... $33.15

SNUGPAK® IONOSPHERE

The Ionosphere 2™ by Snugpak® is an extremely small and compact 1 person tent. The Ionosphere™ has a very low profile and is great for those looking for a 1 person tent to keep out of the elements. Just like The Bunker™, the Scorpion 3™ and Scorpion2™ the Ionosphere™ also too has a 5000mm PU Coated Fly. The Ionosphere™ has a single entry point, No-See-Um-Mesh and all seams are seam taped. A very impressive small compact tent by anyones standard. 1 Door, All seams are taped sealed Alloy Stakes (14 + 2 Spare Stakes), Comes with a Repair Kit to allow for repairs while on the move if needed. ..... P/N 13-10260 ..... $194.65

SNUGNUT

The Snugnut is an insulated hat and earmuffs in one. Constructed from the same high performance fabrics and Softie insulation used in our high performance sleeping bags this UK made deerstalker style hat is the ultimate in both day and night cold weather protection for your nut (AKA, Head) and ears.

Black ..... P/N 13-10267 ..... $44.25
Olive ..... P/N 13-10266 ..... $44.25

PILE PANTS

Temperature:: 23°F / 14°F -5°C / -10°C. Team up these pile lined Paratex Light pants with either the Snugpak® Pile Smock or Pile Elite Smock for an exceptionally warm wicking base layer system. Designed to be worn next to the skin to maximize the moisture management properties. Weights: 23oz to 27oz (Depending on Size).

Size	Olive	Price	Black	Price
Small	13-10264	$179.25	13-10265	$179.25
Medium	13-10264-M	$179.25	13-10265-M	$179.25
Large	13-10264-L	$179.25	13-10265-L	$179.25
X-Large	13-10264-XL	$179.25	13-10265-XL	$179.25
XX-Large	13-10264-XXL	$179.25	13-10265-XXL	$179.25

PS

PROFORCE PORTABLE WATER FILTRATION FLIP TOP BOTTLE

A flip top 28oz bottle. When you're travelling in areas where water quality is suspect, this unique water filtration bottle makes life easy. It gives you a convenient and low-cost alternative to boiling, purification drops and bottled water, and is suitable for travel throughout the world. Simply fill your bottle from any tap, stream, river or lake – even in third world countries – and enjoy safe, clean drinking water straight away. This lightweight yet durable bottle is made from top quality, BPA-free plastic, so it's 100% safe. Save money on bottled water, and reduce your plastic footprint by keeping hundreds of plastic bottles out of landfill. P/N 13-11998 ..... $38.50

PROFORCE PORTABLE WATER FILTRATION PULL TOP CANTEEN

A pull top 38oz canteen. When you're travelling in areas where water quality is suspect, this unique water filtration bottle makes life easy. It gives you a convenient and low-cost alternative to boiling, purification drops and bottled water, and is suitable for travel throughout the world. Simply fill your bottle from any tap, stream, river or lake – even in third world countries – and enjoy safe, clean drinking water straight away. This lightweight yet durable bottle is made from top quality, BPA-free plastic, so it's 100% safe. P/N 13-12001 ..... $37.50

PROFORCE PORTABLE WATER FILTRATION SURVIVAL STRAW

An advanced filter designed and tested by Seychelle Research Laboratories – one of the most sophisticated portable water purification devices in the world. Not only does it remove up to 99.99% of chemicals and other contaminants, it also protects you against viruses and bacteria to 99.9999% in water that other filters cannot remove. In addition it removes harmful heavy metals like mercury, lead, aluminum. This Survival Straw is made from BPA-free plastic, so it's 100% safe. Save money on bottled water, and reduce your plastic footprint by keeping hundreds of plastic bottles out of landfill.
P/N 13-11999 ..... $24.95

PROFORCE PORTABLE WATER FILTRATION RADIOLOGICAL REPLACEMENT FILTER

Portable water filtration system replacement filter for the 28oz and 38oz protable water bottle and canteen. P/N 13-12002 ..... $47.85

PROFORCE LENSATIC COMPASS

Lensatic Compass is great for anyone's survival bag to help one if the situation arises where they are separated from their group, lost their way on the trail or find yoruself in a dire drastic survival situation.
P/N 13-12003 ..... $24.95

PROFORCE MAP COMPASS

Map Compass features include: 3 scales, Liquid Filled, Map Symbol Drawing Holes, Lanyard included, Acrylic clear base w/ruler, Rotating Rings, Index lines, and Magnifier. 1.52oz. 5.51x2.36x.41.
P/N 13-12004 ..... $9.95

PROFORCE 6-IN-1 SURVIVAL COMPASS

6-in-1 Survival Compass is great for anyone's survival bag to help one if the situation arises where they are separated from their group, lost their way on the trail or find yoruself in a dire drastic survival situation. Contains a Compass, Whistle, Mirror, Magnifier, RearLED Light, Thermometer
P/N 13-12005 ..... $14.75

EGEAR 6 DAY LANTERN

eGear™ Lantern (Formerly Weekender Lantern) is. Compact, lightweight. Rubberized handle. Floats. Adjustable brightness. 9 LEDs total. Light glows through translucent brim. Will run for 48 hours on 'high' setting and up to an amazing 144 hours on 'low'.
P/N 11-10890 ..... $16.95

EGEAR 30 DAY LANTERN

The eGear™ Lantern is lightweight and can double as hanging light when globe is removed. Three 1.4W Nichia LEDs Up to 300 lumens on "high" setting 4-Mode electronic switch (press button) HIGH, MEDIUM, LOW & SOS-FLASHING. Amber LED Indicators show brightness levels. 30 days on 'low' mode, 3.5 days on "medium" mode, 32 hours on "high" mode, 15 days on SOS Flashing mode. Green LED indicator flashes on 'off' mode to show lantern location in darkness. Removable globe provides forward area light. Rubberized housing enhances impact resistance. Built-in recessed hook at lantern base for hanging as Downlight (see image below). Water and impact resistant. P/N 11-10940 ..... $35.50

EGEAR GUARDIAN SAFETY LIGHTS

The eGear™ Guardian is the lightest, brightest, toughest light in its class! It's easily seen when practicing your favorite outdoor activities. Just clip it on and go! Very lightweight -- yet tough and durable -- it will not restrict movement and may be attached anywhere. Affordable, wearable safety whenever you need to be seen in the dark. Be Seen Up to 2 Miles Away.

Color	Part No.	Price
Blue	11-10897	$11.25
Green	11-10898	$11.25
White	11-10899	$11.25
Yellow	11-10889	$11.25

UST BLASTMATCH FIRE STARTER

The patented BlastMatch™ generates a stream of super heated sparks literally three times the heat of a standard match. You can easily light any material (wood, paper, bark, cloth, or man-made fire starting tinder) that a match will ignite. Best of all, you can accurately aim the sparks to ignite a roaring fire in all weather conditions, and the BlastMatch™ will last up to a an amazing 4,000 STRIKES. You can't beat that! If your BlastMatch™ becomes wet, simply wipe it off and it is ready for use. In combination with Ultimate Survival Technologies' WetFire Tinder™, an all weather starting tinder, you can start a fire even in the driving rain.
P/N 11-10894 ..... $20.50

UST DELTA SHOCK AND STORM PROOF LIGHTER

Catalyzer coil provides ultimate windproof flame. Withstands winds of 70-80 miles per hour. Burns with clean hot flame at 2,000 degrees Fahrenheit. Flame Indicator Window located on side of combustion chamber glows when lighter is ignited. Fuel Level Indicator visually reveals fuel level. Piezo-Electric Ignition System eliminates need for batteries or flints, which fail when wet.. Piezo-electric system permits easy, one-handed operation good for over 30,000 ignitions.. Water Resistant O-Ring Seals keep water out when lighter cap is closed. Optimum performance in altitudes up to 8,000 feet.. Not intended for use in altitudes over 10,000 feet. P/N 11-10893 ..... $48.95

TRU-SPEC TACTICAL SOFTSHELL JACKETS

A highly breathable, insulated softshell jacket with natural body shaping for maximum mobility. For use in high energy and daily work situations. Constructed with a polyester faced wind stopping shell that sheds moisture exceedingly well and balances wind protection with active use breathability. The brushed polyester lining on the body wicks moisture and adds a degree of thermal insulation.

Size	Part No.	Price	Size	Part No.	Price
XS	13-11910	$89.95	XL	13-11914	$89.95
S	13-11911	$89.95	XXL	13-11915	$99.95
M	13-11912	$89.95	3XL	13-11916	$99.95
L	13-11913	$89.95	4XL	13-11917	$99.95

PS

PROFORCE SURVIVAL PRODUCTS – FLIGHT SUITS

PROFORCE SURVIVAL MATCHES 2PK

Wind & Waterproof safety matches. These matches will burn in the strongest winds and rain for approximately 12 seconds. 25 Matches per sealed plastic tube with striker. Proudly made in England and has an assigned NATO Stock Number 9920-00-966-9432 P/N 13-08792.....**$8.50**

PROFORCE ARMY FIRE STEELS & STRIKER

Easy and safe to use – Used by Swedish Special Forces – Will light a fire or ignite the fuel in a camping stove in rain or snow – Generates a 3000 C spark – Approved, preferred and recommended by Survival Experts Worldwide. Approx. 12,000 Strikes
P/N 13-08794.....**$10.20**

TURBOFLAME RANGER

The new Turboflame® Ranger is the ideal windproof lighter essential for any outdoor enthusiast's. With its double-power jets flames that can reach temperatures up to 1300oc. Also there is Gas level indicator a lanyard attachment point and safety cap.
P/N 13-10268.....**$21.25**

PROFORCE COMMANDO WIRE SAW

The strongest (over 100 lbs breaking strain) and most effective wire saw available. Cuts through wood, plastic, bone and even soft metals. Constructed using 8 strands of interwoven stainless steel wire, will easily reach inaccessible places. Attach rope to split rings on each end to cut higher branches. 24" sawing edge. Can also be used as a snare. Many uses for the outdoor and house. Retail Packaged. P/N 13-08795 .....**$6.80**

PROFORCE MARINE SAFETY WHISTLE

High pitched signaling whistle. NATO approved. One piece construction with lanyard hole. Bright Orange. Made in the UK. Ideal for Survival Kits.
P/N 13-08801.....**$0.85**

PROFORCE HEAVY DUTY BUNGEE CORDS

Ideal for securing cargo, packs and just about anything. Great for shelter building. Heavy duty 30" long x 5/16" in diameter with black plastic coated hooks. Sold in 4 packs. Color: Olive
P/N 13-08803.....**$6.80**

PROFORCE EMERGENCY SIGNAL MIRROR

Robust high impact plastic. Easy to use with one hand. Suns reflection can be seen for many miles. Floats if accidentally dropped in water. Retail Packaged. Measures 2" x 3"
P/N 13-08796 .....**$6.80**

PROFORCE COMBAT SURVIVAL TIN

Originally designed for the British SAS. Tightly packed in a useful metal tin. Contents include compass, whistle, candle, fishing kit, waterproof survival instructions, wind & waterproof matches, pencil, sewing kit, multi use flexible wire saw w/ split rings (can be used as a bow saw or snare wire), water tablets, safety pins, fire lighting flint and striker and multifunctional knife w / fold out scissors. Assembled in the US. Contents may vary.
P/N 13-08802.....**$29.75**

PROFORCE MICROFIBER ANTI-BACTERIAL TRAVEL TOWEL

Quick drying and bacteria resistant, packs to the fraction of the size of your traditional bath towel. Dr. Bacty® Antibacterial treated. Easy care, machine washable. It also comes with a dual pouch stuff sack, for drying and storage when wet.36" x 48". Olive Green.
P/N 13-08804.....**$27.20**

US AIR FORCE SURVIVAL HANDBOOK

Written for use in formal United States Air Force survival training courses, the U.S. Air Force Survival Handbook is the bible for pilots who want to stay alive—no matter what. 592 Pages.
Standard Size 8.5" x 11".....P/N 13-08790 .....**$12.71**

RESPONSE PACK

When travelling light, or when you may need to move out in a hurry, it pays to keep all your essential items together, with a place for everything this multifunctional carry case also doubles as a fanny pack, or as the British would call it, a bum bag. We use the same heavy duty materials in the Response Pak as we do in our series of backpacks. The Response Pak has a multitude of hidden internal storage pockets. The Response Pak has quickly become a favorite among military members as a great little med bag, perfect for those vital items each soldier needs. Supplies are NOT included

Olive.....P/N 13-10261.....**$24.65**
Black.....P/N 13-10262.....**$24.65**
Coyote.....P/N 13-10263.....**$24.65**

FLIGHT SUIT XFIRE

Those who fly, service aircraft, carry out tactical assignments, or search for victims and survivors all encounter risks in the performance of their duties. These easy to wear 27-P flight suits simply slip on over street clothes, zip up the front and they're ready to go. They combine high comfort with field tested and laboratory certified protection. Made from INTERLOCK, a fire resistant Nomex blend, provides an extra measure of assurance that you'll complete your mission safely time after time - and sets a new standard in comfort and safety. The new XFIRE Interlock fabric meets or exceeds the requirements of NFPA 2112-2007 standards on flame resistant garments for protection of industrial personnel against flash fires.

The suit is fashioned after the US military CWU27-P flight suit and comes with the standard design features you've become familiar with such as a bi-swing back, reinforced shoulders, vertical zipper pocket with bellowed pen/pencil stalls on flap with hook & loop closure, 2 large upper chest pockets, ook & loop waist adjustments, name tape on above chest pocket, double pull full length front zipper with inside protective flap, safety knife pocket, 2 cargo pockets with covered zipper opening, extra large calf pocket with covered zipper opening, zipper expansion opening with curtain at cuff, double needle felled joining seams and more!

Color	Part No.	Prices starting at
Sage	Call or visit our website for sizes and part numbers	$169.95
Army Digital		$169.95
Navy		$169.95
Khaki		$169.95

NOMEX FLIGHT SUITS

This Nomex flight suit is built to military specification FNS/PD 96-17 (MIL-C-83141A) as worn by all U.S. flight crews. Constructed of 92% Meta Aramid, 5% Para Aramid and 3% conductive fiber fabrics, which makes this garment flame-resistant. Features a two-way zipper with pull, six primary pockets, adjustable waist belt with VELCRO® brand fasteners, knife pocket on the left inseam, pencil pocket on the left sleeve and a gusseted back.

Features:

- Made with DuPont™ Nomex® N303 Fiber: Its thermal technology helps protect against hazards associated with electric arcs and flash fires including intense heat and flame. It is protection that's built into the fiber itself. So, it can never be washed out or worn away.
- Sewn to Military Specification FNS/PD96-17 (MIL-C-83141A)
- As Worn By All US Flight Crews
- Flame-Resistant Material
- Two-Way Zipper with Pull
- Six Primary Pockets
- Adjustable Waist Belt with Velcro Fastener
- Knife Pocket on Left Inseam
- Pen/Pencil Pocket on Left Sleeve
- Gusseted Back
- Sage Green and Tan Flight Suits are Near Infrared (NIR) Compliant

Color	Part No.	Prices starting at
Sage	Call or visit our website for sizes and part numbers	$174.99
Black		$174.99
Tan		$174.99

PS

GLOVES – UNDER ARMOUR

GENERAL UTILITY PLUS GLOVES

All-purpose and abrasion-resistant. This is the ideal performance work glove. Heavy duty non-slip reinforcement on the palm, fingers and thumb ensures lasting durability and grip. The ergonomic design reduces hand fatigue while enhancing wrist support. Features a terry cloth brow wipe on the thumb. This glove is ideal for any number of rugged applications.

Large.....P/N 13-09814.....$20.85
X-Large.....P/N 13-09815.....$20.85

TACKMASTER PLUS GLOVES

TackMaster Plus is designed to provide superior grip along with dexterity, comfort and durability. The palm is coated with an extra tacky silicone pattern for a secure grip on tools, boxes and windows. The index finger and thumb saddle is reinforced with non-slip in this critical wear area. The terry cloth thumb is made for comfortably wiping away sweat and debris.

Medium.....P/N 13-09816.....$20.85
Large.....P/N 13-09817.....$20.85
X-Large.....P/N 13-09818.....$20.85

PRO XT GLOVES

Pro XT is an extra heavy duty glove designed for rugged applications and total hand protection. The non-slip reinforced palm, fingers and thumb ensures lasting durability and grip. The unique 'one-piece saddle' reinforces this critical wear area. The top of hand features double knuckle protection and moisture wicking fabrics. It also features a terry cloth thumb wipe and supportive, velcro cuff and closure. If you are doing heavy duty work like logging, landscaping, demolition or farming - this is the glove for you.

Medium.....P/N 13-09819.....$23.85
Large.....P/N 13-09820.....$23.85
X-Large.....P/N 13-09821.....$23.85

WATERPROOF WINTER PLUS GLOVES

Waterproof Winter Plus is the ultimate winter work glove. 100% Waterproof and windproof, this glove is designed to keep your hands warm and dry without sacrificing dexterity. Triple layer technology of micro-fleece liner, waterproof membrane, and form-fit outer shell. Durable, dexterous, comfortable and warm - if you work or live in cold, wet winters you need this glove.

Medium.....P/N 13-09822.....$33.85
Large.....P/N 13-09823.....$33.85
X-Large.....P/N 13-09824.....$33.85

SAFETY ORANGE WATERPROOF WINTER GLOVES

Safety Orange Waterproof Winter is a waterproof, windproof high visibility winter work glove. Features triple layer waterproof technology along with reflective 3M Scotchlite™ on knuckle and wrist along with blaze orange coloring. Ideal for those in cold, wet working conditions in high traffic areas.

Medium.....P/N 13-09825.....$33.85
Large.....P/N 13-09826.....$33.85
X-Large.....P/N 13-09827.....$33.85

MAGID ROC GP110 GREY GLOVES

Made from an ultra-soft, grey, high-density, 13-gauge, seamless machine knit nylon blend, the ROC GP110 Work Gloves feature a full black micro foam coating offering exceptional comfort, flexibility, dexterity and added protection to the palm and back of the hand.

Micro foam nitrile coating improves upon the softness of standard nitrile while delivering a superior grip in dry or oily conditions. The nylon blended shell is ultra-soft and breathable. In addition to its comfort-enhancing properties, the ROC GP110 Gloves provide protection against cuts and abrasions, offering ANSI Cut Level 1 protection and ANSI Level 4 abrasion resistance. ROC GP110 Gloves have color coded knit wrists with matching color overcasts for easy sorting and dispensing and incorporate a rubber band edge finish to help prevent unraveling.

Size 10.....P/N 13-09637.....$4.95
Size 11.....P/N 13-09638.....$4.95

Warning! These products are flame-retardant, fire-retardant protection is available only where the flame-retardant fabric covers the skin and is intended to supplement – not replace - standard flame-retardant or ballistic protective equipment. Never use any Under Armour product as a substitute for ballistic protective equipment. Exposure of the skin to fire or flame can cause injury.

UNDER ARMOUR TACTICAL HOODS

Durable, moisture wicking Under Armour® comfort, engineered with fire retardant technology for added protection in the battlefield or on the streets. Ensures odor-free moisture transport. 100% 4.2 oz. Nomex®. Imported.

Fabric Teach: HeatGear			Fabric Teach: ColdGear		
Color	Part No.	Price	Color	Part No.	Price
MOD Green/ Silver	13-09271	$23.99	MOD Green/ Silver	13-09275	$30.00
Black/Silver	13-09269	$23.99	Black/Silver	13-09273	$24.99
Desert Sand	13-09270	$23.99	Desert Sand	13-09274	$24.99
Dark Navy	13-09272	$23.99	Dark Navy	13-09276	$24.99

UNDER ARMOUR FIRE RETARDANT HOOD

Engineered for the field: The latest evolution in UA Tactical HeatGear® performance. Durable, moisture wicking Under Armour® comfort, engineered with fire retardant technology for added protection in the battlefield or on the streets. ArmourBlock™ construction ensures odor-free moisture transport. 100% 4.2 oz. Nomex®. Imported.

Small.....P/N 13-09140.....$59.99
Medium.....P/N 13-09139.....$59.99
Large.....P/N 13-09138.....$59.99
X-Large.....P/N 13-09141.....$59.99

UNDER ARMOUR FIRE RETARDANT MOD TEES

Signature UA moisture transport. Modacrylic FR fabric Stealth logos. Anti-odor technology. FABRIC TECH: 75% Modacrylic 25% Tencel

See our website for lonsleeve part numbers and prices.

ShortSleeve			
Color	Size	Part No.	Price
Desert Sand	Small	13-09087	$49.99
	Medium	13-09086	$49.99
	Large	13-09084	$49.99
	X-Large	13-09088	$49.99
	XX-Large	13-09089	$49.99
	XXX-Large	13-09083	$49.99
Black	Small	13-09079	$49.99
	Medium	13-09078	$49.99
	Large	13-09077	$49.99
	X-Large	13-09081	$49.99
	XX-Large	13-09082	$49.99
	XXX-Large	13-09076	$49.99
Marine OD Green	Small	13-09099	$49.99
	Medium	13-09098	$49.99
	Large	13-09097	$49.99
	X-Large	13-09100	$49.99
	XX-Large	13-09101	$49.99
	XXX-Large	13-09096	$49.99
Floiage Green	Small	13-09093	$49.99
	Medium	13-09092	$49.99
	Large	13-09091	$49.99
	X-Large	13-09094	$49.99
	XX-Large	13-09095	$49.99
	XXX-Large	13-09090	$49.99
Dark Navy Blue	Small	13-09105	$49.99
	Medium	13-09104	$49.99
	Large	13-09103	$49.99
	X-Large	13-09106	$49.99
	XX-Large	13-09107	$49.99
	XXX-Large	13-09102	$49.99

VISIT WWW.AIRCRAFTSPRUCE.COM FOR ADDITIONAL UNDER ARMOUR APPAREL

PS

SURVIVAL KITS - FIRST AID KITS

TWO-MAN V.I.P. SURVIVAL PACK

It's staggering just how much useful equipment comes out of this 10"h x 11"w x 4"d backpack. Everything arranged logically and available the way you'd want it. Organized into 6 major divisions: medical/first aid, food & water, shelter & protection, fire & cooking, signals & lights, & "emergency devices," Wt; 20 lbs P/N 9217 ..... $282.95

NYLON CASE FIRST AID KITS

MODEL A FIRST AID KIT - International Orange Case Velcro Hold-Downs 10 FA Unit Kit Contents: • 1" X 3" Adhesive Bandages (16 Bandages) • First Aid Instruction Book • Adhesive Tape (2 Rolls) 1/2" x 2-1/2" yards each • 24" X 72" Gauze Compress • 4" Bandage Compress • Scissors • 2 Triangular Bandages 40" x 40" x 56" • Ammonia Inhalants (10 Capsules) • 6 Burn Gel Packets • Wire Splints 3-3/4" x 27" • PVP Iodine Wipes (10 Wipes) • Orange First Aid Case P/N 13-02944 .....$69.50

MODEL B FIRST AID KIT - International Orange Case Velcro Kit Contents: • Burn Gel Packets • Aluminized Thermal Blanket • Sissors • Emergency Strobe • Hema-Flex 4" Bandage Compress • 36" X 48" Gauze Compress • 1" X 3" Adhesive Strips • 1/2" Adhesive Tape (2 Rolls) • 2 Triangular Bandages • Ammonia Inhalants • Wire Splints • PVP Iodine Wipes.
P/N 13-02945 ..... $117.95

FIRST-AID SAFETY SCISSORS

Angle Kit Plastic Handle Scissors 4 1/2" can be used in all first aid kits.
P/N 13-12036..... $1.59

AIRCRAFT EMERGENCY SURVIVAL KIT

This is an ideal emergency support kit for plane, boat, home, office or school. This kit will sustain a person for 3 days. Includes: 2400 calories of ready-to-eat US Coast Guard approved food, sterile Coast Guard approved water, a lightweight (54' x 48") durable, waterproof blanket, & assorted first aid supplies, matches etc. P/N 9641.....$29.60

THE 98.6 DEGREE SURVIVAL KIT

The 98.6° KIT covers five critical equipment categories for a survivor in an emergency. The first three: Shelter, Fire, and Signaling represent the most important elements of any survival kit. The next two: Essential Tools and Water Disinfection & Storage, supplement and facilitate the use of the other items in the KIT. The entire package is a mere 5.5 inches long by 5 inches wide by 1 inch thick and weighs a little over 9 ounces. Outside Dimensions: 5.5" x 5" x 1". P/N 13-13061.....$79.99

3M™ ULTRATHON INSECT REPELLANT

Unique, time-release technology allows you to enjoy the outdoors longer. Provides lasting protection — up to eight hours against mosquitoes, gnats, chiggers, biting flies and ticks. Helps reduce the risk of contracting West Nile Virus and Lyme Disease.
2 oz. Lotion ..... P/N 09-01723 ..... $6.90

SAGA AVIATION THRUST

Fully equipped, the Thrust has 2 LED lights at each extremities to allow working in dark places. Made of stainless steel. Features: Sharp 3.0" blade, Pliers with wire cutter, 2 LED flashlights (each end, batteries included), Scissor, Bottle opener, Philips and flat head screwdrivers, Strong hook, High quality sheath with belt strap. P/N 13-09560 ..... $37.50

STAINLESS STEEL CARABINER

Stainless steel karabiner for the best flying performance guaranteed load 26kN extremely high tensile strength qualified for tandem flying each single piece is tested with 1700kg. Specifications: Weight: 138.0g
P/N 10-04494 ..... $32.50

QUEASE EASE MOTION SICKNESS RELIEF

QueaseEASE contains 100% pure and natural therapeutic grade essential oils formulated to relieve the queasiness associated with post-operative recovery, chemotherapy, morning sickness and motion sickness. (spearmint, peppermint, ginger and lavender) Works by simple olfaction: The molecules from the oils travel the olfactory track to the central nervous system where they interrupt the nausea cycle. Inhalation can be repeated as often as necessary. Immediately effective and safe for all ages. product will not interact with drugs P/N 13-07194 ..... $14.95

ACR FLOATING SURVIVAL BAG

Holds all the equipment needed to abandon ship in an emergency. Floats; buoyant closed cell foam construction. East-fit attachment for locator light (light not included). Internal pockets and elastic daisy chain organizer. Customize with survival equipment for your sailing/boating conditions. Record equipment inventory on external, waterproof card for quick reference. Durable, self-repairing zipper Shoulder strap functions as tether, leaving hands free in an emergency. P/N 13-07067..... $99.75

ACR SIGNAL MIRROR

Sighted signaling mirror with float and whistle. Designed to provide optimum sighting "spot" with holographic red dot viewing window. When target image, mirror & sun are in proper alignment, red dot on target ensures mirror reflection is on target. Telescope quality second surface reflective mirror is bright, provides focused image. Buoyant float for easy recovery if dropped overboard. Patented whistle (meets USCG) for audible alerting in low visibility conditions. Signal Mirror has lanyard for securing to person or liferaft. Size: 4.25x2.75x0.19 in. (10.8x7x0.5cm); Wt: 1.8 oz (51 g) P/N 13-03177 .....$11.95

SURVIVAL BLANKET

Often called the "space blanket." NASA thought of everything when they came up with this metal-coated nylon design. Waterproof and windproof, it retains 80% of body heat, it's colored to be seen from more than 4 miles away (although it measures just 4' x 7'), it's radar-reflective, and it folds down into a water-proof pouch 8.5"x9"; wt:10 oz. P/N 9145..... $33.85

SPACE EMERGENCY BLANKETS

This "two ounces of protection that fits in the palm of your hand" is about the size of a deck of cards when folded, but opens into a 56" (142cm) by 84" (214cm) tough and durable thermal reflective blanket. The Space Emergency Blanket has helped save countless lives, by providing needed personal protection from the harsh elements of Mother Nature. Available in orange on one side and silver on the other, a combination providing greater air-to-ground visibility, particularly against a snow or water background. P/N 13-06933 .....$3.95

TRAFFIC WAND

This lighted traffic directing wand comes with 6 colored lense discs that change the color glow of the white tapered top. Features: GSA compliant for US military use • Made in the USA of sturdy gray plastic • O-ring sealed for waterproof operation in rainy weather • Lenses (2-red, 1 ea. amber, white, blue, & green), as well as a spare light bulb are conveniently stored in the end cap. P/N 14-00902.....$18.50

LIGHTED LINEMAN WANDS

• Used by US Air force • Up to 400 hours operation • 17" long • Waterproof •Uses 2 D batteries (not incl.) • Fluorescent coated diffuser enhances red light output.
P/N 13-08959.....$29.75

LED AIRCRAFT PARKING WAND 22" RED LED

Mini LED Signal Lite with 6 LED's. 500+ Hours Runtime with 2 D Batteries. Great for Cars or for Security Uses. LED Bulb Signal/Traffic Lite. 6 Sets of LED Lites. Ultra High Visability. 21 Inches length. Tough ABS construction. 400 Hour battery life.
22" Red ..... P/N 11-10803 ..... $15.50
22" White ..... P/N 11-10804 ..... $29.50

STROBEWAND LIGHT

The Strobewand is a hand held, battery powered warning light wand. Designed as a durable, quality-built, essential for traffic control.
The Strobewand quickly attracts attention on the ramp. This Strobewand can be operated in the steady state or, with a flip of the switch, produce up to 120 flashes per minute. And readily tucked in a trunk or hung from the belt..... P/N 14-00833 ..... $39.50

PS

CANADIAN-ALASKAN SURVIVOR PAK

Originally designed for pilots flying within Alaskan and Canadian airspace, the CA-20 offers protection against harsh climates in the event of an emergency. It contains over 150 medical and general supply items to help sustain two people for up to 14 days. The space saving design combined with its ample supply of food and water makes the CA-20 a popular choice on board fixed wing, rotor craft, and corporate jets. It's also used extensively by Search & Rescue units! P/N 13-03596.....**$462.00**

EMERGENCY SURVIVAL KIT

Specially designed by a focus group, the ESK-02 makes it easy to be prepared for life's little surprises. Each kit contains over 40 medical and general supply items including a guidebook that offers survival tips and basic information. Designed to support one person for up to three days, the ESK-02 carries a five-year shelf life on food and water. Its affordable price makes it a great choice as a premium/ incentive item, corporate gift, or employee award.

P/N 13-03606.....**$34.50**

THE TRAVELER KIT

The Traveler Kit - Personal Care Package is appreciated by everyone from busy executives to sports enthusiasts. It's the perfect addition to any car as the "other spare" to have on hand for life's unexpected moments. Designed to support one person for up to three days, it contains over 50 support items in a custom nylon carrying bag with reinforced straps. "The Traveler" is ready to go anywhere P/N 13-03607.....**$65.75**

2-PERSON EMERGENCY SURVIVAL KIT

This deluxe 2 PERSON EMERGENCY SURVIVOR KIT could mean the difference between disaster and survival in an emergency situation. It contains a complete 3-day supply of food, water, medical & other emergency supplies for 2 people.

Over 60 Emergency Items! • Emergency Drinking Water Metallic Sachets • 2400 Calorie Emergency Food Rations • Instant Cold Pack • Medical Kit • Disposable Flashlights • Thermal Blankets • AM/FM Portable Radio w/ Batteries • The Wallace Emergency Guidebook P/N 13-03608.....**$74.75**

EMERGENCY BLANKET

This Emergency Blanket (52" x 82.5", 1.5 oz.) provides personal protection from rain, wind, heat, and cold. It's manufactured from extremely lightweight, flexible, space-age material, and retains up to 90% body heat in cold weather. It even deflects heat in hot climates and can be used to offset hypothermic reactions. The Emergency Blanket is waterproof, reusable, and portable. It's perfect for camping trips and sporting events in addition to emergencies. Keep several on hand for the unexpected!

P/N 13-03604.....**$3.35**

RESPERATE

RESPeRATE, the first 'non-drug' product clinically proven to lower blood pressure RESPeRATE offers an additional non-drug option to further lower patients' blood pressure with no side effects. Consisting of a computerized control unit, a breathing sensor and a set of earbuds, RESPeRATE interactively guides the user to breathe at a rate of less than 10 breaths per minute with prolonged exhalation. Sympathetic neural activity is reduced, with a resultant dilation of the muscles surrounding small blood vessels, allowing blood to flow more freely and blood pressure to be reduced.

P/N 13-131116..... **$299.00**

SNOW BROOM

The SNO BRuM offers pilots a way to quickly sweep snow off aircraft wings and away from the user. Great for high wing aircraft. The durable molded polyethylene foam head has been lab-tested for non-abrasiveness, freeze resistance, center load stress and durability to achieve the highest ratings in all tests. The oversized head (6" x 17") is the largest snow remover available. The high-impact plastic face plate is recessed into the foam to prevent contact with the aircraft. The aluminum telescoping handle has special cold resistant nylon threads and extends from 27" to 46". Also great for cars, trucks, SUV's, and awnings. P/N13-04055..... **$19.65**

FIRST AID 'N TRAVEL KIT

Finally—a compact, complete travel unit for the person on the go! This kit fits perfectly in a purse, briefcase, or glove compartment, and is ready when you need it in first aid situations. This kit is very special because it's the only one of its kind to include a 4 oz. sterile water packet with a five-year shelf life. Ask us about using this kit for fundraisers or corporate promotions! We can customize the kit to include your company's logo.

P/N 13-03605.....**$11.50**

COCOON SLEEPING BAG

The All Weather Pocket Size Sleeping Bag The Cocoon Sleeping Bag (84" x 36") provides personal protection from rain, wind, heat, and cold. It's manufactured from extremely lightweight, flexible, space-age material, and retains up to 90% body heat in cold weather. It even deflects heat in hot climates and can be used to offset hypothermic reactions. The Cocoon is waterproof,reusable, and portable. Keep several on hand for the unexpected!. P/N 13-03603.....**$3.85**

EMERGENCY FOOD RATIONS

Individualized portions eliminate the messy breaking-up that occurs with other bars Allows for on-land emergency consumption in a high-stress active situation. Contains no cholesterol or tropical oils. Enriched with vitamins and minerals exceeding the RDA requirements. Pleasant lemon flavor which appeals to everyone. 5 year Shelf Life. Non-Thirst Provoking. Withstands Temperatures of -40° F to 300°F (-40°C to 149°C)

13-03602: Ready to Eat- Each package contains 3 pre-measured 400 calorie meals.
13-03601: Ready to Eat: Each package contains 6 pre-measured 400 calorie meals.
13-03599: Ready to Eat: Each package contains 9 pre-measured 400 calorie meals.

Mainstay™ 3600 ..... P/N 13-03599 .....**$7.50**
Mainstay™ 2400..... P/N 13-03601.....**$5.95**
Mainstay™ 1200..... P/N 13-03602.....**$3.95**

EMERGENCY WATER PACKETS

Mainstay™ Water Packets - All water is not created equal! Here at Survivor Industries we have spent years perfecting our Mainstay™ Water Packets. The final result is a portable product with a 5-year shelf life. Other Key Benefits: • U.S. Coast Guard approved • No Oxygen Transfer (In other words, no chance of bacterial contamination) • Pre-Measured Packets make the water easy to dispense, and potential for loss is minimized. If a packet is destroyed, only 4.224 ounces (125 ml) would be lost. • Easy to Transport - just 18 lbs. (8.17 kg) per case of 60 packets. • No special storage required - it can withstand temperatures from (-40°F to 210°F) (-40°C to 99°C) •Very Low Cost. • No Cups Needed!

P/N 13-03598.....**$16.75**

THE WALLACE GUIDEBOOK

For Emergency Care & Survival - When you're faced with a disaster, you can often face physical and psychological strain. It's often hard to remember what to do in an emergency situation, and this is exactly why we've written the Wallace Guidebook. This book is specifically designed to present the basics of survival in an extremely easy-to-understand manner. This book discusses the following topics, plus many more: Choking, Heart Attack, CPR, Shock, Burns, Emotional Trauma, Bleeding, Fainting, Wounds, Broken Bones, Fractured Bones, Back Injury, Childbirth, Auto Breakdown, Temperature Extremes, and the 1st and 2nd Rules of Survival. It's not fun to be in one of these situations, but having a book like this nearby gives you a better chance of a happy ending. P/N 13-03597.....**$5.35**

PRO PILOT LANYARD KIT

Black heavy duty detachable nylon lanyard is 20 inches in length from the top of the lanyard to the bottom of the J-hook. The detachable portion is short in length (approximately 2 ½ inches) Flashlight: The black and silver Garrity Lithium L.E.D. is the brightest, whitest single light available. It features an L.E.D. light. It provides years of intermittent light or more than 23 hours of continuous light. The Diode lasts 100,000 hours. The flashlight attaches to the J-hook. Badge clip/ universal grabber: The alligator-type badge clip has a black strap (snaps open and closed) permanently fixed to it that swivels. Connected to the strap withstanding up to 5 pounds. Earplugs: The Howard Leights NRR (Noise Reduction Rate) is 33 decibels. Highest rated disposable ear plugs on the market

P/N 13-06336.....**$19.95**

PS

SURVIVAL KITS

Crashkit Personal and Professional Flight Line Series aviation survival kits are quickly becoming an industry leader in top quality aviation survival kits. Numerous kits are available to suit you piloting and survival needs.

CRASHKIT ALPHA SURVIVAL KIT

The "Alpha' personal aviation survival kit is designed for the pilot with general knowledge of survival techniques. This kit should only be purchased by experienced and skilled individuals. This kit includes 24 of the most essential items packed into the smallest kit practical. Weighing in at only 1.54lbs, the general kit is small enough to fit in any flight bag, purse, glove compartment, map pouch or cargo pocket.

Every item included in this kit has been thoroughly tested and approved to insure it performs flawlessly when needed (we've even sharpened the knife!) and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 6.37" x 4.75" x 2.12"(16.9 x 12.06 x 5.4 cm) Weight : 1.54 lbs Contents : 24 items covering food, fire, water, shelter, and first aid Case : Pelican 1020 case - yellow - tough, watertight, polycarbonate case Optional Acc's : Parachute deployment system; Warranty : Lifetime

P/N 13-04684.....$169.95

CRASHKIT BRAVO SURVIVAL KIT

The 'Bravo' Personal Aviation Kit is designed for you. The Bravo Crashkit is small and compact, and includes 76 of the most essential items needed to survive. Kit includes basic first aid, light, fire, signal, shelter and methods for providing clean water and food procurement.

The kit is slightly thicker than the Crashkit 'Alpha', but still small enough to be carried easily in small flight bags, jacket pocket, glove compartment, map pouch or cargo pants pocket. Crashkit 'Bravo' weighs in a 1.6 Kilos or 3.52lbs.

While water resistant, crushproof and relatively small, this kit still exceeds all Transport Canada requirements for aviation survival. And with every item tried and tested to ensure it will work flawlessly for you when you need it most, you can count on the tools you need, when you need them. P/N 13-04685.....$268.95

CRASHKIT CHARLIE SURVIVAL KIT

Including 71 of the most essential items, this kit is extensive in its coverage of necessary tools and supplies. Packaged in a Pelican 1120 case, 'Charlie' is still compact and lightweight enough for easy transport and storage. Every item in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, as well as to ensure the ease of use for each individual piece. This kit meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. This kit now contains Aquatabs Water Purification and The Spark-Lite Flint and Tinder Kit. Each package of Mainstay Food Rations contains pre-measured 400 calorie individualized portions,non-thirst provoking lemon flavor daily meals, and suitable from -40F to 300F and ready to eat. The tasty bars contain no cholesterol or tropical oils. Meets all guidelines set by the Department of Defense(SOLAS 74/83). Exceeds the RDA requirements. In an emergency situation, ration to one portion per day or less. Dimensions : 20.6 x 16.7 x 9 cm (8.12" x 6.56" x 3.56") Weight : 1.85 kg (4.07 lbs) P/N 13-04686.....$346.00

CRASHKIT 2-7 SURVIVAL KIT

As a pilot with a professional responsibility to others, we know you will want only the best survival options. The 'Crashkit 2:7' has been designed for use in a typical GA light aircraft and contains over 200 essential items needed to sustain two people for seven days. This Aviation kit contains multiple options for the provision of food, fire and water, including Aquatabs Water Purification Tablets and the Spark-Lite Flint and Tinder kit.The kit is packaged in a Pelican 1200 case and remains lightweight and compact for ease of storage. As with all Crashkits, all products have satisfied rigorous testing to ensure they surpass Transport Canada regulations for aviation. Crashkit 2:7 exceeds all Transport Canada and Federal Aviation Administration regulations for both survival and first aid, 1-6 person. Dimensions : 27 x 24.6 x 12.4 cm (10.62" x 9.68" x 4.87") Weight : 4.31 kg or 9.50 lbs

P/N 13-04690.....$529.95

CRASHKIT 4-7 SURVIVAL KIT

The Crashkit 4-7, designed for use in typical GA light aircraft and commercial aircraft, contains the materials necessary to sustain four people for seven days in the event of a crash. The variation of items within the kit allows for multiple options for food, fire, water and shelter; for example, in addition to the Mainstay packaged food, a fishing kit and snare are also included. This kit contains 232 of the most essential items needed in a survival situation, packaged within an indestructible Pelican 1400 case.

Every item included in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions :13.37" x 11.62" x 6.00 " (34 x 29.5 x 15.2 cm) Weight : 17.55lbs Contents : 232 items covering food, fire, water, shelter, and first aid Case : Pelican 1400 case - tough, watertight, polycarbonate case Kit Coverage : 4 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; Warranty : Lifetime.

P/N 13-04691.....$842.00

CRASHKIT 6-7 SURVIVAL KIT

Intended for commercial aircrafts, our Crashkit 6-7 has enough materials to sustain six people for seven days in the event of a crash. Various means of food, fire, water and shelter allow for multiple options; for example, this kit includes not only Mainstay water, but the means for purification, as well as hot chocolate or tea. Within this indestructible, crushproof and waterproof Pelican 1450 case, 261 of the most essential items needed in a survival situation are packaged and ready for easy use. Every item included in this kit has been thoroughly tested and approved to ensure it performs flawlessly when needed, and meets or exceeds Transport Canada's Canadian Aviation Regulations to facilitate survival and rescue. Dimensions : 16" x 13" x 6.88 " (40.6 x 33 x 17.5 cm) Weight : 22.80lbs Contents : 261 items covering food, fire, water, shelter, and first aid Case : Pelican 1450 case - tough, watertight, polycarbonate case Kit Coverage : 6 people for 7 days (or longer dependent on situation) Optional Acc's : Parachute deployment system; Warranty : Lifetime.

P/N 13-04692.....$1,195.00

PS

MILITARY PILOT SURVIVAL KITS

SURVIVAL TOOL KIT - Total weight is 3 lbs. Custom designed, adjustable carrier pouch holds equipment. Can be worn around waist, used as tourniquet or with wooden dowels as splint. Dowels help with fire-starting. Blunt-tipped Meyerco Rescue One knife prevents injury, cuts seat belts and harnesses. Handle includes carbide glass breaker. Two emergency blankets. Emergency signaling mirror. Victorinox SwissTool includes: pliers, screwdrivers, wire cutter, cap lifter, blades, metal file and saw, wood saw, reamer and punch, chisel/scraper, crate opener, wire bender, stripper and scraper, can opener, ruler, electrical crimper. Two-sided screw bit holder with six bits and belt holder. Whistle. MINI MAG-LIGHT® flashlight. Knipex adjustable plier wrench. Magnesium fire-starting tool from Doan Machinery and Equipment.

PN 13-05676 ..... $299.95

MILITARY PILOT SURVIVAL KIT - Designed by Oregon Aero for the U.S. Navy. The durable carrier pouch is hand sewn by Oregon Aero with pockets for each item. Knife, fire starter and flashlight lanyards attached to carrier. Special zipper permits access to folding knife without opening the carrier. 6.5" high, 5.5" wide, 2" thick. Kit includes: • Gerber® Multi-Tool created especially for this kit by Gerber and Oregon Aero • Gerber® Harsey Air Ranger II Folding Knife • Nexus™ 26DNL Compass • LED Task Light™ Flashlight • Sunscreen Packets • Vacuum sealed Balaclava • Strike Force™ Fire Starting System. Custom designed Multi-Tool includes pliers, wire cutter, file, awl, serrated sheep's foot blade, knife/fish hook sharpener, assorted screwdrivers.

PN 13-05675 ..... $462.95

REVERE GLOW PARAHATCHET SURVIVAL CUTTING TOOL

Paracord handle unwraps to provide 8.2ft. (25m) of heavy duty cord for emergency use. Lanyard can be removed for additional 1.6 ft. (0.5m) of cord. 5mm black oxide-finished stainless steel blade. Indudes nylon sheath with belt loop. Multi-sized hex wrenches. Quick-action rope cutter on back of blade. Size: 10"x4"x0.5". Weight: 11 oz.

P/N 13-15539..... $23.75

REVERE PARAHATCHET SURVIVAL CUTTING TOOL

Paracord handle unwraps to provide 8.2ft. (25m) of heavy duty cord for emergency use. Lanyard can be removed for additional 1.6 ft. (0.5m) of cord. 5mm black oxide-finished stainless steel blade. Indudes nylon sheath with belt loop. Multi-sized hex wrenches. Quick-action rope cutter on back of blade. Built-in wrist lanyard included. Size: 10" x 4" x 0.5". Weight: 11 oz.

P/N 13-15540..... $23.75

REVERE PARAKNIFE 4.0 SURVIVAL KIT

Kit contents: ParaKnifeTM 4.0, PicoTM 1.0 LED Light, Liquid-filled Button Compass, Micro SparkWheel FireStarter, Light-MeTM Tinder, JetScreamTM Micro Signal Whistle, and StarFlash®Micro Signal Mirror. Size HxWxD: 8.7"xl.34x0.2" (220 x 34 x 4mm). Weight: 8.8 oz. (249g).

P/N 13-15541..... $39.95

REVERE SABERCUT CHAIN SAW SURVIVAL CUTTING TOOL

Flexible 24" blade cuts in a wide variety of angles and with very little clearance. Sharpens with standard 1/8" saw blade sharpener. "Pro" version includes carry case with hook-and-loop closure. "Lite" version comes without the carry case. Can be extended by simply adding extra rope to each handle. Lasts indefinitely with minimal routine maintenance. Self-cleaning saw teeth. Weight: 4.2 ounces (119g) (saw and case).

P/N 13-15542..... $23.75

REVERE URBAN RESCUE SURVIVAL TOOL

Features include: 3mm thick stainless steel blade with rust-resistant black oxide finish, Safety lock-back mechanism, Bead-blasted texture TPR handle for secure grip, Thumb stud for fast, one-handed operation, Seat belt cutter ,Large flathead screwdriver, File, Bottle opener, Glass breaker, and a sharp beveled knife blade. Size (Closed): 4"x1.25"x0.5". Size (Opened): 6.5x1.25"x0.5". Weight: 3.6 oz.

P/N 13-15543..... $14.85

REVERE SURVIVAL TOOL CARD

Thirteen tools protected by a hard plastic credit card-size case: Attachment loop, Mini Phillips screwdriver, Large flathead screwdriver, Magnifying gloss, 8-sided bolt head wrench, Position wrench (4 different sizes), Butterfly wrench, large flathead screwdriver, Bottle opener, File edge, Sharp knife edge, Can opener, 2 inch/5cm ruler, and Mini compass*. Size closed: 3.3"x2.2"x.5" Weighs 1.6 oz. *For optimum compass performance, separate compass portion from main unit

P/N 13-15544.....$4.95

REVERE WETFIRE TINDER PACK OF FIVE

Works in all weather and at all altitudes. Safe, light-weight and easy to carry. Cube form, individually packaged to maintain freshness. Over 1,300 degree Fahrenheit flame. For use with any UST or other spark-ing device. 5-year shelf life. Approximate size per cube: 1"x.75"x5". Approx. weight per cube: 0.16 oz.

P/N 13-15545.....$3.75

REVERE WATER TIGHT CASES

This Watertight Case Keeps Valuables Secure and Dry. Holds keys, credit cards, and others mall essentials. Shatterproof polycarbonate case with o-ring seals for import and water-resistance. (NOTE: Not intended for submersion). Lanyard and biner included.

Dim.(in,.) HxWxD	Weight	Description	Part No.	Price
3.25"x12.13"x1.75"	1.2 oz. (34g)	Credit card size	13-15546	$2.95
4.75"x3.75"x1.5"	2.2 oz. (62g)	Holds keys, cedit cards and other small items	13-15547	$3.95
6.25"x14"x1.5"	2.6 oz. (74g)	Holds iPhone® or Samsung Galaxy® (or both together)	13-15548	$4.95

REVERE COMPASS COMBO

Liquid-filled compass, fahrenheit thermometer and whistle. Break-away lanyard included. Size: 2.75"x1.75"x.125" Weight: .6oz.

P/N 13-15549.....$2.50

REVERE DELUXE MAP COMPASS

Liquid-filled compass with swivel bezel. Extended clear base plate for improved map reading. Multiple measurements scales ror precise route planning. Adjustable marching line. Break-away lanyard included. Size: 4.25"x2.25"x.25". Weight:.8 oz.

P/N 13-15550.....$4.75

REVERE LENSATIC COMPASS

Liquid-filled compass keeps north arrow steady. Clear base plate with magnifier for easy map reading. Multiple measure-ment scales for precise route planning. Adjustable marching line. Neck lanyard. Size: 3"x2.3"x.25". • Weight: .8 oz.

P/N 13-15551.....$4.75

SEE-ME SELECT LED RESCUE LIGHT

Coast Guard approved LED personal locator light strobes 60 times per minute and is vis-ible up to 2.7 miles. Ideal for paddlers and recreational boaters. Batteries: 2xAA Alkaline Or Lithium (Not Included). Item Dimensions: 4.75"x2"xl" (120x50x25mm) Weight: 3.4 oz. (96g)(with batteries). Warranty: Lifetime Limited.

P/N 13-15552..... $79.95

SEE-ME DUO LIGHT

Personal Locator Light with a flashlight on one end and a strobe on the other. Steady-on mode: Provides 37 lumens of light. Runs 14 hours continuously on. Strobe mode: Provides 45 lumens of light. Runs 24 hours continuously flashing. Strobe role = 60 flashes per minute (1Hz). Lifetime LED is unbreakable and never needs to be replaced. Easy twist on/off. Impact and water-resistant IPX8. Wrist lanyard and hook/loop attachment strap included.

P/N 13-15553..... $26.75

REVERE ENSPIRE LED HEADLAMP

This Revere Enspire LED headlamp has up to 230 Lumens. Runs 160 hours continuously on "Low". Runs 9 hours continuously on "High". Lifetime LED is unbreakable end never needs to be replaced. Rubberized housing enhances impact-resistance. Water-resistant IPX4. Focus control adjustment allows for broad or directed beam. Head ratchets to direct light as needed. Battery pack has independently operated red steady-on or red flashing light. Rear battery pack keeps weight comfortably bal-anced.

P/N 13-15554..... $29.95

BRILA MAGNETIC LED LATERN

Bright dean 360° light distribution up to 27 Lumens. Runs 14 hours continuously on "Low". Runs 5 hours continuously on "High". Red LED for alert signal & emergency S.O.S. signal (over 48 hrs battery runtime). Lifetime LED is unbreakable end never needs to be replered. Molded-in rubber lens protector for high impact-resistance. Water-resistant IPX6. Strong magnet on base for hands-free placement. Built in operable carabiner on bottom for easy hands-free use.

P/N 13-15555..... $12.75

PS

SURVIVAL EQUIPMENT

AERO COMPACT SURVIVAL KITS

Revere provides different types of storage containers to hold safety and survival equipment such as pyrotechnics. Designed to keep survival equipment dry and in one location for quick access in an emergency. Aero Compact Standard Survival Kit Contents: 1- Food Ration (1,000 kCal/Package) 8- Drinking Water (4.23 oz./package) 1- Canopy Assembly 1- Canopy Arch Assembly 1- Flashlight, 2xAA size 2- Batteries, size AA 1- First Aid Kit 1- Whistle and Lanyard Assembly 1- Signal Mirror 1- Signal Flare Kit 1- Distress Signal Flag 1- Sea Dye Marker 1- Repair Kit 1- Survival Kit Valise Assembly.

Standard Kit ..... P/N 11-09406 ..... $400.95
Standard Kit Plus ..... P/N 11-09407 ..... $482.95
Deluxe Kit ..... P/N 11-09408 ..... $1,013.00

SEE WWW.AIRCRAFTSPRUCE.COM FOR A LISTING OF THE CONTENTS OF EACH KIT.

REVERE SEE-ME LIGHT

Revere's See-Me Water-Activated Emergency Locator Lights feature long-lasting LED technology and a faceted octagonal design that is easy to use in wet conditions. Shatterproof and fungus-resistant globe and body make the See-Me light and strobe very tough and durable. Brightness and run time are microprocessor controlled to maximize visibility.

P/N 10-04579 ..... $19.65

REVERE SEE-ME STROBE

Revere's See-Me Water-Activated Emergency Locator Lights feature long-lasting LED technology and a faceted octagonal design that is easy to use in wet conditions. Shatterproof and fungus-resistant globe and body make the See-Me light and strobe very tough and durable. Brightness and run time are microprocessor controlled to maximize visibility.

P/N 10-04580 ..... $24.50

TINDER HOT BOX SOLAR FIRE STARTER SURVIVAL KIT

The Tinder HOT Box Solar Fire Starter™ is a tinder storage box that can start a fire using solar energy, and the inside top cover is also a signal mirror! The Tinder HOT Box Solar Fire Starter™ is used to store fire starting tinder in the air/water tight tinder box portion of the unit that is sealed from the elements using an o-ring seal. This keeps the damp air/water out so your tinder always stays dry! The Tinder HOT Box Solar Fire Starter™ is also a solar powered fire starter. It is designed to function in any environment that will support life; the Tinder HOT Box Solar Fire Starter™ will literally function for as long as our Sun will shine and there is tinder to be found! As a matter of fact our Tinder Hot Box Solar Fire Starter will even function on other planets. 2.625 inches in diameter. .725 inches thick. weighs only 4 oz. can easily fit in your pocket.

P/N 13-13091 ..... $39.95

RELIEFBAND VOYAGER FOR MOTION SICKNESS

FDA-Cleared. Clinically Tested for Relief of Emesis in Major Hospitals. No Drug-Like Side Effects: (sedation, dry mouth, constipation). Push Button Control: On/Off and Change of Settings. 5 Power Settings for User Control Level of Stimulation. Simple to Use/Works in minutes. Splash-Resistant/Shock Resistant.

P/N 13-07535 ..... $129.99

AQUAMIRA FRONTIER EMERGENCY WATER FILTRATION SYSTEM

Emergency water filtration system for hiking, camping & emergency preparedness. Effective on protozoan cysts (Giardia & Cryptosporidium). Economical-filters up to 20 gallons. Ultra light & compact (only weighs 1 oz & is less than 5" long). Perfect for emergency kits, foreign travel & outdoor activities. Essential part of your 72 hour emergency kit. Use when drinking from a bottle, cup or directly from a water source. EPA EST.NO. 071766-UT-001.

P/N 14-02699 ..... $10.99

PERSONAL SIGNALING REFLECTOR

The "Automatic Personal Signaling Reflector" works continuously and automatically 24-7, day and night. You can work on your shelter, gather food/water or rest if injured. Rescuers will not walk by you if you're asleep or if you are unable to respond. The highly reflective silver-coated plastic works with Sunligh, Search Lights and Flashlights. It's always working .

P/N 13-08662 ..... $13.95

FIND ME LIGHT STICK

The Find-Me Light Stick with its integrated hook and lanyard hole attaches easily to tents, boats--anywhere you need hours of soft, glowing light. Dimensions: 6" x .75" dia. Weight: .8 oz. (each.
2 Pack (1-Green / 1-Yellow).

P/N 11-11390 ..... $2.75

AURORA FIRE STARTER

Made in the U.S.A. Self contained fire starter. Made of knurled anodized aluminum. Includes a cylinder with built in stainless steel blade at the outside base which is struck by the 1/4" thick ferro-magnesium rod, creating a spark. The cylinder and rod screw together and meet at an o-ring creating a waterproof seal to protect the rod from corrosion.

P/N 14-02701 ..... $25.99

G.I. AVIATION SURVIVAL FIRE STARTER

Magnesium shaving edge and sparking insert. Government issue.

P/N 14-02700 ..... $10.99

GOGIRL SINGLE TUBE

Includes re-usable tube, baggie and tissue. It's a kit in a tube ready to go! Made from Medical Grade Silicone.
Lavender with Pink Tube
P/N 13-08566 ..... $9.99
Khaki with camo Tube
P/N 13-08567 ..... $9.99

HYLAND'S MOTION SICKNESS TABLETS

Hyland's Motion Sickness is a traditional homeopathic formula for relieving symptoms of nausea and dizziness associated with or aggravated by motion. This product is also useful for relief of car sickness and sea sickness. Working without contraindications or side effects, it stimulates your body's natural healing response to relieve symptoms. Motion Sickness is safe for adults and children, and can be used in conjunction with other medications.

P/N 13-08646 ..... $7.75

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

EAR PLUGS - PORTABLE RESTROOMS

PILOT RELIEF TUBES

HORN - Black molded plastic horn fits into horizontal or vertical brackets. Measures 2-3/8" diameter and weighs 1.3 oz .
P/N 13-04168 .....**$15.50**

HORIZONTAL BRACKET - Black molded plastic bracket for underseat installation.
P/N 13-04169 .....**$23.55**

VERTICAL BRACKET - Black molded plastic bracket for vertical installation.
P/N 13-04170 .....**$13.50**

VENTURI - Black molded plastic venturi mounts on fuselage bottom and produces required suction to horn and outlet tubes for fluid ejection.
P/N 13-04171 .....**$24.70**

HORN AND VALVE ASSEMBLY - Dimensions: Length: 8-31/64"; Top opening: 2-21/64"; Bottom opening: 3/16"; Weight: 4 ounces
P/N 13-04167 .....**$83.85**

TEE AN8019-1 - The material is RTP 152 black. 2-1/32" wide and 1" length.
P/N 13-04172 .....**$7.90**

ULTRAFIT™ UNCORDED EARPLUGS 340-4001 IN CARRYING CASE

• Patented, premolded, triple-flange design inserts easily. • No rolling or sizing needed to get a comfortable, protective fit. • Hypoallergenic polymer is washable and reusable. • Carrying case keeps plugs clean and accessible for re-use. • NRR 25dB. • ANSI S3.19-1974; CSA Z94.2; CSA Class AL.
P/N 13-02194 ..... **$1.45**

EZ FIT EAR PLUGS WITH CORD

The E-Z Fit line of EAR plugs was designed specifically for smaller ear canals, providing comfort and a secure fit. The self-adjusting foam and bell shape allow for easy insertion and help to keep the earplug from shifting or dislodging. P/N 14-00051 .....**$0.85**

CLASSIC™ UNCORDED EARPLUGS 312-1201 IN A POLY BAG

• Slow-recovery foam helps ensure comfort and minimize pressure. • Bright yellow color provides a quick visual compliance check. • Dermatologically safe foam is non-irritating, nonflammable, and moisture-resistant. • NRR 29dB. • ANSI S3.19-1974; CSA Class AL P/N 9134 ..... **$0.36/pair**

PRESSURE REGULATING EAR PLUGS FOR CHILDREN

EarPlanes are a patented pressure-regulating earplug inserted in the ear to help reduce discomfort often associated with air travel. They were developed by Cirrus Healthcare Products LLC in conjunction with the House Ear Institute in Los Angeles, and have been tested by US Navy aviators at the Miramar Naval Air Station in San Diego.
P/N 14-02837.....**$7.95**

PUMA METHOD FOR PREVENTION OF MOTION SICKNESS

A series of simple conditioning exercises, taught on VHS or interactive DVD, that effectively prevents the nausea, vomiting, lightheadedness and other unpleasant symptoms experienced by over 50% of the population while traveling. Sam C. Puma MD, president of Puma Applied Science and former Air Force Flight Surgeon at NASA, developed these revolutionary new exercises to totally eliminate carsickness, seasickness, airsickness, and even spacesickness. Takes only about 15 minutes a day to do.
DVD ..... P/N 13-03675.....**$42.50**
VHS..... P/N 13-03676.....**$42.95**

LITTLE JOHN

Positively the least expensive accessory you can buy to extend your range. One authenticated case reports a Piper Malibu's range extended by 500 miles. Durable plastic, won't crack under any normal handling and temperature conditions. A tight screw-on cap makes it spill proof. Standard issue in hospitals for years. P/N 9741 ..... **$7.95**

LADY J ADAPTER

The anatomically designed funnel snaps in and out of the little John. It can be used sitting or even standing. Clean white plastic. P/N 9745 ..... **$6.95**

G FUNNEL ADAPTER

The G-Funnel is a portable urinal adapter which simply screws on to any plastic pop or water bottle that will be used as a container for those situations where a washroom facility is not available. Can be attached and used together with any sized plastic pop or water bottle that most people have on hand. A very useful relief device for those emergency situations.
P/N 13-01974 ..... **$7.50**

RESTOP DISPOSABLE URINAL

The anatomically designed Restop is the disposable urine bag that combines a unique blend of polymers, enzymes, & deodorizer to turn urine into an odorless gel on contact. The funnel design prevents accidental spills. Restop is sanitary, non-toxic, spillproof & odorless, safe and convenient, trash container safe, and small enough to fit in pocket. Easy to use by men & women. 2 pack. P/N 13-00794 ..... **$4.50**

TRAVEL JOHN

Absorbent pouch turns urine into gel instantly while destroying bacteria and odor. Specially designed collar works for men women and children; spill guard prevents back guard during use. Convenient, sanitary and compact, TravelJohn is easy to use while sitting or standing. Will not leak or spill, even if punctured. Holds 28 fl. oz. Includes antiseptic hand wipe.
3-pack .....P/N 13-00894 ..... **$5.95**

CONVENIENCE BAG

Disposable urine & vomit bag.• Wide mouth.• No spill, cleanup, or odors• One-hand use
P/N13-02821..... **$1.95**

MOTION EAZE

Whether you want to prevent occasional motion sickness or relieve its symptoms, after the fact, Motion Eaze does the job. No matter, if it's sea sickness, car sickness, air sickness or any activity where motion sickness poses a problem, Motion Eaze really works. Contains no drugs, artificial additives, or stimulants of any kind. Only the freshest, highest quality, natural oils are used in its production. Motion Eaze is an oil that is applied to, and absorbed through, the skin, just behind the ear. P/N 13-02732 .....**$15.95**

ACUPRESSURE WRIST BAND

Fast, effective motion sickness control without drugs, drowsiness, or other side effects. Can be used by adults or children. Exerts a carefully-controlled pressure on acupressure point of both wrists. Takes 2 to 5 minutes to become effective. Used successfully by physicians & the military. P/N 9411.....**$8.75/pr**

SIC-SAC™

Use these for air sickness emergencies. Moisture proof and tear resistant even under extreme temperature changes. 10 sacks, individually packaged, each with attached tie band. Pack of 10 ..... P/N 9296 .....**$4.95**
Pack of 100 ..... P/N 9296-100.....**$48.00**

OZIUM AIR SANITIZER / FRESHENER

Eliminates smoke and offensive malodors caused by airborne bacteria. OZIUM is a product that sanitizes the air you breathe. It is clinically proven to eliminate odors, unlike current products that just mask odors. OZIUM combats airborne contaminants and eliminates odors with glycol-ized action…dispensing micron sized particles that linger in the air, attach to airborne bacteria and malodors to drastically reduce air pollution, purify and sanitize the air. P/N 14-00061 ....**$9.50**

THE BIFFY BAG

Personal disposable toilet system is a complete toilet that fits in the palm of your hand. Allows for a natural position. It has everything you need for a sanitary, discrete and comfortable experience.
3pk ..... P/N 13-12354..... **$11.95**
10pk ..... P/N 13-12355..... **$32.85**

PS

COCKPIT COOLERS

CROSSWIND COOLER 12 VOLT

The Crosswind Portable Air Conditioning Cooler is based on a 38 quart polystyrene cooler box which is powered through the craft's cigarette lighter receptacle or other on-board 12volt receptacle. All pumps and blowers in the coolers are marine-grade proven hardware devices. Features: • Electrical connections are marine grade and sealed in waterproof epoxy • The supplied power cord is detachable from the unit and can be kept in the cooler box when not in use • 24 volt power can be converted to 12 volt easily with a portable convertor that attaches to the 24 volt outlet if necessary. P/N 13-11233.....$499.00

GO COOL PORTABLE AIR CONDITIONER

The patented, portable air conditioner is made for cooling small, enclosed spaces using ice water. Use your GO COOL to cool down your aircraft's cabin before boarding and enjoy an air conditioned cabin while waiting on a hot tarmac before take-off and after landing. Cooling your aircraft's cabin couldn't be easier. With the extra drainage tubing included, you never have to remove GO COOL from your aircraft. The battery pack (available Fall, 2009) can be removed and recharged as needed, or purchase two battery packs and change them out as needed. No other unit on the market can match the cooling power, durability, reliability, affordability or convenience of the patented GO COOL! Features: Uses ice and water. Adjustable thermostat & fan speed. Draws less than two amps. 17.3" W x 20" L x 24" H. 12V, 1.6 amp. Includes 6 feet of drainage tubing and two power cords - electrical & vehicle lighter. Holds 4 one gallon jugs, 9 two liter bottles, or 40 lbs. of bagged iced. Optional filters. Rechargeable battery pack and dust & allergy filters coming soon. P/N 13-07018.....$425.00

GO COOL 8 HOUR RECHARGEABLE BATTERY PACK - The 8-hour, rechargeable battery pack is perfect for the user who needs true portability. Using this battery pack with the GO COOL means you no longer have to be confined to an electrical outlet or vehicle lighter receptacle. The battery pack makes it ideal for outdoor use, those unexpected power outages, and more!

P/N 13-07449.....$164.95

THE ICEBOX PORTABLE AIR CONDITIONER

The IceBox is a portable air conditioning system, for your airplane cabin, car, or boat. For Pilots: No more flying in a scorching hot cabin! Turn ON the IceBox during preflight and cool your cabin down. Jump in and start your engine for a comfortable taxi and departure to a cooler altitude. Enjoy hours of IceBox cooling power and control your comfort with the Wireless Remote (Pump and Fan controls) TIP: During cruise flight, Turn OFF the water pump at altitude with the included 2x button Wireless Remote to sustain the longest A/C possible. In Cruise Flight Mode -- Keep the fan running to push cooler air through the cabin For General Use: Use the IceBox portable air conditioner in any environment, with or without available electrical power. Cool down the car or boat with the IceBox, and keep your engines off in the process.

Aviator Kit: • Pilot Cable • Aux Battery • Charging Cable • 10x Gel Packs (Save money by ordering with Aviator Kit)

Electrical: 12V or 24V. Max Power Consumption 4.5 Amps

Features: Removable Duct for Extended Reach cooling, Internal 'Cold Box' Design, 35 lbs Ice/Water capacity, Long 15' power plug.

Wireless unit includes: Wireless Remote (Fan/Pump), Long exhaust water hose, Insulation Foam lid

Dimensions: 12" W x 16" H x 22" L

Weight Empty: 10lbs

Warranty: 1 year Mfr parts & labor, 30day money back guarantee from manufacturer

Wireless, 12V, w/o Aviator Kit.....P/N 08-10703.....$399.00
Wired, 12V, w/o Aviator Kit.....P/N 08-13234.....$299.00
Wireless, 24V, w/o Aviator Kit.....P/N 08-13240.....$439.00
Wired, 24V, w/o Aviator Kit.....P/N 08-13235.....$339.00
Wireless, 12V, with Aviator Kit.....P/N 08-13244.....$584.00
Wired, 12V, with Aviator Kit.....P/N 08-13242.....$484.00
Wireless, 24V, with Aviator Kit.....P/N 08-13243.....$624.00
Wired, 24V, with Aviator Kit.....P/N 08-13241.....$524.00

Accessories

Auxiliary Battery.....P/N 08-10704.....$75.00
Custom Pilot's Cable.....P/N 08-10705.....$60.00
Gel Packs(Ice Substitute).....P/N 08-10706.....$5.00
Extension Drain Hose.....P/N 08-10707.....$5.00
Aux. Battery Charging Cable.....P/N 08-10708.....$5.00
24V to 12V adapter.....P/N 08-12125.....$40.00

KEWLFLOW PORTABLE COOLER

The ice cooler or backpack that holds the ice and water can be easily refilled for continuous cooling over extended periods. Includes 12V Adapter. 4 quarts. 6429C includes 6429 Vest and Cooler. 100% Nylon Carrying Case with spill proof inner cooler. Unit includes water reservoir, pump, and power source. Insulated tubing and manifolds enable maximal cooling. Easy to use quick connectors allow for convenient operation. Can operate with variable power sources (battery, 12V, 110AC). Cooling Duration: Up to 3 hours. Typical users include surgeons, motorcyclists, and others needing personal cooling relief.

P/N 13-15509.....$249.99

KEWLFLOW PORTABLE BACKPACK

KewlFlow™ products use a combination of ice water and pumps to push cold water through special tubes built into vests. This allows for a continuous flow of cool water around the upper body, keeping the user cool and comfortable in any condition. The backpack that holds the ice and water can be easily refilled for continuous cooling over extended periods. Includes battery pack. 4 liters. 100% Nylon Back Pack with integrated water reservoir, pump, and power source. Padded shoulder straps with variable sizing adjustments. Insulated tubing and manifolds enable maximal cooling. Easy to use quick connectors allow for convenient operation. Can operate with variable power sources (battery, 12V, 110AC). Cooling Duration: Up to 3 hours. Typical users include motorcyclists, welders, painters, and others requiring a portable cooling solution. P/N 13-15510.....$399.99

CIRCULATORY COOLING VEST WITH STATIC COOLER

Includes 12V Adapter. Includes Vest and Cooler. 100% Nylon Carrying Case with spill proof inner cooler. Unit includes water reservoir, pump, and power source. Insulated tubing and manifolds enable maximal cooling. Easy to use quick connectors allow for convenient operation. Can operate with variable power sources (battery, 12V, 110AC). Cooling Duration: Up to 3 hours. Color: Black, Size: 9 Quart Cooler. Typical users include surgeons, motorcyclists, and others needing personal cooling relief.

Size	Part No.	Price	Size	Part No.	Price
Small	13-15507	$449.99	X-Large	13-15507-XL	$449.99
Medium	13-15507-M	$449.99	XX-Large	13-15507-2XL	$449.99
Large	13-15507-L	$449.99			

CIRCULATORY COOLING VEST WITH PORTABLE BACKPACK

Includes Vest and Backpack. 100% Nylon Back Pack with integrated water reservoir, pump, and power source. Padded shoulder straps with variable sizing adjustments Insulated tubing and manifolds enable maximal cooling Easy to use quick connectors allow for convenient operation. Can operate with variable power sources (battery, 12V, 110AC). Cooling Duration: Up to 3 hours. Typical users include motorcyclists, welders, painters, and others requiring a portable cooling solution.

Size	Part No.	Price	Size	Part No.	Price
Small	13-15508	$599.99	X-Large	13-15508-XL	$599.99
Medium	13-15508-M	$599.99	XX-Large	13-15508-2XL	$599.99
Large	13-15508-L	$599.99			

VISIT WWW.AIRCRAFTSPRUCE.COM FOR MORE KEWLFLOW HEATING AND COOLING VESTS.

PS

CO DETECTORS

CO GUARDIAN CARBON MONOXIDE DETECTORS

MODEL AERO-152WD - Features: • Max power consumption = Less than 1W • Wt: approx. 2.5 oz • Works from 10V to 30V sys. • Product shielded to prevent RMI (Radio Magnetic Interference) with Aircraft systems • Audible alarm with varying pitch depending at 85DB • Front panel lighting (Green, Amber and Red) • CO Sensor tested to 13,500 ft • Built in temperature compensating circuit • Built in Humidity compensating circuit. P/N 13-01640 ..... $149.00

MODEL AERO 553 - Replaces the 2.25" clock and provides the latest CO protection that displays 30 to 999 ppm in the cockpit, as well as aircraft high and low voltage alarms, pressure density altitude readout for takeoff. Cabin altitude alerts to remind you to go on oxygen. CO level, cabin pressure and temperature to be displayed on the UPS AT CNX80. ..... P/N 13-02569 ..... $699.00
Aero 553 OAT Probe ..... P/N 13-06165 ..... $125.00

MODEL AERO-452 - Input Power-14 / 28 V DC. Power Usage-Less than 1 Watt, 10 Watts with heater ON. Temp Range - -20 deg C to 55 deg C. Inspection - Each Unit 100 % tested. Humidity - 5 % to 95 % RH (non-condensating). Circuit Breaker-2 Amp. Design-Meets TSO-C48A. Weight-3.5 Oz. Sensor-Tested to 25,000 Ft. Calibration-100 and 500 PPM. Ouput-Dual Relay Output for, Panel Warning light / Annunciator. WARRANTY :The Aero 452 comes with a 1 year limited warranty. The warranty will be void if the unit has been opened or tampered with. P/N 13-07102..... $499.00

AERO 452-201-011 - Aero 452-201-011 is the first TSO certified remote-mountable Carbon Monoxide detector for use in General Aviation. This unit is a derivative of Aero 452 (Panel Mount). This unit comes standard with remote re-set switch and a remote light and can be installed behind a panel. This unit is pre-wired for connecting to an external annunciator warning lamp on your panel. Different light models can be purchased separately.
P/N 13-06918 ..... $499.00

AERO 454 - The AERO 454 can wirelessly transmit your GPS location up to three iOS devices; iPad, iPod, iPhone enabled tablet. No
more worries about lost GPS signal due to banking, heated windshields and passengers in the back of the
cabin asking "Are we there Yet?".
The 454 Model integrated with Garmin GPS receivers (430, 530, GNS650, GNS750, G900 and G1000) and
Bendix King KLN89, KLN90B, and KLN94. It will enable up to THREE OCCUPANTS to receive aircraft GPS data
via Bluetooth on their portable devices to monitor their location (Altitude, latitude and longitude) using apps like;
Flight Guide IEFB, Garmin (My-Cast), Foreflight, Wing X, Jepp View, and Google Maps. It works with Any APP that uses the Apple Standard GPS location Proto-call.
In addition, using the Flight Guide IEFB app, you will be able to receive your flight plan from your Garmin onto your iPad.
The Model 454 device is also designed to detect, measure, and provide alerts to the crew of reciprocating
engine type aircraft before the cockpit level of carbon monoxide (CO) reaches a critical level. In addition it also gives Cabin altitude warning at 10K, 12.5K and 14K. Input Power: 14/28 V DC. Weight: 4 Oz
P/N 11-10663 ..... $999.00

AERO-551 - Is fast responding to CO threat detector that is designed to standard 2 1/4 hole. This unit is our most sophisticated CO detector that has an extremly fast response when CO is present. The 551 unit shows continous CO Level from 10PPM to 999 PPM.
P/N 13-06919 ..... $599.00

DRAGER PAC SINGLE GAS MONITORS

Dräger Pac® 3500 - Workplace safety devices need to be fast and accurate. That is why the Dräger Pac 3500 is ideal for the personal monitoring of industrial carbon monoxide, hydrogen sulphide, along with being maintenance-free for up to two years. P/N 13-07016 ..... $226.95
Dräger Pac® 5500 - Long-lasting quality is key when it comes to workplace safety. The Dräger Pac 5500 has no lifetime limitation and is ideal for fast and accurate personal monitoring and detection of carbon monoxide, hydrogen sulphide or oxygen. P/N 13-07017 ..... $339.00

GASALERT CLIP EXTREME CARBON MONOXIDE MONITOR TWO YEAR BATTERY LIFE

Simply press the start/test button and the GasAlertClip Extreme is ready to use, providing continuous, reliable protection. This carbon monoxide detector requires no calibration, sensor replacement, battery replacement or battery charging. The simplicity of the GasAlertClip Extreme combined with minimal training requirements and negligible maintenance costs make the GasAlertClip Extreme one of the most cost-effective gas detection solutions for facility workers and onsite contractors. Standard Package Contents: Detector complete with specified sensor, stainless steel alligator clip and concussion-proof housing, Test cap and hose, Manual, Multi-language CD manual.
Gas Alert Clip Extreme II CO (2 Years) ..... P/N 13-09667 ..... $155.75
Gas Alert Clip Extreme III CO (3 Years) ..... P/N 13-09668 ..... $272.95
Gas Alert Clip Extreme CO 0-1000PPM ..... P/N 13-09669 ..... $299.00

LONG LIFE CARBON MONOXIDE DETECTOR

No longer do you have to replace that Carbon Monoxide Detector every 28 days, the new Quantum Eye Carbon monoxide detector offers a minimum 18 months of sensor life. P/N 09-35601 ..... $6.85

STANDARD CARBON MONOXIDE DETECTOR

Toxic, odorless, tasteless gas produced by incomplete combustion or gasoline, kerosene, natural gas, butane, fuel oil, wood, coal or anywhere fossil fuels are burned. Dangerous levels of CO come from internal combustion engines such as cars, airplanes, and lawn mowers or from any poorly vented or improperly adjusted fuel burning appliance. P/N 09-35600 ..... $3.85
Discount on 5 ..... $17.33

ASA CARBON MONOXIDE DETECTOR

Carbon Monoxide (CO) is a toxic, odorless, and tasteless gas produced by the incomplete combustion of gasoline, kerosene, natural gas, butane, propane, fuel oil, wood, coal, and other fossil fuels. Dangerous levels of CO can be produced by internal combustion engines or from any poorly vented or improperly adjusted fuel-burning appliance. Exposure to CO may cause sickness, headaches, or even death. P/N 13-05755 ..... $4.50

DIGITAL CO2 DETECTOR

The extremely affordable DCO 1001 has a measuring range of 0-1000 ppm and comes complete with a soft case, a wrist strap, 3 "AAA" batteries and an instruction manual. Features: • Adjustable co warning level • LCD dual digital display • Bright backlight • self test • Low battery indication • °F/°C selectable • Auto power off • Auto zero • Co range: 0~999ppm • Resolution: 1ppm • Battery life is 250 hours when the backlight is off and 35 hours with the backlight on. P/N 12-01895 ..... $144.85

MODEL 300 POCKET CO

Pocket CO Model 300 is the world's smallest and most affordable carbon monoxide detector, alarm and dosimeter. About the size of a key fob weighs less than 1 oz. Range: 0 – 500ppm; first alarm at 50ppm, second at 125ppm, third at 400ppm. Also has an 8-hour TWA warning alarm at 25ppm. Self-checks upon start and carries a 2 year warranty. P/N 13-06639 ..... $124.95

ACCESSORIES

Replacement/Spare Battery ..... P/N 13-06640 ..... $4.50
Pocket CO Calibration Kit ..... P/N 13-07258 ..... $38.75

FLIGHT DATA SYSTEMS GD-40 CARBON MONOXIDE DETECTOR

Integrates with most EFIS Systems - Connect via RS232 or a Switched Input. Audio Voice Alerts. LED and Discrete Warning/Status Outputs - Two color LED included. Monitors Cabin Altitude - Aural Alerts to remind you to don your Oxygen Mask. Calibrated Using Precision Gas - Each unit is individually calibrated and tested before shipping. Built in Self Test Monitors Sensor Quality - Continuous self testing for reliability. Altitude and Temperature Compensated - Has an internal Altimeter and Thermometer. Remote Mounting Takes No Panel Space Dimensions: 4.7 X 3.1 X 1.0 inches. Weight:4.1 oz. ..... P/N 11-09843 ..... $295.00

PS

PROTECTIVE GEAR FOR PETS

MUTT MUFFS

- Over-the-Head Hearing Protector for animals.
- Specially Designed Wide Foam Filled Ear Seals for Maximum Comfort.
- Engineered specifically to properly meet the contour of a dog's head
- Comfortable and Lightweight
- Adjustable Straps for Optimum Fit.
- Inner sound-deadening foam is the same density found in pilot's high-end headsets
- Made entirely in the United States of America
- Patent Pending

Muff Size	Typical Dog Weight	Head Circum-ference	Maximum Inner Shell	
			Width	Height
X-Small	5-10 lbs	7-9"	1.5"	1.625"
Small	9-25 lbs	9-13"	1.75"	1.75"
Medium	20-50 lbs	13-18"	2.5"	2.5"
Large	50-95 lbs	18-23"	3.25"	3.25"
X-Large	95+ lbs	23+	4"	4"

SIZE CHART - The overall circumference measurement of your dog's noggin at the largest point is the best determination of size, because if you choose a size too large, the muffs won't seal well against his head, and you lose all the sound-reducing properties you were shooting for. Your dog's weight is also a good indicator of which size to choose.

Size	Weight	Part No.	Price
X-Small	1.5 oz	13-05536	$51.75
Small	1.7 oz	13-05537	$51.90
Med	3.0 oz	13-05538	$52.75

Size	Weight	Part No.	Price
Large	4.0 oz	13-05539	$52.75
XL	5.8 oz.	13-05540	$52.75

CUSTOM COLORS - Ever-classic "Mutt Muff® Black". But now, Mutt Muffs® are available in three additional colors! Red! Blue! and Pink!

P/N 13-05541 ..... $58.75

CO-PILOT - TRIANGLE BANDANA FOR DOGS

The proper uniform for the distinguished canine aviator. Sewn on all three sides. Finished Sizes: Large:21.5" x 21.5" x 29", Small: 14" x 14" x 20"

Large ..... P/N 13-05547 ..... $5.75
Small ..... P/N 13-05548 ..... $5.75

HYDRO-BOWL FOR DOGS

Next time your pooch is pantin' for a drink, pull out the convenient, collapsible Hydro Bowl. Waterproof and made of a high-tech, durable plastic canvas, the Hydro Bowl folds up and snaps closed into a compact triangle for storage. Attach it to a leash, backpack, bicycle, or a variety of other places for easy storage. Hold 5 cups

P/N 13-05546 ..... $8.65

DOG IS MY CO-PILOT - BUMPERSTICKER

"Dog Is My Co-Pilot" is the trademarked motto of Bark magazine - accept no substitute. As seen on dog-friendly cars from coast to coast!..... P/N 13-05545 ..... $2.85

BARK BAGS

If you take passengers, sooner or later, you're going to need one. 9-3/4" x 4-1/4" to hold alot of chunks. Sold in a package of 3... There could be sympathy heaves. P/N 13-05543 ..... $4.75

4 PAWS K-9 EAR MUFFS

4 Paws Aviation has come out with new hearing protection for your pet. Average of 15 dBHL greater sound reduction than what's on the market today. These Ear Muffs hearing protection is made of nylon, aircraft approved sound deadening foam, non-toxic "gel" cups, webbing, and a safety "break a way" clip.

Small and medium Ear Muffs are available now. Large coming soon! They can be used with the only oxygen hood delivery system for your pet also offered by 4 Paws Aviation.

Small- 5 to 25 pounds 7" and 13" head size..... P/N 13-08288..... $57.95
Medium- 20 to 85 pounds 9" and 19" head size ..... P/N 13-08289..... $61.95
Large - Over 85 Pounds & 19" head size ..... P/N 13-12807..... $65.95

4 PAWS K-9 OXYGEN HOODS

Fight the effects of Hypoxia on your four legged family members by using the only oxygen delivery hood for animals when flying at high altitudes. Keep your pets safe and healthy when flying high.

Hood comes with 7-foot long oxygen supply tubing with a common push on female end. Attaches to a stand-alone bottle or in place oxygen system.

Oxygen hoods are available in five sizes, measurements' include the collar (around the neck) and the length from the nap of the neck to the end of the nose, then add two more inches for clearance.

Size	Collar Size	Hood Depth	Part No.	Price
Small	7.5" To 9.5"	8.5"	13-08290	$123.95
Medium	9.5" To 13.25"	10"	13-08291	$123.95
Large	13.25" To 15.75"	12"	13-08292	$123.95
X-Large	15.75" To 20"	14"	13-08293	$123.95
XX-Large	20" To Over	17"	13-08294	$123.95

AEROX PET MASK

Now you can take your pet with you at altitude thanks to AEROX and their new line of Canine 02 Mask supplemental oxygen system certified to 25,000 feet. The Aerox® Canine 02 supplemental oxygen system is currently available in 5 sizes:

Small - (Poodles, Shelties, Yorkies, Cavalier, Bichon Frise)
Medium - (Beagles, Keeshounds, Jack Russels, Standard Poodle)
Large - (Cockers Spaniels, Springers, Beagles, Boston Terriers)
X-Large - (Huskies, Labradors, Retrievers, Dobermans)
Giant - (Great Danes, Newfies, St Bernards, 90-160 LBS)

The muzzle incorporates a medium concentration continuous flow oxygen mask and frontal mesh area for best ventilation and oxygen delivery to your pets mouth and nose.

Size	Part No.	Price
Small	13-07460	$102.75
Medium	13-07461	$105.75
Large	13-07462	$107.75
X-Large	13-07463	$108.95
Giant	13-07464	$105.75

PS

WINDMETERS - WEATHER STATIONS

WINDSCRIBE HANDHELD WIND METER

A precise, handheld wind meter (anemometer). Also measures maximum headwind, maximum tailwind, a five-second average wind, and a running average wind. Speeds can be displayed in both U.S. and metric units, and the unit also records temperature and wind chill. The WindScribe weighs 3.5 ounces and comes with a lanyard. A velcro strap and mounting bracket are included. P/N 13-04019 ..... $135.00

WIND WIZARD WIND SPEED INDICATOR

ECONOMY MODEL – ACCURATE & COMPACT

Conveniently calibrated in miles/hour, meters/ second and Beaufort. Expanded in the lower wind speed range of 0-20 MPH (0-8.9 meters/sec). Slips easily into a shirt or coat pocket. Safety wrist strap gives added security in stronger winds, and stores out of the way in the folding handle. Constructed of high impact plastic and corrosion resistant metals. It comes with leather-like carrying case. No Batteries needed.

P/N 13-18520 ..... $49.99

SKYWATCH GEOS 11 HANDHELD WEATHER STATION

Features: Electronic Compass: • analogical and digital Three Data Recording Modes: •manual recording by pressing two buttons •automatic recording at selected intervals, when unit is off or on •automatic recording at selected intervals, when unit is on only. Bright LED Light: • operates on separate battery. Replaceable Ball Impeller: • rotates to protect impeller blades. Exposed Sensors for instant reading

Kit includes: Geos Unit, USB Interface with software, Metallic Support, and Carrying Pouch..... P/N 13-04757..... $574.95
Unit Only ..... P/N 11-11297..... $459.95

SKYWATCH HANDHELD WIND METERS

Designed for consumer and professional use, the Xplorer does not include complicated and seldom-used features such as downloading and storing. Press one button, and instant readings are at your fingertips. Dimension: 3.5 x 1.5 x 0.75 in, 2 oz. (41 x 93 x 17 mm, 50 g) One button operation, EL Backlight Completely sealed; internal sensors, Weatherproof (can be submerged 6 feet), Replaceable Lithium battery (included and installed) , Stainless steel back, Auto-off after one minute (can be disabled to remain on), Included lanyard One year warranty.

Handheld Weather 1..... P/N 13-04760 ..... $54.95
Handheld Weather 4..... P/N 13-04762 ..... $154.95

WINDLINQ WIND METER

Most compact electronic anemometer available. Features: * Displays wind speed in MPH, Km/Hr, Knots, Met/Sec, and Ft/Sec * Displays Current Wind Speed * Displays Maximum Wind Speed * Features back light * Includes Replaceable Lithium Battery (CR2032) * Water Resistant to 3 feet (1 m) * Great gift item Specifications * Size:3.6"H x 1.6"W x 0.6"D, 1.8 oz * Lithium battery * 4 year warranty on battery * Measuring range: 0 to 99.99 * Resolution: 0.1 units * Case: Rugged polycarbonate, waterproof to 10 feet * Precision: ±4% from 16° F to 122°F (10° to 50°C) P/N SKWWIND..... $52.95

SM-19 SKYMATE PLUS WIND METER

* Current, maximum windspeed * Average windspeed over 5, 10, or 13 seconds * Current temp & windchill * Relative Humidity & Dewpoint * Choose any measurement unit * Reads in tenths * Replaceable 400 hour lithium battery * Data Hold to freeze most recent display * Replaceable plastic impeller won't corrode * Comes with lanyard * Threaded for tripod mounting * Unique pocket-knife design to protect unit when not in use * Auto shutoff 20 minutes after last key is pressed * Water resistant housing High visibility case Floats. ..... P/N 13-01960..... $103.99
Carring Case ..... P/N 13-02202..... $15.19

XPLORER 2 WINDMETER BY SKYWATCH

Dimension: 3.5 x 1.5 x 0.75 in, 2 oz. (41 x 93 x 17 mm, 50 g). One button operation. EL Backlight. Completely sealed; internal sensors. Weatherproof (can be submerged 6 feet). Replaceable Lithium battery (included and installed). Stainless steel back Auto-off after one minute (can be disabled to remain on). Included lanyard. One year warranty. Designed in Switzerland P/N 13-12440 ..... $65.95

XPLORER 3 WINDMETER BY SKYWATCH

Dimension: 3.5 x 1.5 x 0.75 in, 2 oz. (41 x 93 x 17 mm, 50 g). One button operation. EL Backlight. Completely sealed; internal sensors. Weatherproof (can be submerged 6 feet). Replaceable Lithium battery (included and installed). Stainless steel back. Auto-off after one minute (can be disabled to remain on). Included lanyard. One year warranty. Designed in Switzerland. P/N 13-12441 ..... $109.95

SPEEDTECH INSTRUMENTS

SKYMASTER WEATHERMETER SM-28 - Pocket-size weather station features complete wind speed functions and includes a severe weather audio alarm. The relative humidity, barometer, and altimeter functions can be recalibrated, if required. Skymaster is water resistant, floats, threaded for tripod mounting and comes with a lanyard. One year warranty. Features:• Windspeed• Relative Humidity & Dew Point • Altitude •Current barometric Pressure • 16-HR Pressure Graph • Severe Weather Audio Alarm • Temperature/Windchill/Heat Index. P/N 13-02957 ..... $151.99

SKYMATE WINDMETER - Convenient pocket-knife design, accuracy, features, and price make this the best value in handheld wind meters! It is water resistant, it floats, and it has a high visibility case. Average wind speed over 5, 10, or 13 seconds. Current temp & wind chill. Choose any measurement unit. Reads in tenths. Replaceable 400 hour lithium battery. Data lock feature. Replaceable plastic impeller won't corrode. Easy to read LCD. Threaded for tripod mounting. Unique pocket-knife design to protect unit when not in use. Water resistant to 3 ft. High visibility case. One year warranty. Features: • Windspeed • Temperature • Widchill • Water Resistant to 3 Feet. • Floats • Safety Yellow case

P/N 13-00086..... $75.19

WM-100 WINDMATE 100 - Current, Average (5,10,13 secs) Maximum wind speed all use a wind vane to ensure most accurate measurements. For long-range shooting, use the tripod fitting and add the optional wind tunnel accessory. All wind functions in user selected units * Reads in tenths * Backlight * Tripod fitting * Rugged water-resistant case * Comes with adjustable lanyard. Features: Current wind speed • Average wind speed(5, 10, 13 seconds) • Maximum wind speed Mph, Kt, Kp/h, BF, FPM, M/Sec. Wind vane assures you are on the wind's axis • Tripod fitting • Fits wind tunnel accessory • Rugged water-resistnat case meets U.S. military specifications • Auto shutoff • Comes with adjustable lanyard P/N 13-04292..... $57.59

WM-200 WINDMATE 200 - Offers the most popular features in a handheld device, wind speed and temperature, with wind chill calculation. Single button operation, easy measurements, and the display has a backlight; handy for lowlight conditions. Each unit is water resistant, and has a tripod fitting. Features: * Digital wind direction in degree & compass points * Cross and head/tail wind readings * Temperature * Windchill * Backlight Specifications: * Windspeed accuracy +/- 3% from .8-89Mph * Wind speed range to 135Mph * Digital compass/wind direction accuracy +/- 2° * Temp/Windchill accuracy +/- 1.8° F * Optional Units: Mph, km/h, kt, ft/min, m/s, BF (Beaufort) * F or C * Avg windspeed over 10 secs * Max windspeed 2 sec gust since power on * Auto shutdown * POWER: CR2032 replaceable Lithium battery (included) * Measures: 5.5" x 1.75" x .75" closed * Weighs 3.2oz with battery * 2-yr warranty

P/N 13-04293..... $103.99

WM-300 WINDMATE 300 - Wind speed and digital wind direction, relative humidity, dewpoint, wet bulb & Delta T make this a comprehensive tool for forestry, agriculture and emergency management professionals. Humidity sensor does NOT require adjustment; it is self-calibrating. This unit is equipped with a backlight. Accuweather.com® patented Comfort Index™ gives the effect of temp, relative humidity, wind speed, & sun intensity on the human body. Unit can be tripod mounted. Features: * Relative Humidity (self-calibrating sensor) * Dewpoint * Delta T * Accuweather.com patended * Jackknife case allows most accurate temp & RH readings * Wind speed range to 135Mph * Optional Units: Mph,km/h,ft/min,m/x,BF (Beaufort) * F or C * Avg wind speed over 10 secs * Max wind speed 2 sec gust since power on * Auto shutdown * POWER: CR2032 (400-Hr) replaceable Lithium battery (included) * Measures: 5.5" x 1.75" x .75" closed * Weighs 3.2 oz with battery * Comes with breakaway lanyard * 2-yr warranty. P/N 13-04294..... $198.00

WM-350 WINDMATE 350 - • Time • Date • Alarm • 48-HR history for all functions Digital Hr-By-Hr & Bar Graph • Current, Avg., Max wind speed in Mph, Kt, Kp/h, FPM, M/Sec, Beaufort • Digital wind direction in degrees & compass points • Cross and head/tail wind readings • Wind vane improves accuracy • Relative humidity • Wet Bulb (°F/°C) • Dewpoint (°F/°C) • Delta T • Barometric pressure (inHg/hPa) • Density Altitude (Ft/m) • Weather forecast • Audio storm alarm • Temperature (°F/°C) • Windchill • Altimeter to 29,000 Ft/9000m • AccuWeather.com® patented Comfort IndexTM • Backlight • Tripod fitting • Fits wind tunnel accessory • Case meets military specifications • Comes with adjustable lanyard.Replaceable Lithium battery (included) MEASURES: 5.5) x 1.75) x .75) closed 9) x 1.75) x .75) open WEIGHS: 3.2 ounces with battery. P/N 13-05763..... $199.99

SKYMATE ACCESSORIES

Adjustable nylon case (fits all models)..... P/N 13-02202 ..... $15.19
Wind tunnel (maximize wind meter accuracy) ..... P/N 13-02201 ..... $30.00
Speedtech Rail Mount(AP-15) ..... P/N 13-02204 ..... $12.50
Speedtech Back Stay Mount (AP-16) ..... P/N 13-02203 ..... $16.75
WM-350 Replacement Impeller ..... P/N 13-07259 ..... $36.00
SM-28 Replacement Impeller ..... P/N 13-07260 ..... $21.00

PS

WEATHER STATIONS – FLASHLIGHTS

WIRELESS VANTAGE PRO2 WEATHER STATION

Uses frequency hopping spread spectrum radio technology to transmit data wirelessly up to 1000′ (300 m). Console/receiver, integrated sensor suite, and mounting hardware. Integrated sensor suite includes rain collector, temperature and humidity sensors, anemometer, 40′ (12 m) anemometer cable, and solar panel. Sensor suite is solar powered. AC-power adapter included for console, or use with three C batteries (not included). Wireless range is up to 1000′ outdoors, line of sight. Typical range through walls 200′ to 400′ . Add wireless repeaters for distances up to 1.7 miles. Not available in EU (Europe).

Vantage Pro2 (U.S.) ..... P/N 13-05532 ..... $595.00
Vantage Pro2 Plus with UV & Solar Radiation ..... P/N 13-05586 ..... $789.00
Mounting Tripod ..... P/N 13-04569 ..... $66.85
Replacement Anemometer for Vantage Pro2 & Pro
P/N 13-13073 ..... $115.75

MAGLITE LED FLASHLIGHTS

MAG-LED™ Technology known for their obsession with precision engineering, craftsmanship and commitment to perfection, was not satisfied with the performance of a "regular" LED as a usable light source. They set their sights on producing a light source that would not only incorporate longer battery life, but would also have the kind of durability, reliability, and performance Maglite® flashlights are known for. With an emphasis on uncompromising performance, MAG-LED™ Technology is the result of that quest.

LED Mini Maglight 2-cell AA - Black ..... P/N 13-04722 ..... $19.95
LED Mini Maglight 2-cell AA, w/Holster - Grey Pewter
P/N 13-04917 ..... $19.75
LED Maglight 2 Cell D hang pack- Black ..... P/N 13-04724 ..... $18.95
LED Maglight 2 Cell D hang pack- Grey Pewter ..... P/N 13-04880 ..... $34.50
LED Maglight 3 Cell D hang pack- Black ..... P/N 13-04725 ..... $29.95
LED Maglight 3 Cell D hang pack- Grey Pewter ..... P/N 13-04881 ..... $32.80
ACCESSORIES PACK - Includes: Pocket clip, lanyard wrist strap with key ring, anti-roll device, red, clear, and blue lenses.
P/N 13-04727 ..... $3.95

MAGLITE D CELL ACCESSORY PACK

Mounting Brackets (Fit D-Cell Only) Mount your Mag-Lite® flashlight on a wall, in a vehicle, boat, airplane or home. Lens Holder / Anti-Roll Device This item both retains a colored lens and helps prevent the flashlight from rolling off irregular surfaces. Note: The Lens Holder and Lenses may also be used on "C" cell Mag-Lite® flashlights ..... P/N 13-04886 ..... $8.50

MAGLITE FLASHLIGHTS

Mini Maglight AA - Black ..... P/N 13-04913 ..... $11.55
Maglight 2 Cell D - Black ..... P/N 13-04915 ..... .$22.50
Replacement Bulb for 2D Cell ..... P/N 13-13594 ..... $3.35

MAGLITE XL100 LED FLASHLIGHT

Features a rear push-button tail cap switch coupled with five selectable modes, plus variable strobe rates and intensity level memory recall. Rugged, machined aluminum construction. Anodized inside and out for improved corrosion resistance. Water and Shock Resistant. Sealed at both ends with high-grade rubber o-rings and lip seals. Overall Length: 4.8". Barrel Diameter: 1". Head Diameter: 1". Batteries Required: (3) AAA Size Alkaline (included)

Black ..... P/N 13-07270 ..... $32.95 Red ..... P/N 13-07271 ..... $32.95
Grey ..... P/N 13-07272 ..... $32.95 Blue ..... P/N 13-07274 ..... $32.95

MAGLITE XL50 LED FLASHLIGHT BLACK

Features: Compact, pocket sized design (every day carry). Adjustable LED Beam (Spot-to-Flood). Durable, rugged, machined aluminum case Anodized for corrosion resistance and durability. Intelligent energy source management - continuously monitors the balance between high brightness and efficient power usage allowing for prolonged battery life. Powered by three (3) AAA alkaline batteries (included). Individually serial numbered

Color	Part No.	Price
Black	13-08982	$32.50
Red	13-08989	$32.50
Gray	13-08990	$32.50
Silver	13-08991	$32.50
Blue	13-08992	$32.50

NIGHTHAWK FINGER LIGHTS

High intensity 9,000 Mini Candela bright white LED light uses the same technology originally developed for pilots in Operation Desert Storm. Conveniently straps on a finger or clip to caps & headgear for point & shoot illumination. Visible for over half a mile.

P/N 14-00022 ..... $12.95

VANTAGE VUE WIRELESS WEATHER STATION

Includes: - Integrated Sensor Suite: Wireless, Rain Collector, Anemometer, Weather Proof Cover, Radiation Shield, Wind Direction, Solar Panel, Bubble Level. - Console: Time & Date, Moon Phase, Forecast Icons, Temperature Icons, Temperature & Humidity, Retansmits, Barometer, Variable Display Options, Rain Totals, "Change in Weather" Feature, Weather Center, User-Friendly Keypad, Graphs, "This Time Yesterday" Feature, Alarms, Wind Speed - Mounting hardware (mounting pole sold separately).

Weather Station ..... P/N 13-11572 ..... $354.95
Mount Pole Kit ..... P/N 13-11576 ..... $32.50
Mounting Tripod ..... P/N 13-04569 ..... $66.85
See www.aircraft spruce for additional options.

BEND-A-LIGHT

Bend to any configuration and illuminate hard-to-reach areas where conventional lighting cannot go. The incredibly brilliant light beam penetrates anywhere! A must for electronics, automotive, maintenance, repairs, locksmiths, industrial, hobbies, around the house and more. The only complete line of professional quality high intensity flexible light tools. Available in 3 lengths and 3 different lamps to choose from. Made in USA and come with batteries installed.

Part No.	Description	Length Flex Shaft	Length Overall	Batt.	Bulb	Price
12-15005	Mini Pro	6″	11.5″	2-AAA	12100	$19.95
12-15150	Pro	15.75″	24″	3-AA	12110	$38.60
12-10250	Removable Shaft	9.5″	15.75″	2-AA	12100	$20.95

Part No.	Description	Dia	Bulb Life	Price
12-15020	12100 - Replacement Lamp	5/32″	4 Hours	$7.50
12-12110	12110- Krypton Lamp	5/32″	20 hours	$8.95

AVIATOR'S QUIQLITE

Extra Bright LED, available with Red, Green, White or Blue Light. Handy pocket clip and rotating arm. Rotating "light arm" allows you to place the light where you need it. Push-button On-Off switch with convenient 7 minute Auto-Off feature. Over 40 hours of light using replaceable lithium watch batteries (included). Fits easily into shirt or uniform pocket.

Blue LED QuiqLite ..... P/N 13-02719 ..... $10.95
Green LED QuiqLite ..... P/N 13-02728 ..... $10.95
Red LED QuiqLite ..... P/N 13-02729 ..... $8.95
White LED QuiqLite ..... P/N 13-02730 ..... $10.95

SURE CHECK FUEL LIGHT

Will assist in ensuring your safety every time you strain test your fuel prior to flight. At night, it's safe & easy to use. The Sure Check Fuel Light, when used with your fuel test tube, will light up all the water and debris that might be present. The case is made of durable aluminum, weighs only 2.2 ounces, is 3" long, and uses a 12 volt battery to power a high intensity white LED light build. The casing is sealed with a strong neoprene rubber seal to keep any fuel from leaking into the case. Color: Red. Made in USA.

P/N 13-04207 ..... $17.95

SAFE-LIGHT SUPER BRIGHT FLASHLIGHTS

Lightweight and palm-size yet powerful, with ultra-long battery life(9v battery included). Emergency Strobe plus other essential safety modes: Constant Glow, Power-Save, High Beam, L.E.D., Power-Save mode . Also available with blue, green or red LED.

Blue LED ..... P/N 13-04152 ..... $14.85 Green LED ... P/N 13-04153 ..... $14.85
Red LED ..... P/N 13-04154 ..... $14.85

ASA LED FLIGHTLIGHT

Ideal for the flight bag where space and convenience are priority. The flashlight has both white and green bulbs, making this an effective tool for preflight, night flying and chart reading. ASA wings logo imprinted in silver. . Typical battery life is a solid 10 hours.

P/N 13-06426 ..... $29.50

PS

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PILOT FLASHLIGHTS

SUREFIRE AVIATION FLASHLIGHTS

Long known as a major supplier of quality flashlights to law enforcement and the military, Surefire has just made available a new flashlight built for aviators that combines two widely different light sources in a single compact illumination tool providing dual power and variable output. Surefire flashlights feature the finest beams, reflectors, switches and powerful tungsten lamps available on the market today. They are not inexpensive but for the pilot looking for a truly unique, high quality, reliable flashlight, Surefire is the answer.Surefire flashlights carry a lifetime warranty (excluding batteries and lamps).

The A2 Aviator features a high-output incandescent lamp producing 50 lumens surrounded by 35mm LED's set in a specially designed parabolic reflector. The Aviator's digitally controlled two-stage switch allows the pilot to choose LED's for soft light illumination in the cockpit or high output lamp for bright illumination during preflight inspection of your aircraft. The high beam on the A2 Aviator can illuminate the tail of a 747 from the ground. That's over 63 ft high! Not bad for a flashlight that measures only 5.6" in length and weighs only 4 oz. The A2 Aviator comes standard with a gray-green super-tough Type III hard anodized finish to military specifications, because it is the best and the toughest. It is powered by 2 lithium batteries, is shock-proof, water-resistant and comes with a lifetime guarantee (excluding batteries and lamps). Length: 5.9"

The A2 LED Aviator is a compact dual-output flashlight that provides two distinct beam types and optional output colors. It uses virtually indestructible power-regulated LED emitters and a precision micro-textured reflector to produce both spot and flood beams Press for a momentary-on 10-lumen long-runtime flood beam for general night use, close work, or where you need to preserve your night vision; press further for a momentary-on 120-lumen white spot beam—six times the light of a big two-D-cell flashlight; twist for constant-on low beam, twist further for constant-on high beam.

The L1 Lumamax features a 1W Luxeon LED which produces 15 lumens from one Surefire 3V lithium battery, which is three times brighter than a conventional mini light running on two AA alkaline. For the pilot needing only the soft light of LED lighting for cockpit illumination, the L1 Lumimax is an excellent choice. Length: 4.6"

The G2 Nitrolon is Surefire's most economical flashlight, and uses 2 lithium batteries to produce 65 lumens of diamond bright light for 60 minutes. The G2 is constructed of Black Nitrolon, a polymer compound that is lightweight, corrosion-proof, and non-conductive. Depress the tailcap on the G2 for momentary illumination or rotate fully inward for constant-on illumination. Length: 4.9"

A2 Aviator with red LEDs ..... P/N 13-03254 ..... $213.50
A2 Aviator with blue LEDs ..... P/N 13-03255 ..... $199.50
A2L Dual Aviator with white LEDs ..... P/N 13-07086 ..... $221.20
G2 Nitrolon flashlight (Plastic Body) ..... P/N 13-02021 ..... $41.30

SUREFIRE G2X™ PRO

A polymer-body version of the 6PX Pro, uses a high-efficiency LED—virtually immune to failure since there's no filament to burn out or break—that provides two light output levels: a brilliant, penetrating, perfectly pre-focused 200-lumen beam, and a 15-lumen low-output setting that lets you greatly extend the runtime per set of batteries, an invaluable option when you find yourself miles from civilization. Press the tailcap switch for momentary-on low, press further to click constant-on low, return to off and press or click on again within two seconds for high. A polycarbonate micro-textured reflector delivers a comparatively wider beam with generous peripheral light. ..... P/N 13-10290 ..... $65.50

See www.aircraftspruce.com for a complete selection of Surefire Flashlights.

SUREFIRE REPLACEMENT BULB MA02

The MA02 lamp assembly fits A2 Aviator flashlights and produces 50 lumens of light for 1 hour.P/N 13-04438 ..... $18.20

FLIGHTLIGHT™ - PILOT FLASHLIGHT

This AirClassics™ flashlight has both white and red lenses for preflight and night flying, extra Krypton bulb stored within, is water-tight, corrosion resistant, and features a clicking ON/OFF for maximum battery life. Focuses from spot to flood light. Black machined aluminum with ASA wings logo. Two AA batteries and PR-1 bulb included.

Flashlight: ..... P/N 13-01067 ..... $15.85
Bulb: ..... P/N 13-02320 ..... $4.85

PELICAN AVIATION LIGHTS VERSABRITE

This is the world's brightest swivel head pocket flashlight. The adjustable head swivels 180 degrees, enabling the pilot to direct the beam where he needs it. It is water resistant and mounts directly on the adhesive pad of yoke chart holders. Provides 6000 candlepower Xenon laser beam spot beam, and comes standard with clear, red, and blue-green lenses. Clips easily on shirts, belts, and caps for hands free use. Comes with multi-use velcro fasteners and 2 AA batteries.

P/N 13-00561 ..... $25.50

Versabrite mounting clips (1 top, 1 side mount)

MICRO ONE WATT LED FLASHLIGHT

Has a 1-Watt, 80-Lumen LED chip that emits over 4,300 End-foot candles (4300cd) of bright, cool white (8000 Kelvin) light * One Year Warranty * Focusable Lens: Narrow and Wide Beam * Puts out over 4,300 End-Foot Candles of light * Retains 50% of its light output after 1 hour of continuous use * Visibility approx. 2 miles, depending on atmospheric conditions and line of sight * Lights for 4 days (96 hours) at a diminishing light output rate * Uses 3 standard AAA batteries * Rugged Anodized Aluminum Body Finish * Push button on/off switch * Weight: 3.5 oz. without batteries, 4.8 oz. with batteries. Furnished with nylon holder.

P/N 13-07470 ..... $37.85

PILOT'S HANDY LANYARD LIGHT

This emergency light with a break-away neck lanyard is great for use around any aircraft. Ideal for pre-flight inspections after dark, providing you with a small, powerful flashlight which you can simply hang around your neck as you preflight the aircraft. Also makes the perfect cockpit light in an emergency. Furnished with blue-green and red lenses for night flying as well as a standard clear lens. Includes lanyard & 1 AAA battery. P/N 13-00571 ..... $19.95

MINI LED FLASHLIGHTS

Only 3.5 inches long. NOT water resistant. DUAL Ultra-bright LEDs with lifetimes of 100,000+ hours, never break, and provide smoooth illumination. •Thumbwheel Brightness Control • Energy Efficient -- Up to 320+ hours at the dimmest setting, 12+ hours at the brightest, from one 9V Alkaline. •Exclusive brightness regulation circuitry -- keeps the LEDs shining bright as batteries age, • 9 Volt Battery & 20 inch neck strap included

White & Red ..... P/N 13-04696 ..... $22.95
Red & Green ..... P/N 13-04697 ..... $22.95

MYGRIPLIGHT (LED)

Performs as an organizational tool as well as a multi purpose light. Organizes writing instruments, cell phones, eyeglasses, flight charts and other documents by means of a patented polyester snap-in-lock structure. The patented multi purpose light is connected to the organizational tool by means of a flex-arm. The light has 360 degree rotation and can be removed from the organizer to act as an independednt lighting instrument. Offers both white and red light illumination on demand.

Attaches with Suction Mount ..... P/N 11-09665 ..... $9.95
Attaches with Velcro Mount ..... P/N 11-09669 ..... $9.95

FLITELITE FINGER LIGHT

A simple light that attaches to the finger. An integrated, battery saving 10-minute auto-off. Simple touch the button and light will shine wherever the pilot points.

Green ..... P/N 13-07275 ..... $8.90
White ..... P/N 13-07276 ..... $7.95
Red ..... P/N 13-07277 ..... $6.50

STREAMLIGHT FLEXIBLE FLASHLIGHT

The Streamlight has a 6.21" flexible, insulated cable extension allows 14 inches for hard-to-reach areas. Made of silver aircraft aluminum casing and a tough PVC shieled cable. Unbreakable, 100,000-hour white LED that never needs replacing. It has a runtime of up to 60 hours. (4) AAA batteries included. Wt: 1.1 oz. P/N 13-03142 ..... $25.75

COAST PX20 DUAL LED FLASHLIGHT

The PX20 Dual Color LED Flashlight combines five super bright white LEDs with one red LED. Each LED is controlled by a separate switch, allowing you to turn on the desired color with one click; no cycling through switch modes to find your color. The white light is for general flashlight use, while the red LED is perfect when you only need minimal light, such as when reading a map. A lightweight aluminum casing offers great durability and will hold up to heavy daily use. P/N 13-12049 ..... $27.95

PS

FLASHLIGHTS

XEVISION PERSONAL LED FLASHLIGHTS

The compact LED flashlights are so small that they fit in the palm of a hand comfortably. They are so bright, even die-hard HID Xenon lighting technology purists can not resist.
Super-bright white light from one small but powerful LED Our LED flashlights feature the latest commercial Cree LED 7090 XR-E, which delivers unprecedented levels of bright white light. The legendary 7090 XR-E is tested to the highest standards in the LED industry. The white light generated is as cool as HID with around 4000ºK to 5000ºK. The current draw is quite small while the LED is very efficient with a luminous flux of up to 100 lm min. @ 350 mA, and a luminous efficacy up to 75 lumens/watt.
XeVision personal LED flashlight models - The compact LED flashlights are so small that they fit in the palm of a hand comfortably. They are so bright, even die-hard HID Xenon lighting technology purists can not resist.

XV-C1C - Is their most compact LED flashlight using one long-lasting 3 VDC Lithium CR123A battery. The XV-C1C features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C1C offers a remarkably compact size and is extremely solid and reliable with its digitally regulated brightness. One 3 VDC CR123A Lithium battery

XV-C1C (Black) ..... PN 13-05144 .....$84.95
XV-C1C (Iridium)..... PN 13-05147 .....$86.75

XV-C2C- Features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C2C offers a remarkably compact size and is extremely solid and reliable with its digitally regulated brightness. Two 3 VDC CR123A batteries (Lithium), not rechargeable.

XV-C2C (Black) ..... PN 13-05145 .....$87.95
XV-C2C (Iridium) ..... PN 13-05148 .....$89.95

XV-C2A - Features six settings, 4 of them being output levels. This flexibility not only allows the user to select the best compromise between brightness and runtime for any given task but also has the ability to aid in an emergency. The XV-C2A offers a compact size and is extremely solid and reliable with its digitally regulated brightness. Two 1.5 VDC AA (Alkaline, Lithium) or 1.2 V NiMH batteries.

XV-C2A (Black) ..... PN 13-05146 .....$87.95
XV-C2A (Iridium) ..... PN 13-05149 .....$89.95

ACCESSORIES

Model	Description	Part No.	Price
WF-138C Charger for XeVision XV-C2C	Charger for a single or pair of over-discharge protected R-CR123A rechargeable Li-Ion cells. Comes with 2 R-CR123A cells.	13-05141	$47.95
WF-138 Charger only	Just the charger - for the WF-123 combo package	13-05140	$21.95
ICR123 Rechargeable Lithium Batteries	These ICR123 rechargeable 3 V batteries used for the XV-C2V LED flashlight. Note that the standard CR123A batteries must not be recharged!	13-05139	$25.95
CR123A Single Cell Lithium Technology	1 Titanium 3 V CR123A battery. For the XV-C1C LED flashlight. Prevents excessive discharge that can damage lithium cells and may lead to catastrophic incidents.	13-05142	$1.95
CR123AX2 Twin Cell Lithium Batteries	2 Titanium CR123A batteries are carefully matched and form one single sealed unit, 3 V but double capacity). Used for the XV-C2C LED flashlight. Prevent excessive discharge that can damage lithium cells and may lead to catastrophic incidents.	13-05143	$3.95

SAFE-LIGHT'S L.E.D. PALIGHT SURVIVAL

Approved USA GSA Vendor. Contract # GS-07F-9512S Supplied to the Military, Law Enforcement Agencies, F.E.M.A. Embassies & Special Forces Features: Power in a Palm-size, 4 Most Needed Light Modes Including Its Unique Fast-find Glow Plus Power-save * High Beam Locator & Assistance Seeking Strobe Strong Focused High Beam, Rugged Non-slip Rubber Casing (Meets Military 'Drop-on-concrete' Spec), Extra-ordinary Long Battery Life. Red.....P/N 13-02928 .....$19.95

AIRCRAFT SPRUCE LED PILOT'S FLASHLIGHT

The Aircraft Spruce LED pilots flashlight comes with a lifetime guarantee. Ultra-Bright light is provided with 12 energy saving LED bulbs. Made of aircraft aluminum, the flashlight casing is tough and durable. Attractive presentation box included. Size: 4-5/8" Long. Water and Shock Resistant. Push Button Sealed Rubber Switch. Battery Included P/N 13-06922.....$7.95

NEBO HIGHBEAM RECHARGEABLE LED FLASHLIGHT

Finally…a solution, NO BATTERIES! A high-powered LED light that NEVER needs batteries. An intense 35 lumen flashlight that charges in ANY 12V power outlet (cigarette lighter.) Constructed with anodized aircraft grade aluminum and is completely weather-resistant.

Color	Part No.	Price	Color	Part No.	Price
Black	13-12236	$10.95	Green	13-12239	$10.95
Blue	13-12237	$10.95	Pink	13-12240	$10.95
Brown	13-12238	$10.95	Silver	13-12241	$10.95

THE LIGHTED PILOT PEN

Professional LED Writing Instrument for Pilots, Flight Crews, Law Enforcement and Military Use. Features:• Aircraft aluminum housing with on/off LED lighting and rotating top cap ink cartridge retraction. • Works as either a standard pen or for writing in low light or dark conditions. • Uses one common AAA cell for up to 20 hours of illumination •Gift box packaged with an extra ink cartridge and extra AAA cell • Two extra-bright White LEDs with a life of over 100,000 hours P/N 13-05278 .....$19.50

PILOTS PEN LED NIGHT WRITER

Easy-to-use switch both extends/retracts ink and operates the LED lighting. Perfect for Aviators, Travelers, First Responders and more. Includes (2) pens per box. P/N 13-15685 .....$19.95

PILOT'S COCKPIT UTILITY & EMERGENCY LIGHT

See all your panel control settings, maps, charts, compass, and log books. Use red light for night vision, or bright white light. Designed to travel anywhere, the Navigation Light can be clipped to most surfaces or used free-standing. * Two red LEDs in one head and two white LEDs in a second allow for lighting versatility * Dual flexible arms provide infinite maneuverability * Sensor switches on each lighting head require just a tap to turn on one or both LEDs * Optical grade lens provides evenly distributed light with no hot spots * Offers 20 hours of continuous use on 3 AAA batteries (included)
P/N 11-05821 .....$21.85

PS

FLASHLIGHTS

GLOVE LITE - THE FLASHLIGHT YOU CAN'T DROP

The perfect tool for flying at night, GloveLite allows you to juggle tasks without needing an extra hand. With long-lasting batteries and a water resistant, comfortable neoprene shell, you'll hardly notice it's there. Once you fly with GloveLite, you'll never fly without one again! Perfect night-flight kneepad illumination. Dual 5,000 mcd LEDs. Flashlight you can't drop. Durable! Machine-washable and waterproof!! Light where you need it: for pilots, mechanics, crew members, etc! Lifetime Satisfaction Guarantee. Comfortable fit with 0.5mm black neoprene

Description	Red		White		Green	
Medium Left	13-10137	**$31.50**	13-10123	**$29.95**	13-10129	**$23.95**
Medium Right	13-10134	**$31.50**	13-10119	**$24.50**	13-10126	**$31.75**
Large Left	13-10138	**$31.50**	13-10124	**$31.50**	13-10132	**$24.95**
Large Right	13-10135	**$31.50**	---	**$24.95**	---	**---**
Over-Glove Left	13-10139	**$31.50**	13-10125	**$31.50**	13-10133	**$31.50**
Over-Glove Right	13-10136	**$31.50**	13-10122	**$31.50**	13-10128	**$31.50**

FLITELITE A1 TACTICAL AVIATOR SERIES FLASHLIGHT

Specially designed for the aviator and tactical operations to avoid being blinded by a flashlight that is too bright in the cockpit. The light starts in a programmable memory mode, which is user programmable to any brightness level desired. P/N 13-11259..... **$33.50**

FLITELITE L1 TACTICAL AVIATOR SERIES LED FLASHLIGHT

Specially designed for the tactical aviator that requires a rugged, easy to control light that delivers CREE LED light through a MOON (the exact spot desired) lens.
Green..... P/N 13-11260.... **$19.95** White .....P/N 13-11261 ...**$19.95**

SAGA AVIATION SG5 POCKET FLASHLIGHT

Has a LED chip having 100,000 hours life expectation. This technology produces an unbelievably bright beam of light coupled with incomparable energy efficiency. Features: Protection IP-63 (wheather resistant), "One hand" technology focus, Robust aluminum housing, Three (3) intensity modes (low intensity, high intensity and stroboscopic mode), Luminous beam of 200 lumens with a projection of 220m, Operates on three (3) AAA batteries (batteries not included)
P/N 13-09557..... **$26.95**

SAGA AVIATION SG7 POCKET FLASHLIGHT

Slim profile allows easy storage in the plane, in your flight bag or your pocket. Due to it's advanced "Cree LED" technology it will provide an unbelievably bright beam of light. It can be used with lithium batteries to reduce the weight and allow the use of the flashlight in cold weather. Features: Protection IP-63 (wheather resistant), "One hand" technology focus, Robust aluminum housing, Operates on two (2) AAA batteries (batteries not included)
P/N 13-09558 ..... **$24.75**

THE ASHLIGHT

13-04347

13-04348

13-04349

The ASHLIGHT has been designed and tested by pilots. The super-bright red LED light provides the ultimate in hands-free cockpit lighting with a flip of the switch. The ASHLIGHT is designed with a stainless steel spring that duplicates the original ashtray clip for easy snap-in installationThe majority of aircraft manufacturers (Cessna, Beech, Bellanca, Grumman, Mooney, Piper, etc.) all used a standard ashtray opening of 1.5h x 2.125w or 1.6h x 4.7h side panel mounted ashtray. Smaller planes used the Standard Size while larger planes such as KingAir, Chieftian, later model Barons and Bonanzas, etc. use the Large size. If your aircraft does not have an ashtray, the Visor Clip Model is an excellent alternative!

Standard Ashlight .....P/N 13-04347 ..... **$34.85**
Large 5" Ashlight .....P/N 13-04348 ..... **$32.75**
Visor Ashlight.....P/N 13-04349 ..... **$31.50**

ICON SOLO LED FLASHLIGHT

A high-efficiency LED and deep reflector create a smooth beam on either low or high. A sleek, pen-shaped aluminum body is durable, easy to carry, and features a sturdy pocket clip that keeps Solo securely in place. Because losing a flashlight this stylish and functional is not something you'll get over easily. Features: High-strength aluminum body with sturdy pocket clip, Durable power-regulated LED maximizes output and runtime; never needs replacing, Ergonomic "clickie" tailcap switch allows for easy switching between two output levels Micro-textured reflector creates a smooth, powerful beam Powered by two AAA alkaline batteries; included, Sealed with O-rings; weatherproof.
P/N 13-08072..... **$22.50**

ICON ROGUE 1 LED FLASHLIGHT GREEN

Serious light output from a compact, sculpted aluminum body that's rugged and features two output levels. It's nearly impossible to relegate this beauty to the junk drawer. Features: High-strength aluminum body with open architecture design; effectively dissipates heat and fits comfortably in the hand. Durable power-regulated LED maximizes output and runtime; never needs replacing Micro-textured reflector creates a smooth, powerful beam. Ergonomic "clickie" tailcap switch allows for easy switching between two output levels. Powered by one AA alkaline battery; included. Sealed with O-rings; waterproof to one meter for 30 minutes. Green Housing ..... P/N 13-08074..... **$32.75**
Black Housing ..... P/N 13-08073..... **$28.75**

SMITH & WESSON GALAXY 12 LED FLASHLIGHT

The Galaxy 12 LED Flashlight showcases our latest developments in flashlight versatility. This dual switch flashlight utilizes two buttons, one giving its user 6 White LEDs and the second provides a choice of 2 Blue/2 Red/2 Green LED modes. The shatterproof LED diodes last over 110,000 hours, are visible for over one mile, and will NEVER need replacing. Coupled with a limited lifetime warranty, these flashlights will protect you for a lifetime. Black Matte Aluminum. Includes 3 (AAA) batteries and deluxe nylon holster with extra battery storage.
P/N 14-02199..... **$27.50**

SMITH & WESSON ALUMINUM CARABEAMER CLIP LIGHTS

A bulb life of up to 100,000 hours and operates on CR1220 lithium batteries, which last up to 10x longer than standard lithium batteries. The shatterproof LED diodes and the anodized aluminum casing keep the Clip Lights protected from everyday wear and tear. Has a constant on/off switch and a momentary on/off switch. Clip easily attaches to jackets, purses, backpacks, pockets, key rings and more. Green .....P/N 14-02128 ..... **$4.65**

SEE OUR WEBSITE FOR MORE SMITH AND WESSON AVIATION FLASHLIGHTS.

MITYLITE FLASHLIGHT BLACK

MityLite® is made of unbreakable space age polycarbonate resin and is 4-3/4" (11.3 cm) in length. Its Laser Spot Xenon® lamp module can cut through water, smoke, fog, and rain making it a perfect light source for all applications. The MityLite® is compact, lightweight and equipped with a shirt clip, making it easy to fit into pockets, purses, tool kits, camera bags, or glove compartments. Accidental turn on and mechanical switch failure is eliminated because of the rotary on/off switch. The MityLite® is ATEX, FM, CSA and AUS approved and water resistant (not for diving applications). Color: Black.
P/N 13-02238 ..... **$12.50**

PS

PETZL HEADLAMPS

TACTIKKA PLUS/FLIP FILTER RED (E49P)

TacTikka Plus 4 LED Headlamp with red or white light, 3 power settings & flash, alternates easily between white and red light simply by moving the pivoting filter over the reflector. Features: •3 power settings & Flash •Tilt focus •Long battery life up to 110 hours •Lightweight and comfortable to wear: ergonomically designed elastic headband. •Water-resistant for all-weather use •Operates with three AAA-LR03 batteries (supplied) •Weighs 78g •Includes batteries.

P/N 11-05096 ..... $44.95

TIKKA LED TILT HEAD LAMP

46P2- LED headlamp with red flip down filter, and tilting head. 3 LED array produces long-lasting and even light. Features: •Produces diffuse, proximity lighting. •Red filter for discrete light and preservation of user's night vision. •Flip-down filter makes it easy to switch between red and white light. •Light beam can be easily aimed where desired. •Adjustable and comfortable elastic headband. •Water resistant for all-weather use. •Black lamp and headband.

P/N 11-04990 ..... $39.85

TACTIKKA CAMO BAND RED FLIP UP E46PC

TacTikka LED alternates easily between white and red light simply by moving the pivoting filter over the reflector. Long battery life up to 110 hours. Lightweight and comfortable to wear: ergonomically designed elastic headband. Water-resistant for all-weather use. Elastic headband and lamp head in camouflage color.

P/N 11-04988 ..... $36.95

SAGA AVIATION HANDS-FREE LIGHT

Offers three modes of lights. The first mode, a high density beam supplied by 4 ultra brilliant LED so that nothing escapes you. A second lower density beam mode, that utilizes 2 of the 4 LED in order not to dazzle you. Finally, 3 mini red LED that offer you glare free night vision. The Hands-Free can be used with lithium batteries to reduce the weight and allow the use of the flashlight in cold weather. Adjustable elastic headband for added comfort. Hands-Free has 7 different titling positions. Operates on three (3) AAA batteries (batteries included)

P/N 13-09559 ..... $22.50

DEFENDER ULTRA FLASHLIGHT

Virtually indestructible LED emitter regulated to maximize output and runtime. TIR lens produces tight beam with enough surround light for peripheral vision. Strike Bezel® provides personal defense option. Coated tempered window resists impact, maximizes light. Dual-output tailcap click switch—press for momentary-on high, click for constant-on high, return to off then press or click again to select low. High-strength aerospace aluminum body, Mil-Spec hard-anodized for extreme durability. Weatherproof O-ring and gasket sealing. Includes high-energy 123A batteries with 10-year shelf life.

P/N 13-13586 ..... $139.99

DEFENDER ULTRA FLASHLIGHT 500 LUMINUS

Virtually indestructible LED emitter regulated to maximize output and runtime. Two output levels—500 lumens high for maximum light, 5 lumens low for extended runtime. TIR lens produces tight beam with enough surround light for peripheral vision. Strike Bezel® provides personal defense option. Coated tempered window resists impact, maximizes light. Dual-output tailcap click switch—press for momentary-on high, click for constant-on high, return to off then press or click again to select low. High-strength aerospace aluminum body, Mil-Spec hard-anodized for extreme durability Weatherproof O-ring and gasket sealing. Includes high-energy 123A batteries with 10-year shelf life.

P/N 13-13587 ..... $185.50

PETZL TIKKA XP HEADLAMP

Provides a powerful, even and adjustable white light, with long light duration. A single light source in a compact headlamp for multiple uses. Powerful, focused light beam with 3 lighting levels (maximum, optimum, economy) and a blinking mode, to adapt the light to the activity at hand. Boost mode: 50 % more light than the maximum level for 20 seconds. Wide angle lens for flood beam-like proximity lighting. Battery life indicator (indicator light + blinking LED): warns when the batteries are approximately 70 % drained and 90 % drained. Compact and lightweight. Tiltable light body enables light beam to be directed where needed. Comfortable and stable to wear: adjustable and ergonomic elastic headband. Light distance: up to 35 m (50 m in boost mode). Light duration: up to 120 h. Operates with 3 AAA/LR03 batteries (included). Weight: headlamp (59 g) + batteries (36 g) = 95 g P/N 14-00162 ..... $49.95

DUO 5 HEADLAMP PETZL LIGHTS E69

The DUO lamps are ideal for use in wet environments, but are not designed for prolonged submersion (i.e. diving). Features: • Waterproof with dual light source: focusable halogen bulb and an LED module. • Switching on & off, brightness selection, zooming • The DUO lamps allow the light to be optimized (distance, duration) according to your needs. • Simultaneous use of both bulbs is not possible. • Unlocking/locking the bezel

P/N 11-04996 ..... $104.95

ZIPKA PLUS/PUSH BUTTON SWITCH E48P

Ultralight 4-LED headlamp with 3 lighting levels and retractable cord. Retractable cord can be used to attach lamp to the head, the wrist, wrapped around a pipe, etc. Features; •Very lightweight. •Three lighting levels (maximum, optimum, economy) and a blinking mode. •Long light duration up to 150 hours. •Water-resistant for all-weather use.

P/N 11-04989 ..... $37.75

LIGHT BUDDY

Light Buddy its a swivel magnetic mount fits Maglite XL 50 XL 100 or any 1" light. Flashlight not included.

P/N 13-12076 ..... $19.95

LITHIUM-ION CORDLESS SUPERLITE

The new SuperLite by SPT is the next generation of cordless lights. The light has 60 super-bright, true-white premium LEDs. The Lithium-Ion battery provides up to 4 hours runtime at full brightness.

The feature list on this innovative design is long—high visability ratcheting hooks, triple hex design prevents rolling, overcharge protection prolongs battery life, 500 Lux/ 180 Lumens of brightness for the entire runtime without dimming and of course it is rechargable (wall charge included).

Use it as an emergency panel light (hook it to the glare shield), use it to illuminate the baggage compartment or under the cowling to check the oil at night and great for working under the panel. Keep close tabs on this light as everyone is going to ask to borrow it!

P/N 11-10596 ..... $72.85

PS

FLASHLIGHT HOLDERS - ARM RESTS

MERCURY CLAMP FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for largers flashlights. P/N 13-04005 ..... $19.75

MERCURY-MAGNETIC FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. P/N 13-04006 .....$19.75

GEMINI CLAMP FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for largers flashlights. P/N 13-04007 .....$29.95

GEMINI MAGNETIC FLASHLIGHT HOLDER

Astro Arm is the perfect device when you need your flashlight directed precisely while having both hands available to perform a task. These holders are great for aviation, marine, automative, racing, and emergency lifesaving applications. Available in Mercury models for smaller flashlights and Gemini models for largers flashlights.

P/N 13-04008..... $29.95

GUPPIE MULTI-TOOL

The adjustable wrench jaw opens to 1/2" so you can use it for all kinds of light repair and assembly jobs. Thanks to the carabiner gate, the Guppie is easy to carry on a belt loop, D-ring, pack or rope. (But it is not a weight-bearing carabiner.) The high-carbon stainless steel blade with a Razor-Sharp edge can be opened and closed with one hand using the blade slot. The removable bit carrier is also a high-intensity LED light. It has two strong magnets to hold it securely to the Guppie's left side. The stainless steel clip will hold the Guppie in your pocket or on gear, which gives a lot of versatility. One more trick: The Guppie carabiner detent will open bottle caps and metal jar lids. Specifications: Blade Length: 2.0" (5.1 cm) Blade Steel: 3Cr13, 52-55 HRC Handle Length: 3.5" (8.9 cm) Tool Weight: 4.1 oz. (116 g) Bit Carrier Weight: 1.2 oz. (34 g) Batteries: Two CR327 3V Lithium

P/N 13-07358..... $38.95

SIDESTICK CONTROL ARM RESTS

The side stick control arm rests will steady the hand, wich improves flying and reduces wrist and arm fatigue. The arm rests were designed by an orthopedic specialist to reduce wrist and hand carpel tunnel syndrome. They can also be used for throttle rests. Color: Black. ABS plastic. Furnished as right/left set. P/N 13-03265 .....$25.85

COCKPIT COMPANION ORGANIZERS

The Cockpit Companion provides a convenient organizer for the loose items pilots shuffle in the cockpit. It is easily installed with Velcro between the front seats and features clean out windows at bottom of the storage areas. Holds fire extinguisher, charts, books, transceiver, headsets, glasses, wallet, fuel strainer, flashlight, pens, highlighters, and more. Attractive and durable, the Cockpit Companion is built from top-grade smoked acrylic. Made in USA.

STYLE #172 - Fits most Cessna 172's plus any other aircraft with this available space.Top portion dimensions: 22" Long (plus 4" headset post) 8" Tall (12" total w/bottom), 3" Wide Bottom extinguisher dimension: 22" Long 4" Tall (12" total w/top), 4-1/4" Wide. Features removable pencil "divider" for easy cleaning. All are outside dimensions!

P/N 13-02710 ..... $229.00

CIGPEN

CIGPEN HOLDER - CigPen installation is as easy as 123. Pull the nasty ashtray out, peel the double stick tape, insert and press in CigPen. CigPen was designed to hold two standard pencils or pens along with a Mini Mag Lite AAA. For a very low cost, you can easily turn your existing ashtray into a useful device. Fits C-150, 172, 182 Cardinal.

DOOR LOCK HANDLE - When you order the CigPen, you will also receive the Cessna 150 door lock. The door lock is made from ABS Plastic. It is engraved with lock, un-lock, and indicating arrows. Fits C-150 airplanes. P/N 13-06913 ..... $18.75

MAP, CHECKLIST & LOG BOOK HOLDERS

These holders come in three sizes to store your maps, checklists and log books. They are thermoformed from ABS plastic, and come in either black or gray.

Description	Size	Color	Part No.	Price
Aircraft Log	4-1/2"x7"x1/4"	Black	13-03086	$15.95
Engine Log	6-1/2"x7"x1/2"	Black	13-03087	$15.95
Map/Checklist	9"x10"x 5/8"	Gray	13-03088	$27.50
Aircraft Log	4-1/2"x7"x1/4"	Gray	13-03089	$17.95

PLANE POCKETS

Nine pockets protect and organize your cockpit and keep your equipment like new. Three large pockets with drawstrings hold POH Charts, Approach Plates, Sectionals. An additional three more pockets are designed to hold your handheld radio, cameras, manuals, batteries, oxygen mask, and many other items. Top pockets will hold paper, sunglasses, water, flashlights and cables. Lightweight, rip-stop nylon, easy to install. Your headrest must be able to be removed to install pockets. Must supply number of inches between the centers of headrest post.

With Headrest .....P/N 13-04160..... $72.75
W/O Headrest.....P/N 13-04161 ..... $98.50

PS

LEATHERMAN POCKET TOOLS

LEATHERMAN SQUIRT PS4

The Leatherman Squirt PS4 is the first miniature pliers multi-tool tough enough to be a Leatherman. Now the Squirt also sports a scissors, making it even more useful than before. The key ring attachment offers the flexibility to place it on your key chain, backpack or even a zipper. Just two ounces, it's light enough to take anywhere. Fits nicely on a key ring. Color: Blue.Weight: 1.9 oz Length (Closed): 2.25 inches / 5.72 cm (Closed) Material: Stainless Steel with anodized aluminum scales
Features: • Needlenose Pliers • Regular Pliers • Scissors • 420HC Knife • Wire Cutters • Wood/Metal File • Medium Screwdriver • Flat/Phillips Screwdriver • Bottle Opener • Key Ring Attachment.
P/N 13-11706..... $27.65

LEATHERMAN SQUIRT ES4

The E4 sets you up with 20GA, 18GA, 16GA, 14GA and 12GA wire strippers and electrical wire cutters. The gripping edges on the ES4's spring-action pliers help you get a firm grasp on fuses, small cables, and many hard-to-reach items. P/N 13-09289 ..... $27.50

JUICE® S2

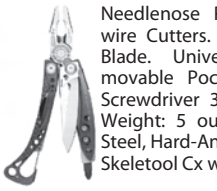
Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener. Length: 3.25"/ 8.25cm closed, Weight: 4.3 ounces / 122 grams, Materials: Stainless steel with anodized aluminum scales. Color: Orange
PN 13-05559 ..... $45.95

JUICE® C2

Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Scissors. Length: 3.25"/ 8.5cm closed, Weight: 4.3 ounces / 122 grams, Materials: Stainless steel with anodized aluminum scales. Color: Red PN 13-05560 ..... $45.95

JUICE® XE6

Features: • Needlenose Pliers • Straight Knife • Wire Cutters • Hard-Wire Cutters • Extra-Small Screwdriver • Small Screwdriver • Med/Lrg Screwdriver • Phillips Screwdriver • Lanyard Attachment • Can/Bottle Opener • Corkscrew with Assist • Scissors • Saw • Awl • Serrated Knife • Diamond File. Length: 3.2"/ 8.25cm closed, Weight: 6.8 ounces / 190 grams, Materials: Stainless steel with anodized aluminum scales. Color: Purple PN 13-05562 ..... $69.95



LEATHERMAN SKELETOOL, CX

Needlenose Pliers. Regular Pliers. Wire Cutters. Hard-wire Cutters. Bit Storage in Handle. 420HC Stainless Steel Blade. Universal Bit Driver. Carabiner/Bottle Opener. Removable Pocket Clip. Included Bits: Phillips #1 and #2. Screwdriver 3/16" and 1/4". Length: 4 in. / 10 cm closed. Weight: 5 ounces / 142 grams. Materials: 420HC Stainless Steel, Hard-Anodized Aluminum Handle Insert
Skeletool Cx with sheath .....P/N 13-07071 ..... $89.85

LEATHERMAN SKELETOOL

420HC Stainless Steel Clip Point Combo Straight/Serrated Knife. Needlenose Pliers. Regular Pliers. Wire Cutters. Hard-wire Cutters. Large Bit Driver. Bottle Opener. Carabiner Clip. INCLUDED BITS: Phillips #1 and #2 Bit, Screwdriver 3/16" and 1/4" Bit. Stainless Steel with 6061-T6 Aluminum Handle Insert. Stainless Steel body. Outside-accessible Blade for One-handed Opening. All Locking Blades and Tools. Removable Pocket Clip. Nylon Sheath Sold Separately. 25-year Warranty. 4 in | 10 cm (closed). 5.0 oz | 142 g. 2.6 in | 6.60 cm (blade length)
Skeletool.....P/N 13-07068..... $49.75
Skeletool with sheath .....P/N 13-07069..... $53.75

CRUNCH TOOL

Locking Pliers, Wire Cutters, Hard-Wire Cutters, Serrated Knife, Metal/Wood File, Ruler (Inch/Metric), Bottle Opener, Small Screwdriver, Medium Screwdriver, Large Screwdriver, Phillips Screwdriver (#1/#2), Hex Bit Driver, Wire Stripper, Lanyard Attachmen P/N 13-02727..... $98.00

WAVE TOOL

Needlenose Pliers, Regular Pliers, Wire Cutters, Hard-Wire Cutters, Clip-Point Knife, Serrated Knife, Saw, Scissors, Wood/Metal File, Diamond-Coated File, Large Bit Driver, Small Bit Driver, Large Screwdriver, Ruler (8 inch/19 cm), Bottle/Can Opener, Wire Stripper, Lanyard Attachment, Two Double-Ended Bit P/N 13-03289..... $75.75

SIDEKICK

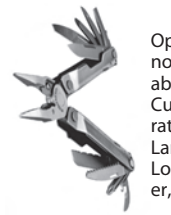
Stainless Steel Body, Leather Sleeve, Spring-action Needlenose Pliers, Spring-action Regular Pliers, Spring-action Wire Cutters, 420HC Combo Knife, 420HC Serrated Knife, Saw, Wood/Metal File, Small Screwdriver, Medium Screwdriver, Phillips Screwdriver, Ruler (1 in / 2.54 cm), Bottle Opener, Can Opener, Wire Stripper, Removable Pocket Clip, Lanyard Ring, Carabiner Bottle Opener Accessory
P/N 13-11703..... $38.50

SUPER TOOL 300

Stainless Steel 420HC Handles, All locking blades and tools, Comfort-sculpted Handles w/ Cutouts for Access with Gloves On, 420HC Clip Point Knife with Straight Edge, 420HC Sheepsfoot Serrated Knife, Needlenose Pliers, Regular Pliers, 154CM Removable Wire Cutters, 154CM Removable Hard-wire Cutters, Stranded-wire Cutters, Wire Stripper, Electrical Crimper, 5/16" Screwdriver, 7/32" Screwdriver, 1/8" Screwdriver, Phillips Screwdriver, Wood/Metal File, Saw, Bottle Opener, Can Opener, Ruler (9 inch/22 cm), Awl with Thread Loop
P/N 13-11704..... $59.95

CHARGE TTI

The Charge TTi features a cutting hook, scissors, outside-accessible blades, bit drivers, crimpers and more. But we had to give the TTi its own claim to fame. That's where the comfort-sculpted titanium handles and the S30V® stainless steel clip-point knife come in. Grab a hold of one today and you'll quickly see why the Charge models are the pinnacle of our multi-tool collection.
PN 13-04514 .....$122.75



REBAR

Optimized for strength and features: Needlenose Pliers, Regular Pliers, 154CM Replaceable Wire Cutters,154CM Replaceable Hard-wire Cutters,Electrical Crimper,420HC Knife,420HC Serrated Knife,Wood/Metal File, Saw, Small Screwdriver, Large Screwdriver,Phillips Screwdriver,Awl w/Thread Loop,Ruler (8 inches/20 cm),Bottle Opener, Can Opener, Wire Stripper. P/N 13-12777 ..... $43.50

LEATHERMAN MICRA

Spring-action scissors and personal care features that fit on your key chain are just part of what makes the Micra truly unique. Features: Scissors, Clip-Point Knife, Tweezers, Nail File / Cleaner, Flat Phillips, Screwdriver, Extra Small Screwdriver, Medium Screwdriver, Bottle Opener, Ruler (Inch / Metric), Lanyard Attachment, Length: 2.5 in. / 6.35 cm closed, Weight: 1.75 ounces / 50 grams, Materials: 100% stainless steel (Optimum grade hardness for each tool/blade). Color: Blue P/N 13-07079 ..... $22.75

PS

VISIT OUR WEBSITE TO VIEW OUR COMPLETE LISTING FOR LEATHERMAN TOOLS.

AIRCRAFT SPRUCE WEST
CORONA, CA • (877) 4-SPRUCE

AIRCRAFT SPRUCE EAST
PEACHTREE CITY, GA • (877) 477-7823

Prices Subject to Change Without Notice

PILOT WATCHES

T5 TORGOEN WATCH

24 hour additional hand for dual time military format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. K1 Super Hardened Mineral Crystal. Italian Leather Strap with Heavy Duty Stainless Steel Buckle. Swiss Quartz with 24 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Hands and Indexes Weight - 3.2 oz. (91 gm) Dimensions: Case diameter (w/o crowns and pushers) – 42mm (1 21/32") Case Thickness – 14.6mm (9/16") Crystal Diameter – 38mm (1 1/2") P/N 13-02507 ..... $305.00

TORGOEN T10 SERIES WATCHES

Swiss quartz 3 hand calendar movement. Screw down stainless steel back. Solid high grade stainless steel case

Solid links high grade stainless steel braelet or Italian leather strap. Mineral crystal. Italian leather strap, Stainless Steel, or Polyurethane Band. Water Resistant for 10 ATM (300 feet). Non radioactive long lasting luminescence dial

Dimensions: Case diameter – 45mm Case thickness – 14mm Crystal diameter – 40mm

Brown Leather Band / Brown Face ..... P/N 13-07151 ..... $305.00
Stainless Steel Band / Black Face ..... P/N 13-07152 ..... $375.00
Stainless Steel Band / White Face ..... P/N 13-07153 ..... $375.00
Polyurethane Band / Black Face ..... P/N 13-07154 ..... $305.00

TORGOEN T16 SERIES WATCHES

Swiss quartz chronograph movement. Screw down stainless steel back. Solid high grade stainless steel case. Mineral crystal. Italian leather strap, Stainless Steel, or Polyurethane Band. Water Resistant for 10 ATM (300 feet). Non radioactive long lasting luminescence dial. Dimensions: Case diameter – 45mm Case thickness – 14mm Crystal diameter – 40mm

Black Leather Band / Black Face ..... P/N 13-07167 ..... $490.00
Brown Leather Band / Tan Face ..... P/N 13-07169 ..... $455.00
Stainless Steel Band / Black Face ..... P/N 13-07170 ..... $520.00
Stainless Steel Band / Tan Face ..... P/N 13-07171 ..... $520.00
Polyurethane Band / Black Face ..... P/N 13-07172 ..... $490.00
Polyurethane Band / Carbon Fiber Face ..... P/N 13-07173 ..... $520.00

TORGOEN T15 WATCHES

24 hour additional hand for dual time military format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. K1 Super Hardened Mineral Crystal. Italian Leather Strap with Heavy Duty Stainless Steel Buckle, or Solid Stainless Steel 5 Link Bracelet. Swiss Quartz with 24 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Hands and Indexes. Dimensions: Width w/o crown – 33mm Crystal Diameter – 27mm Thickness – 10mm Weight w/ strap – 1.8 oz. Weight w/ bracelet – 4.4 oz.

Brown Leather Band / Brown Face ..... P/N 13-07163 ..... $285.00
Black Leather Band / White Face ..... P/N 13-07164 ..... $239.00
Black Leather Band / Black Face ..... P/N 13-07165 ..... $239.00
Stainless Steel Band / Black Face ..... P/N 13-07166 ..... $279.00

VISIT OUR WEBSITE FOR OUR COMPLETE TORGOEN PRODUCT LISTING.

TORGOEN T08 SERIES WATCHES

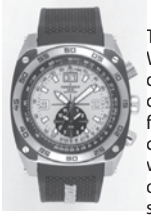
TORGOEN T8 WATCH T08101 - 3 time zones - 12 hour format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. Carbon Fiber dial. Mineral K1 hardened crystal. Italian leather strap with White Thread. Swiss Quartz with 12 hours Dual Time hand Movement by Ronda.. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Dial. Dimensions: Case diameter (w/o crowns and pushers) – 45.5mm (1 3/4") Case Thickness – 13.5mm (1/2") Crystal Diameter – 41mm (1 5/8")

P/N 13-07144 ..... $519.00

TORGOEN T8 WATCH T08102 - 3 time zones - 12 hour format. High Grade Stainless Steel case. Screwed Down Stainless Steel Back. Carbon Fiber dial. Mineral K1 hardened crystal. Italian leather strap with Yellow Thread. Swiss Quartz with 12 hours Dual Time hand Movement by Ronda. Water Resistant for 10 ATM (330 feet). Non Radioactive long lasting Luminescence Dial. Dimensions: Case diameter (w/o crowns and pushers) – 45.5mm (1 3/4") Case Thickness – 13.5mm (1/2") Crystal Diameter – 41mm (1 5/8")

P/N 13-07145 ..... $519.00

T7 TORGOEN FLIGHT COMPUTER WATCHES



P/N 13-05045

Torgoen's line of Flight Computer Watches can be used to calculate time, distance and speed equations. It also can perform a variety of calculations from currency conversions to multiplication and division problems. With the watch you can calculate any conversion of linear nature with a constant ratio such as ounces to grams, kilograms to pounds, miles to kilometers etc.

P/N 13-05048

Description	Part No.	Price
Stainless Steel Black Dial, Band is Black PU, Water Resistance100 meters	13-05044	$720.00
Stainless Steel Black Dial, Stainless Steel Band, Water Resistance100 meters	13-05047	$545.00
Stainless Steel Yellow Dial, Band is Black PU, Water Resistance100 meters	13-05045	$595.00
Stainless Steel Green Dial, Band is Black PU, Water Resistance100 meters	13-05046	$595.00

P/N 13-05051

T8 TORGOEN ZULU TIME WATCHES

- 3 time zones - 12 hour format
- High Grade Stainless Steel case
- Screwed Down Stainless Steel Back
- Mineral K1 hardened crystal
- Solid Links Stainless Steel Bracelet or PU Strap
- Swiss Quartz with 12 hours Dual Time hand Movement by Ronda.
- Water Resistant for 10 ATM (330 feet).
- Non Radioactive long lasting Luminescence Dial
- Weight - 7.4 oz. (210 gm)

P/N 13-05050

Description	Part No.	Price
Stainless Steel Black Dial, Band is Black PU, Water Resistance100 meters	13-05028	$455.00
Stainless Steel Yellow Dial, Band is Black PU, Water Resistance100 meters	13-05051	$395.00
Stainless Steel Yellow Dial, Stainless Steel Band, Water Resistance100 meters	13-05050	$229.00

PS

PILOT WATCHES

SUUNTO WATCHES

Suunto watches are world-renowned for their high quality construction and design. The Suuno brand name means precision and durability - so whatever you use your Suunto watch for, you'll have the peace of mind that comes with wearing an accurate instrument that you can trust under any circumstances. The timeless design of Suunto's watches make them wearable in any casual situation, and because of their moderate size, they are perfectly suitable for both men and woman.

SUUNTO VECTOR WATCHES

An instrument that you cannot leave home when planning any kind of outdoor activity. Features: * Altimeter: Altitude, vertical speed, altitude alarm, logbook, vertical difference measurement, automatic 24h altitude memory, temperature compensation. Logbook capacity 8 kB, recording intervals 20s, 1min, 10min and 60min, with respective times 10h, 12h, 7 days and 10 days * Barometer: Sea level pressure, absolute pressure, pressure difference, pressure trend indicator, 4-day barometric memory, temperature * Compass: Cardinal bearing, North-South arrow, bearing tracking, declination setting * Chronograph: Stopwatch, countdown timer, calendar, three daily alarms * Water resistant to 30 m (100 ft) * Temperature resolution 1°C/1°F * Weather memory 4 days * Temperature range -20°C - +60°C/-5°F - +140°F * Weight 54 g * Operating temperature -20°C - +60°C/-5°F - +140°F * Water resistance 30m/100ft * Storage temperature -30°C - +60°C/-22°F - +140°F

Black/Black ..... P/N 10-19325 ..... $199.00
X-Black/Black with Negative Face ..... P/N 13-04420 ..... $199.00

SUUNTO X-LANDER WATCHES

An accurate altimeter, a complete barometer, a precise electronic compass and a multi-functional sports watch in a one elegant package. Extremely user-friendly and has easy-to-use logic, a large display with big numerals and an electro-luminescent backlight for dimly lit conditions. Non-allergenic aluminum casing, carbon fiber back, a durable mineral crystal glass, and a water resistant fabrik strap

Stainless Case and Negative Face ..... P/N 13-06558 ..... $299.00
Stainless Case and Military Black Face ..... P/N 13-06559 ..... $350.00

SCHEYDEN TRUE AVIATOR STEAM GAUGE WATCHES

True Aviator Series Steam Gauge, precision watches designed by pilots for pilots - engineered to last a lifetime. Features 3 Stand Alone Instruments. Removable Liquid filled Magnetic Compass. Swiss ISA Movement Watch with matte black dial. Removable Digital IFR Timer, includes two SS band links when one or both instruments are removed. Capability Features: Aide Memoire Bi-Directional ATIS Bezel, Sapphire Crystal, White Super Luminova (glows green), Digital Day, Date & Time (UTC/ZULU), Global Airport Identifiers/Time Zones, Dedicated Chronograph Hold & Approach Timer, Wing Root design bracelet, Stainless Steel Case, Bezel & bracelet, Main Case: Water Resistant to 330 feet (10 ATM), Instruments: Water Resistant to 66 Feet (3 ATM).

Natural Stainless Steel ..... P/N 13-14796 ..... $2,992.00
Black Stainless Steel ..... P/N 13-14809 ..... $2,992.00
Gold Stainless Steel ..... P/N 13-14810 ..... $2,992.00

SUUNTO OBSERVER WATCHES

Features: •Altimeter: Altitude, vertical speed, logbook function with quick-access button, memory capacity 99 logs, history memory, alti/baro lock, temperature compensation •Barometer: Sea level pressure, absolute pressure, weather trend indicator, temperature, automatic 4-day barometric memory, alti/baro lock •Compass: Bearing, cardinal bearing, bearing tracking, •North-South arrow, declination setting •Chronograph: Calendar, 3 alarms, dual time, stopwatch with 99 split/lap times Material options: Suunto Observer Sr - stainless steel housing with elastic strap (80 g), Suunto Observer St - stainless steel housing with stainless steel elastomer strap (100 g), Suunto Observer Tt - top-of the-line model - titanium housing with titanium elastomer strap (75 g), Suunto Observer Black - stainless steel case with stainless steel strap, and Suunto Observer St Black - stainless steel case with elastomer straps

Observer TT ..... P/N 13-06552 ..... $500.00
Observer SR ..... P/N 13-06554 ..... $299.00

SUUNTO CORE WATCHES

Suunto Core keeps you informed with an accurate altimeter, barometer, digital thermometer, Weather Trend Indicator and digital compass. The pressure gauge operates in four distinct modes, including an automatic setting that senses your movement or lack thereof, switching between altimeter and barometer accordingly. The compass features a rotating bezel for traditional use, or a one-touch function that allows you to sight, lock and follow a bearing. Daily functions include dual time, date, alarm, sports chronograph and predicted times for sunrise and sunset. * Standard strap style is pictured.

Core Standard Strap Alum./Brown Leather ..... P/N 13-06599 ..... $500.00

SUNNTO ACCESSORIES

Suunto Battery Kit SS0S4700000 ..... P/N SUNBATT $6.95
Sunnto Bike Mount ..... P/N SUN51BIKE $9.85
Sunnto Core Flat Black Strap ..... P/N 13-06615 ..... $49.95
Sunnto Core Flat Orange Strap ..... P/N 13-06616 ..... $69.95

VISIT OUR WEBSITE FOR OUR COMPLETE SUUNTO PRODUCT LISTING.

ABINGDON WATCHES

P/N 13-11392 P/N 13-11394 P/N 13-11393 P/N 13-11396

P/N 13-11395 P/N 13-11398 P/N 13-11399 P/N 13-11397

In this collection, the function of a rotating bezel slide rule comes together with the classic analog face to present a timeless purity of curves and lines. An elegant chronograph.

Description	Part No.	Price
Jackie Dreamy White Watch	13-11392	$413.00
Jackie Sunset Pink Watch	13-11394	$413.00
Jackie Seaplane Green Watch	13-11393	$413.00
Amelia Cloud White Watch	13-11396	$269.00
Amelia Runway Black Watch	13-11395	$269.00
Elise Anthenian Silver Watch	13-11398	$296.00
Elise Egyptian Gold Watch	13-11399	$359.00
Elise Tahitian Two Tone Watch	13-11397	$314.00

PS

ZULU-01 GMT AVIATION WATCH BLACK PVD CASE

Offers ZULU/GMT time at a glance with the ultra easy to read oversized highly visible ZULU/GMT hand. Features: • 316 Stainless Steel Case • Screw Down Crown • Water resistant to 10 ATM / 330ft / 100 m • Swiss Quartz GMT Ronda Movement • Independently Set 24 Hour hand • Date Display • Rotating 24 Hour Bezel • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life..... P/N 13-11502.....$250.00

ZULU-01 GMT AVIATION WATCH STAINLESS STEEL CASE

Offers ZULU/GMT time at a glance with the ultra easy to read oversized highly visible ZULU/GMT hand. Features: • 316 Stainless Steel Case • Screw Down Crown • Water resistant to 10 ATM / 330ft / 100 m • Swiss Quartz GMT Ronda Movement • Independently Set 24 Hour hand • Date Display • Rotating 24 Hour Bezel • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life..... P/N 13-11503.....$249.00

ZULU-O1 CHRONOGRAPH BLACK PVD CASE

Convenient timing features required in a cockpit environment. Great for timing in the hold, time to next way point or on the approach. Features: • 316 Stainless Steel Case • Screw Down Crown • Water resistant to 10 ATM / 330ft / 100 m • Reliable Quartz Miyota OS-20 Chronograph Japanese Movement • Date Display • Rotating Bezel with Minute Counter • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life..... P/N 13-11504.....$300.00

ZULU-O1 CHRONOGRAPH STAINLESS STEEL CASE

Convenient timing features required in a cockpit environment. Great for timing in the hold, time to next way point or on the approach. Features: • 316 Stainless Steel Case • Screw Down Crown • Water resistant to 10 ATM / 330ft / 100 m • Reliable Quartz Miyota OS-20 Chronograph Japanese Movement • Date Display • Rotating Bezel with Minute Counter • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life..... P/N 13-11505.....$300.00

ZULU-05 GMT AVIATION WATCH

The ZULU-05 GMT Aviation Watch has a durable black PVD finish and screw down crown featuring an independently set 24 hour hand. Features: • 316L Stainless Steel Case • Durable Black PVD Finish • Screw Down Crown • Water resistant to 10 ATM / 330 ft / 100 m • Swiss Quartz Ronda 515-24 Movement • Independently Set 24 Hour Hand • Date Display • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life..... P/N 13-11506.....$295.00

ZULU-05 CHRONOGRAPH AVIATION WATCH

The ZULU-05 Chronograph Watch has a durable black PVD finish and screw down crown featuring Swiss Quartz ISA 8172 Quartz Chronograph Movement. Features: • 316L Stainless Steel Case • Durable Black PVD Finish • Screw Down Crown • Water resistant to 10 ATM / 330 ft / 100 m • Swiss Quartz ISA 8172 Quartz Chronograph Movement • Date Display • Day of week Display • Split Time • Seconds Indicator • 60 Minute Totalizer • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life. ..... P/N 13-11507.....$350.00

ZULU-05 GMT / ALARM AVIATION WATCH

The ZULU-05 GMT Aviation Watch has a durable black PVD finish with screw down crown and features an alarm on/off power meter indicator. Features: • 316L Stainless Steel Case • Durable Black PVD Finish • Screw Down Crown • Water resistant to 10 ATM / 330 ft / 100 m • Swiss Quartz ISA 8173 Movement • Independently Set 24 Hour Hand by Stepper Motor • Date Display • Day of week Display • Alarm On/Off Power Meter Indicator • Luminescent Hands and markers • Silicone Rubber Strap • Scratch resistant Mineral Crystal • 2 year Warranty • Approx 3 Year Battery Life..... P/N 13-11508.....$400.00

ZULU-03 ALTIMETER VINTAGE WATCH 9060VW

Aircraft Spruce is proud to introduce the new Zulu-03 Vintage Series of Cockpit Inspired Aviator Watches by Trintec. Due to numerous advances in the watch making industry Trintec is now able to offer unprecedented value and quality in this new line of watches. This watch features an Instrument Styled Casing and Dial which simulate the instruments found in an aircraft cockpit. Features: • Solid 316 Stainless Steel and Black PVD case • 8215 Miyota Japanese Automatic Movement • Scratch Resistant Mineral Crystal • Screw Down Crown • Luminescent Hand & Numerals • Water Resistant to 5 ATMS • Quality Silicone Rubber Strap Specs: Case: 42mm x 42mm • Lug: 22 mm • Thickness: 13mm.

P/N 13-11545.....$369.00

ZULU-03 DIRECTIONAL GYRO VINTAGE WATCH 9062VW

Aircraft Spruce is proud to introduce the new Zulu-03 Vintage Series of Cockpit Inspired Aviator Watches by Trintec. Due to numerous advances in the watch making industry Trintec is now able to offer unprecedented value and quality in this new line of watches. This watch features an Instrument Styled Casing and Dial which simulate the instruments found in an aircraft cockpit. Features: • Solid 316 Stainless Steel and Black PVD case • 8215 Miyota Japanese Automatic Movement • Scratch Resistant Mineral Crystal • Screw Down Crown • Luminescent Hand & Numerals • Water Resistant to 5 ATMS • Quality Silicone Rubber Strap. Specs: • Case: 42mm x 42mm • Lug: 22 mm • Thickness: 13mm.

P/N 13-11546.....$369.00

ZULU-03 CLOCKSTYLE VINTAGE WATCH 9067VW

Aircraft Spruce is proud to introduce the new Zulu-03 Vintage Series of Cockpit Inspired Aviator Watches by Trintec. Due to numerous advances in the watch making industry Trintec is now able to offer unprecedented value and quality in this new line of watches. This watch features an Instrument Styled Casing and Dial which simulate the instruments found in an aircraft cockpit. Features: • Solid 316 Stainless Steel and Black PVD case • 8215 Miyota Japanese Automatic Movement • Scratch Resistant Mineral Crystal • Screw Down Crown • Luminescent Hand & Numerals • Water Resistant to 5 ATMS • Quality Silicone Rubber Strap. Specs: • Case: 42mm x 42mm • Lug: 22 mm • Thickness: 13mm. ..... P/N 13-11547.....$395.00

THE AVIATORS WATCH

The Aviators Watch by Cockpit Company, based on the popular TV series, "The Aviators". Size: 2" Square Face, 1/2" thick. Features: • Brushed Silver Alloy Case • Japan Quartz Movement • Comfortable Silicone Band • 3 ATM Water Resistant • Presented in an Elegant Aluminum Case.

P/N 13-11960..... $62.75

THE ATTITUDE WATCH

The Attitude Watch by Cockpit Company is 3 ATM water resistant and features a comfortable silicone band, Japan quartz movement, and brushed silver alloy case. Presented in an elegant aluminum case.

P/N 13-11961..... $59.95

THE ALTIMETER WATCH

The Altimeter Watch by Cockpit Company is 3 ATM water resistant and features a comfortable silicone band, brushed silver alloy case, Japan quartz movement, and functioning date display. Presented in an elegant aluminum case.

P/N 13-11962..... $62.75

PS

PILOT WATCHES – WIRE MARKERS

VIBRALITE3 VIBRATION WATCHES

Great for Private and Confidential Reminders! Has auto-reset countdown timer. The vibration on your wrist from VibraLITE3 will remind you to do any important thing without annoying others. What's really great is that you don't have to hear the alarm to know that it's signalling you.

This watch is especially nice for pilots, students (taking exams), and of course the deaf and hard of hearing. Since the watch also features an Auto Reload Countdown Timer, it can be the ideal answer for those who need reminding of times to take medicine, scheduled daily activities and more.

With stainless steel band..... P/N 13-02541 ..... $64.50
With leather band ..... P/N 13-02542 ..... $73.75

VIBRALITE 8 VIBRATION WATCHES

8 MODEL VL8A-BK - Black Polyurethane Band .
EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.
USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.
EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..
3 TIME ZONES can be set for reference
STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds
12 OR 24 Hour CLOCK SELECTION
• One Year Warranty.....P/N 13-04892 ..... $75.00

MODEL VL8SL-BK - Genuine black leather band .
EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.
USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.
EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..
3 TIME ZONES can be set for reference
STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds
12 OR 24 Hour CLOCK SELECTION.....P/N 13-04947 ..... $129.95

MODEL VL8SS-GT - Stainless Steel Band with genuine gold trim.
EIGHT VIBRATION ALARMS for variable reminders up to 8 alarms can be preset
COUNTDOWN TIMER with Auto Repeat Feature for interval reminders. set when wanting the same alarm time to repeat automatically each time the countdown timer reaches zero.
USER ALARM OPTIONS: Vibration, Sound, and Hourly Alert ON or OFF choices are set and Secure in separate Option Mode.
EL LIGHT: turns on by a twist of the wrist or the push of a button. Light stays on while any button is pushed, for settings in the dark..
LARGE DIGITS ON THE DISPLAY for easy viewing.
3 TIME ZONES can be set for reference
STOPWATCH counts up to 23 hours, 59 minutes, and 59.99 seconds
12 OR 24 Hour CLOCK SELECTION P/N 13-04948 ..... $169.95

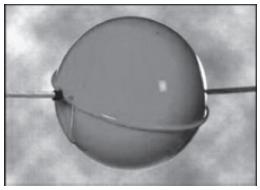
VIBRALITE MINI BLACK

The smallest, high quality, user friendly Vibration Alarm Watch available. Vibration, Audible or Both Set easily in Option Mode. Text on display prompts you. Button Alert feature will confirm your setting quickly. 12 Daily Alarm Settings Preset for variable reminders. 20 second duration alarm with auto off or can be turned off by pushing any button. Countdown Timer with Auto Repeat.

Black With Nylon Band..... P/N 11-11135 ..... $49.95
Purple Flower Band ..... P/N 11-11136 ..... $39.85
Blue W/ Hook And Loop Band..... P/N 11-11137 ..... $46.75
Black & Orange W/ Hook & Loop Band ..... P/N 11-11138 ..... $39.85
Pink W/ Hook & Loop Band ..... P/N 11-11139 ..... $39.95

AIRCRAFT SPRUCE WALL CLOCK

Aircraft Spruce wall clock with a black frame. The quality quartz movement is made in the USA and comes with a lifetime guarantee. Imprint size: approximately 4-1/2" diameter. Attractive presentation box included. .....P/N 13-06209 ..... $7.85



TANA WIRE MARKERS

Tana Wire Markers are large fiberglass balls which can be attached to power lines to warn aircraft of the location of the wires. They meet FAA specifications, feature easy installation and universal attachment, withstand the elements for over 10 years, require no maintenance, do not slip, chafe, oscillate, or cause electrolysis or vibration. Stocked in 9", 12", and 24" sizes. Larger sizes available on request. Color: international orange. Stocked in Tana marker style JX.
Styles SD, KJ, AR, XL, and BN are available by special order. Please Request a Quote.

12" diameter with Tape..... P/N 13-00057 ..... $122.75
20" diameter with Tape..... P/N 13-00058 ..... $169.00
24" diameter with Tape..... P/N 13-00059 ..... $268.00
12" diameter w/o Tape..... P/N 13-00054 ..... $99.85
20" diameter w/o Tape..... P/N 13-00055 ..... $137.75
24" diameter w/o Tape..... P/N 13-00056 ..... $224.95

WIRE MARKERS

CPS-S STANDARD MOUNTING MARKER - The Standard power line Marker is made of ABS plastic & fits wires up to 1" using two neoprene bushings

CSP-EZS RECESSED MOUNTING AREA & CSP-EZC RECESSED MOUNTING AREA W/ CLAMP - The EZ line of Markers is made of ABS plastic & is new & improved with a larger recessed area around the four bolts making it easier to install with linemen gloves. The EZ-S still uses two neoprene bushings & fits wires up to 1". The CSP-EZC comes with an aluminum clamp with stainless steel bolts & fits wires up to 1". Both of these styles use 1" nuts.

CSP-SAR STANDARD MARKER WITH ARMOR ROD - This marker is equipped with two sets of armor rod set into a bracket & can be bolted to the inside or outside of the marker All Markers can be made to fit larger diameter wires.

Diam.	CSP-S		CSP-EZS		CSP-EZC		CSP-SAR	
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
9 inch	-	-	13-06725	$61.95	13-06741	$91.95	13-06748	$103.95
12 inch	-	-	13-06727	$76.95	13-06742	$103.95	13-06749	$125.95
20 inch	13-06731	$91.95	13-06728	$103.95	13-06743	$140.95	13-06750	$166.95
24 inch	13-06737	$170.95	13-06729	$188.95	13-06744	$218.95	13-06751	$240.95
30 inch	13-06738	$205.95	-	-	13-06745	$266.95	13-06752	$294.95
36 inch	13-06739	$269.95	-	-	13-06746	$421.95	13-06753	$443.95

PS

RAY-BAN AVIATION SUNGLASSES

Ray-Ban is the leading brand in the high quality sunwear market segment and by far the best-selling sunwear brand in the world. It is an all American Brand created 1937 with the Aviator style, developed fpr use by the pilots of the U.S Air Force.

Style	Frame	Lens Color	PN	Price
RB 3025	ARISTA	G-15 XLT 62mm	13-04984	$112.80
RB 3025	ARISTA	G-15 XLT 58mm	13-04990	$109.00
RB 3025	BLACK	G-15 XLT 58mm	13-04991	$109.00
RB 3025	BLACK	Polarized Natural Green 58mm	13-04987	$129.00
RB 3025	GUNMETAL	Polarized Natural Green 58mm	13-04989	$129.00
RB 3025	ARISTA	Polarized Natural Green 58mm	13-04985	$128.75

G-15XLT is a Grey Color

Style	Frame	Lens Color	PN	Price
RB 3026	BLACK	G-15 XLT	13-04992	$110.75
RB 3026	ARISTA	G-15 XLT	13-04993	$104.95

G-15XLT is a Grey Color

Style	Frame	Lens Color	PN	Price
RB 3030	ARISTA	G-15 XLT	13-04994	$109.00
RB 3030	BLACK	G-15 XLT	13-04995	$109.00

G-15XLT is a Grey Color

RANDOLPH ENGINEERING

Randolph Engineering has been a leading supplier of military sunglasses to the U.S.Armed Forces since 1982. These sunglasses are the choice of America's Top Gun pilots and NASA astronauts. They meet demanding U.S. military specifications, provide superior glare protection and UV absorption and can be converted to prescription lenses. All of the sunglasses below feature 23K gold plated, hand polished frames and come with a crush resistant case.

AVIATOR – Standard issue for military pilots worldwide. (MIL.SPEC. 25948). These lenses sharpen detail and show colors evenly, making them ideal for flying. Bayonet temples provide optimum fit for use with a headset or helmet.

Size	Lens	Part No.	Price
52mm	Tan	13-05775	$106.75
52mm	Gray	13-00679	$115.75
52mm	Grey/Green	13-00680	$149.00
55mm	Gray	13-00681	$124.75
55mm	Tan	13-00682	$199.00
55mm	Gray/Green	13-00683	$124.75
58mm	Gray	13-00684	$199.00
58mm	Tan	13-00685	$124.75

CONCORDE – The Concorde features the world famous tear drop aviator lens design, monoblock hinge design, skull temple bars, and non-slip silicone nose pads. A very popular sunglass style with lenses that are convertible for prescription lenses.

Size	Lens	Part No.	Price
57mm	Gray	13-00687	$131.75
57mm	Tan	13-00688	$131.75
57mm	Gray/Green	13-00689	$122.75
61mm	Gray	13-00690	$131.75
61mm	Gray/Green	13-00691	$131.95

CREW CHIEF – An updated version of traditional Randolph sunglasses. Crew Chief sunglasses has all the features of the American Pilot above in a slightly more tear drop shape lens design. Excellent for flying & driving.

P/N13-00698.....$149.75

SCHEYDEN CLASSIC FLIP-UP SUNGLASSES

Scheyden patented FlipUp & locking mechanism, allows you to instantly adapt to constantly changing cockpit light conditions with the flip of a finger. Fabricated in titanium i tweighs mere ounces. Offers 100% UVA & UVB protection. , and crystal clear, distortion free vision. Backside Triple Anti-Reflective coating acts to diffuse ambient light from behind. Includes a Deluxe Case Pack with a luxurious microfiber cleaning cloth and glasses bag along with an aluminum hard case and leather flip sport case. Lifetime warranty on all titanium frames and the best lens replacement warranty in the eyewear industry.

Model	Lens	Frame	Part No.	Price
El Capitan	High Contrast Bronze CR39	Natural Titanium	13-06947	$399.00
El Capitan	Neutral Grey CR39	Natural Titanium	13-06948	$399.00
Avalon	High Contrast Bronze CR39	Natural Titanium	13-06949	$399.00
Avalon	Neutral Grey CR39	Natural Titanium	13-06951	$399.00
Sonoma	High Contrast Bronze CR39	Natural Titanium	13-06952	$399.00
Sonoma	Neutral Grey CR39	Natural Titanium	13-06953	$399.00
Avalon Small	High Contrast Bronze CR39	Natural Titanium	13-06957	$399.00
Avalon Small	Neutral Grey CR39	Natural Titanium	13-06961	$399.00

Lenses are non-polarized as standard. This ensures that there is no distortion or "blacking-out" of glass cockpit instruments or LCD screens. Polarized lenses are available.

SCHEYDEN DUAL RX SUNGLASSES

The ability to instantly & effortlessly adapt to changing light conditions while keeping your prescription lenses in place. Supplied with a lens template which is all your local optician needs to fabricate your prescription lenses. Comes standard with the Deluxe Case Pack. Frame colors below are Natural Titanium. See photos above for frame styles.

Model	Lens	Part No.	Price
El Capitan	High Contrast Bronze CR39	13-06962	$449.00
El Capitan	Neutral Grey CR39	13-06965	$449.00
Avalon	High Contrast Bronze CR39	13-06966	$449.00
Avalon	Neutral Grey CR39	13-06968	$449.00
Sonoma	High Contrast Bronze CR39	13-06970	$445.00
Avalon Small	High Contrast Bronze CR39	13-06975	$449.00
Avalon Small	Neutral Grey CR39	13-06977	$449.00

SCHEYDEN FIXED GEAR SUNGLASSES

The thin titanium ear-pieces fit comfortably under a headset and are small enough that they won't interfere with the ANR seal. Fixed Gear Mavericks are the choice of the US Air Force Thunderbirds. High Contrast Light Bronze lens offers 100% UVA & UVB protection and is recommended for low light conditions.

Model	Frame	Lens	Part No.	Price
Mustang	Natural Titanium	Bronze Polarized	13-11479	$349.00
Mustang	Natural Titanium	Bronze Non-Polarized	13-11478	$309.00
Mustang	Natural Titanium	Gray Polarized	13-11481	$349.00
Mustang	Natural Titanium	Gray Non-Polarized	13-11480	$309.00
Albatross	Natural Titanium	Bronze Polarized	13-11483	$349.00
Albatross	Natural Titanium	Bronze Non-Polarized	13-11482	$309.00
Albatross	Natural Titanium	Gray Polarized	13-11476	$349.00
Albatross	Natural Titanium	Gray Non-Polarized	13-11477	$309.00

Model	Frame	Lens	Part No.	Price
Panorama	Gloss Black	High Contrast Bronze CR39	13-06980	$259.00
Panorama	Gloss Black	Neutral Grey CR39	13-06983	$259.00
Panorama	Havana Tortoise	High Contrast Bronze CR39	13-06984	$259.00
Panorama	Havana Tortoise	Neutral Grey CR39	13-06986	$259.00
Jet-A	Gloss Black	High Contrast Bronze CR39	13-06987	$259.00
Jet-A	Gloss Black	Neutral Grey CR39	13-06988	$259.00
Jet-A	Havana Tortoise	High Contrast Bronze CR39	13-06989	$259.00
Jet-A	Havana Tortoise	Neutral Grey CR39	13-06990	$259.00
Revelstoke	Gloss Black	High Contrast Bronze CR39	13-06991	$259.00
Revelstoke	Gloss Black	Neutral Grey CR39	13-06992	$259.00
Revelstoke	Havana Tortoise	High Contrast Bronze CR39	13-06993	$259.00
Revelstoke	Havana Tortoise	Neutral Grey CR39	13-06994	$259.00

SCHEYDEN FIXED HYBRID COMPOSITE SUNGLASSES

Stylish composite frames have been combined with HiNiHg (High Nickel Silver) temples enabling full wrap frames that fit comfortably under a headset without disturbing the ANR seal. The frames will easily slide down the wearers nose and back up again to adapt to changing light conditions with the push of a finger. Scheyden Deluxe Case Pack is included.

Part No.	Description	Price
13-06989	Jet-A Bronze Havana	$259.00
13-06990	Jet-A Gray Havana	$259.00
13-06987	Jet-A Bronze CR39	$259.00
13-06988	Jet-A Gray CR39	$259.00
13-06984	Panorama Bronze Havana	$259.00
13-06986	Panorama Gray Havana	$259.00
13-06980	Panorama Bronze CR39	$259.00
13-06983	Panorama Gray CR39	$259.00
13-06993	RevelStroke Bronze Havana	$259.00
13-06994	RevelStroke Gray Havana	$259.00
13-06991	RevelStroke Bronze CR39	$259.00
13-06992	RevelStroke Gray CR39	$259.00

PS

SUNGLASSES

RA VISION HIGH PERFORMANCE SUNGLASSES

These high performance sunglasses are specifically designed for use with helmets and headsets. The Frame: The frames are made of lightweight and flexible titanium metal that easily slide thru the ear pad of the helmet or headset. The frames contour the head and allows for the seal of noise canceling earpieces to be maintained. The "wrap" or curvature of the frames and lens allows sun protection for the wearer's peripheral vision as well as forward facing. The Lens: The lens is made of a revolutionary Trivex® material that features optical qualities similar to glass and surpasses the light weight and scratch resistance of polycarbonate lenses while providing 100% protection against UVA and UVB rays.

Gray Lens ..... P/N 13-11671 ..... **$99.00**
Brown Lens ..... P/N 13-09660 ..... **$99.00**

LIGHTSPEED AVIATOR SUNGLASSES

Lightspeed Aviator Sunglasses are the only aviator glasses designed exclusively to fit perfectly with your Lightspeed headset. Designed and made in Italy, the lightweight frames are made with the same flexible spring steel as the Lightspeed Zulu headband. The sleek low-profile design fits gently against your head assuring a solid seal with your Lightspeed headset. And the removable anti-glare, non-polarized flip shaded lenses allow you to quickly transition from un-obscured sunlight to reading maps in a dark cockpit. Hard carrying case, soft fabric bag and cleaning cloth included.

P/N 13-10005 ..... **$350.00**

BELT LOOP EYE GLASS CASE

Safe and secure way to make sure your glasses, cell phones and other items are always available. The case has a pen pocket and accessory strap to attach a pager, a small flashlight or clip item. 1000 dernier cordura exterior, soft padded durable lining. Black color. P/N 13-00699 ..... **$12.95**

AMERICAN OPTICAL SUNGLASSES

Performance-tested sunglasses with classic aviator styling. The Original Pilot Sunglass® has been a favorite of US military pilots for more than 40 years.
Engineered to rigid military specifications and issued to millions of US soldiers, sailors, marines and airmen since 1958.
The rugged and sturdy structure and high quality finishing of the steel alloy frame coupled with distortion free, toughened and polished True Color® glass lens have made the AO Flight Gear® Collection the standard bearer of all fine military sunglasses.

ORIGINAL PILOT (SQUARED)

52MM..... P/N 13-03212 ..... **$53.75**

GENERAL (OVAL)

52MM..... P/N 13-03214 ... **$58.95**
58MM..... P/N 13-03215 ... **$59.75**

AV-SUN SUNGLASSES

Sunglasses for pilots with excellent vision. Feature gradient tint with UV protection, the same tint as used by U.S. fighter pilots! Allow you to see air traffic under bright conditions outside and maps and instruments under low light conditions inside.

AV-SUN 180

P/N 13-12763 . **$139.95**

AV-SUN GOLD AVIATOR

P/N 13-12755 .... **$59.95**

AV-SUN GOLD PILOT

P/N 13-12756 ... **$59.95**

AV-SUN TITANIUM CLASSIC

P/N 13-12758 ... **$79.95**

AV-SUN TITANIUM FLYER

P/N 13-12759 .... **$79.95**

AV-SUN TITANIUM AVIATOR

P/N 13-12760 ... **$79.95**

LIVE EYEWEAR COCOONS SUNGLASSES

Cocoons were designed to fit over glasses; however our smaller styles make them extremely popular as solo sunglasses. Cocoons feature PolarTx® polarized lenses to eliminate harsh glare, allowing your eyes to remain focused on the task at hand. The optical grade lenses and side shields precisely regulate light transmission, reducing eye fatigue and strain. They block 100% of damaging UV A&B light, providing 40% more protection than conventional sunglasses. Cocoons offer a virtually unbreakable frame with soft touch finish, adjustable temples, lifetime warranty, 3 contemporary shapes and sizes, and are accessorized with floating neoprene case and lens cloth. Color: Black.

Sizing Guide: Measure the width (w) and height (h) of your prescription eyewear to determine which Cocoons sunglasses will fit best.

SLIMLINE (MEDIUM)

RX frame sizes: up to 5-3/8"w X 1-5/8"
P/N 13-02967 ..... **$49.95**

PIILOT (LARGE)

RX frame sizes: up to 5-3/8"w X 1-5/8"
P/N 13-02968 ..... **$49.95**

AVIATOR (EXTRA LARGE)

RX frame sizes: up to 5-3/8"w X 1-5/8"
P/N 13-02969 ..... **$49.95**

WIDELINE(MEDIUM LARGE)

RX frame sizes: up to 5-5/8"w X 1-3/8"
P/N 13-04719 ..... **$49.95**

MINI SLIM(MEDIUM SMALL)

RX frame sizes: up to 4-7/8"w X 1-3/8"
P/N 13-04720 ..... **$49.95**

STREAM LINE(SMALL)

RX frame sizes: up to 4-7/8"w X 1-3/8"
P/N 13-04721 ..... **$49.95**

COCOONS OVER X - Cocoons are the only sunglasses in the world that will completely isolate your eyes from the elements. The collection features patented designs that deliver 360° of Advanced UV Protection and are available in a range of styles and sizes that can be worn over prescription eyewear or as conventional sunglasses. After wearing Cocoons for a short period of time, your eyes will begin to relax. The polarized UV400 front and side lenses treat incoming light, eliminating distracting glare and allowing you to focus on the task at hand. The patented frames protect your eyes from all angles, blocking sunlight, UV, glare, wind, rain and airborne debris. C427C Features: • Polarized UV400 • Scratch Resistant • Flex2fit® Temples • Soft Touch Finish • 360° of UV Protection • Ultra Lightweight • Case and Cloth • Lifetime Warranty P/N 13-05550 ..... **$49.95**

VISTANA OVER X - Vistana's proprietary lens system delivers a distortion-free, panoramic line of sight not available in any other over prescription sunglass. With traditional designs, the wearer will experience a gap in peripheral vision when scanning from the front to the sides due to a section of frame that separates the front and side lenses. Vistana's patented designs use continuous full wrap lenses that eliminate the section frame between the front and side lenses, creating a more open and uninterrupted view. Encourage your customer a traditional over prescription sunglass to the evolutionary Vistana design and they will immediately notice the difference in both performance and style. W412G Features: • Polarized UV400 • Scratch Resistant • Flex2fit® Temples • Dynamic Base Technology • Ultra Lightweight • Case and Cloth • Lifetime Warranty P/N 13-05551 ..... **$49.95**

COCOONS QUALITY IN A FLIP-UP

World renowned Cocoons quality is now available in the Cocoons Flip-Up sunwear collection. The Polaré lens system delivers enhanced visual acuity with a choice of polarized gray, amber or copper. Each clip includes a protective case and is backed by the Live Eyewear limited lifetime warranty. LF40

Copper..... P/N 13-05552 ..... **$17.95**
Gray..... P/N 13-11346 ..... **$17.95**
Amber..... P/N 13-11347 ..... **$17.95**
Yellow..... P/N 13-11348 ..... **$21.95**

SEE OUR WEBSITE FOR COCOONS 3D & PHOTOCHROMIC AVIATOR SUNGLASSES

PS

VEDALOHD™ PERFORMANCE SUNGLASSES

High-Definition Lens Technology (HDL-3C™), built into new sunglasses offer improved sight definition for pilots, using color, clarity and comfort. These lenses filter the visible spectrum to improve color contrasts; decentered lenses increase visibility and eliminate distortion; visual health is improved and eye fatigue is reduced thanks to lightweight frames. Visibility is said to be increased through tri-stimulus color contrast enhancing techniques; other color tinting techniques improve color simulation but only improves one basic color type in the color spectrum.

These non-polarized (important for pilots!) lenses come in two lens types: rose (for low light conditions), and smoke (for bright light conditions). The sunglasses are very lightweight and comfortable. We offer a 30-day money back guarantee if you're not satisfied. Several choices for frames are available.

FRAME STYLES

ROSSO2 (HINGED)
Astonishing light Weight

AZZURRO2
Fashion Rectangle

ARGENTO2
Ultra Light Aviator

CARBONE
Teardrop Aviator

VERONA
Ultra Light

ROMA
Contemporary Aviator

BERGAMO
Flush-fitting, wrap-around

Description	Part No.	Price
Rosso2 Ultra Lite Frames Smoke	13-04022	$189.00
Rosso2 Ultra Lite Frames Rose	13-06102	$189.00
Azzurro2 Ultra Lite Frames Smoke	13-04026	$189.00
Azzurro2 Ultra Lite Frames Rose	13-04027	$189.00
Argento2 Ultra Lite Frames Rose	13-04028	$195.00
Argento2 Ultra Lite Frames Smoke	13-04029	$189.00
Carbone Rose	14-00993	$189.00
Carbone Smoke	14-00994	$179.00
Verona Ultra Lite Frames Rose	14-01005	$139.00
Verona Ultra Lite Frames Smoke	14-01006	$139.00
Roma Ultra Lite Frames Rose	14-01002	$139.00

ROTHCO G.I. TYPE PILOT SUNGLASSES

P/N 14-02118

Carries CE certified symbol on package. Metal-lens: hard coating acrylic. 58mm lenses. Frame: nickel silver finish: tempering, grounded, gold plating, clear plastic tip. Made to mil-std 105. Impact resistant. UV 400 protection. Bayonet temples. With black case. Available in: smoke lens with gold frame, smoke lens with chrome frame, smoke lens with black frame, mirror lens with gold frame, mirror lens with chrome frame and brown lens with gold frame

Color	Part No.	Price	Color	Part No.	Price
Chrome/Smoke	14-02123	$9.99	Black/Smoke	14-02120	$9.99
Gold/Brown	14-02118	$9.99	Gold/Smoke	14-02119	$9.99
Chrome/Mirror	14-02122	$9.99	Gold/Mirror	14-02121	$9.99

FLYING EYES SUNGLASSES

Flying Eyes are designed to be the most comfortable glasses you'll ever wear with a headset. The unique strap system lies flat against your head for virtually unnoticeable wear, even on your longest flight. The flat, flexible strap eliminates noise leaks in the seal of your noise-canceling headset. Plus, the included standard temples make them great outside-the-cockpit glasses, too!

P/N 13-12579..... $169.00

SERENGETI AVIATOR SUNGLASSES

Serengeti Aviators protect your vision while eliminating glare and sharpening details better than other sunglasses. Cloud boundaries are more easily delineated and oncoming traffic is more visible. Unique photochromic spectral controls improve your ability to see in marginal VFR and IFR conditions. In bright sunlight, you'll see the instruments better and ghost images will be eliminated from the cockpit. Wear them late in the day or at sunset to preserve your night vision.

LARGE AVIATOR SUNGLASSES- Base Curve: 6; Temple Length: 140mm. Lens Size: 61.75 x 55.5 x 68mm, Dbl 10.5mm Black

P/N 2121 .....$109.00

AERIAL SUNGLASSES - The navigator-inspired Aerial is light on ounces, but not on style thanks to frames crafted with titanium, which are accented by distinctive bayonet-style temples.

Frame	Lens	Part No.	Price
Shiny Gunmetal	Drivers Gradient	13-15074	$249.00
Satin Black	555NM	13-15075	$249.00
Satin Black	Drivers Gradient	13-15076	$249.00

SORTIE SUNGLASSES - Sortie is a classic aviator sunglass. Its frame is made with extremely light and incredibly strong Titanium, a material widely used in aeronautical applications. Ultra-Light glass lenses and highly adjustable nose pads deliver the performance and comfort pilots demand and anybody else can appreciate.

Frame	Lens	Part No.	Price
Satin Black	Drivers Gradient	13-15077	$249.00
Satin Black	555NM	13-15078	$249.00
Shiny Silver	555NM	13-15079	$249.00

VOLTERRA SUNGLASSES - Classic design meets a modern twist with the Volterra. Titanium frames allow for unmatched durability with specialized nose pads for a truly customized fit. The ultra light glass technology provides impeccable visual images. All Serengeti lenses offer the latest in photochromic technology, which constantly lightens and darkens throughout the day to ensure you see every detail.

P/N 13-15080 .....$249.00

DANTE SUNGLASSES - Uniquely fashioned temples distinguish Dante from the crowd. Wire-flex technology automatically adapts for an impeccable fit. All Serengeti lenses offer the latest in photochromic technology, which constantly lightens and darkens throughout the day to ensure you see every detail.

Frame	Lens	Part No.	Price
Shiny Gunmetal	Drivers Gradient	13-15083	$189.00
Shiny Espresso	Drivers Gradient	13-15353	$184.75

NORCIA SUNGLASSES - Designed to keep you comfortable anywhere, the Norcia integrates the best style cues with the best comfort innovations. Double injected stainless steel and elastomer temples and adjustable nose pads provide an ideal fit for a broad range of faces.

P/N 13-15088 .....$239.00

SAN REMO SUNGLASSES - Demanding the best in function and style the San Remo utilize classic designs with a modern twist. Titanium and acetate frames allow for maximum adjustability and unmatched durability. The ultra light lens technology provides superior optical acuity. All Serengeti lenses offer the latest in photochromic technology, which constantly lightens and darkens throughout the day to ensure you see every detail.

Frame	Lens	Part No.	Price
Shiny Hematite	Drivers Gradient	13-15081	$249.00
Shiny Hematite	555NM	13-15082	$249.00

BRANDO SUNGLASSES - An exciting reinterpretation of the classic Aviator with Serengeti's exclusive Wire-Flex frame design in a velvet soft finish rests securely and comfortable on your face. Serengeti's signature photochromic technology, high-definition Spectral Control® and with premium polarization options delivers the clearest high-definition view you've ever experienced.

Frame	Lens	Part No.	Price
Satin Black	Drivers Gradient	13-15084	$189.00
Satin Black	555NM	13-15085	$189.00
Shiny Dark Gunmetal	Drivers Gradient	13-15086	$189.00

PS

FLIGHT JACKETS

Classic. Authentic. Quality. Established in 1959 as a defense contractor for the US Government, Alpha Industries remains one of the largest manufacturers of cold weather outerwear. For over 35 years, Alpha Industries has continuously supplied the US Government and military forces throughout the world. Alpha is now recognized as the original and leading manufacturer of authentic military-inspired outerwear. Some jackets are made in the USA and some are imported.

TO ORDER FLIGHT JACKETS: Choose jacket style and color desired and order by basic part number shown. Complete the part number with size by adding -1 (Small), -2 (Medium), -3(Large), -4 (X Large), or -5 (XX Large).

MA-1 INTERMEDIATE FLIGHT JACKET

The most popular flying jacket in the world, supplied by Alpha Industries to the U.S. Military for over 40 years. 100% nylon flight satin outer shell with nylon flight lining and polyester batting interlining for warmth. Front closure storm flap. Knit collar, waistband and cuffs. Combination utility pocket on sleeve. Pilot's MA-1 reverses to high visibility Indian Orange for use in emergencies. Colors: Black, Navy, Sage Replica Gray, Titanium, Stratos.

Black ..... P/N 13-00544 ..... $99.85
Navy ..... P/N 13-00546 ..... $99.85
Sage ..... P/N 13-00547 ..... $99.85

LEATHER MA-1 FLIGHT JACKET

Premium cowhide leather winter-weight flying jacket styled as the classic MA-1. Quilted lining with polyester interlining. Snap closure front flap pockets and inside pocket. Antiquated brass zippers and snaps. Leather zip pull, embossed logo. Wool ribbed waistband, cuffs and collar. Colors: Black and Brown

Black ..... P/N 13-00552 ..... $288.95
Brown ..... P/N 13-00553 ..... $279.00

CWU - 45/P FLIGHT JACKET

A nylon version of the U.S. Air Force current issue flight jacket. 100% nylon flight satin outer shell. Fully lined with quilted flight nylon and polyester fill. Water repellent. Knit cuffs and wristband. Storm flap. Two fully-lined cargo pockets and combination utility pocket on sleeve. Removable Velcro logo patch.

Black ..... P/N 13-00559 ..... $99.75
Gun Metal Grey ..... P/N 13-09482 ..... $98.00
Teal ..... P/N 13-00569 ..... $99.75
Replica Blue ..... P/N 13-05585 ..... $98.00
Airforce Green ..... P/N 13-00572 ..... $98.75

LEATHER CWU-45/P FLIGHT JACKET

Premium cowhide leather winter-weight flying jacket styled as the classic U.S. Air Force 45/P. Quilted lining with polyester interlining. Velcro closure front flap cargo pockets and inside pocket with snap fastener. Antiquated brass front zipper. Leather zip pull. Wool ribbed waistband and cuffs. Colors: Black and Brown

Black ..... P/N 13-00555 ..... $279.00
Brown ..... P/N 13-00556 ..... $283.95

CHILDREN'S JACKETS

CHILDRENS MA-1 JACKETS WITH PATCHES - This is a well made reproduction of the famous MA-1 green nylon quilted. Same patches as our childrens bomber jacket.

Description	Size	Part No.	Price	Description	Size	Part No.	Price	Description	Size	Part No.	Price
MA1 Toddler	Small	13-06443	$37.95	MA1 Youth	Small	13-06437	$39.85	MA1 Boys	Small	13-06439	$38.95
MA1 Toddler	Medium	13-06442	$37.50	MA1 Youth	Medium	13-06436	$42.95	MA1 Boys	Medium	13-06438	$36.85
MA1 Toddler	Large	13-06444	$39.75	MA1 Youth	Large	13-06440	$41.50	MA1 Boys	Large	13-06441	$39.80

YOUTH BOMBER JACKETS - These are a Flightline original. They're a reproduction of a classic bomber, complete with simulated fleece collar. They are sturdily made with many special touches that make it unique, such as an airplane zipper pull, authentic aviation patches & colorful graphic map liner.

Description	Size	Part No.	Price	Description	Size	Part No.	Price	Description	Size	Part No.	Price
Bomber Toddler	Small	13-06432	$37.95	Bomber Boys	Small	13-06429	$38.95	Bomber Youth	Small	13-06427	$39.95
Bomber Toddler	Medium	13-06428	$37.95	Bomber Boys	Medium	13-06430	$38.95	Bomber Youth	Medium	13-06431	$39.95
Bomber Toddler	Large	13-06433	$37.95	Bomber Boys	Large	13-06435	$38.95	Bomber Youth	Large	13-06434	$39.95

CHILDRENS MA-1 JACKETS WITH PATCHES AND A HOOD - This is a well made reproduction of the famous MA-1 green nylon quilted childrens jackets with patches and a hood. Same as our childrens bomber jacket but with faux fur trimmed hood and a velcro closure at top.

Description	Size	Part No.	Price	Description	Size	Part No.	Price	Description	Size	Part No.	Price
MA1 Toddler	Small	13-06447	$32.95	MA1 Youth	Small	13-06448	$39.95	MA1 Boy	Small	13-06454	$33.85
MA1 Toddler	Medium	13-06446	$32.95	MA1 Youth	Medium	13-06453	$36.50	MA1 Boy	Medium	13-06451	$34.85
MA1 Toddler	Large	13-06445	$37.95	MA1 Youth	Large	13-06452	$43.00	MA1 Boy	Large	13-06449	$34.85

PS

FLIGHT JACKETS

ULTRA FORCE BLACK MA-1 FLIGHT JACKET

This Black MA-1 Flight Jacket features a fully reversible Orange lining, ribbed collar, 100% Nylon water repellent outer shell, Poly fiberfill lining and 4 front slash pockets. Rothco's Flight Jacket has an extra full cut. Sizes and colors do vary.

X-Small	P/N 14-03239	$32.49
Small	P/N 14-03240	$32.49
Medium	P/N 14-03241	$32.49
Large	P/N 14-03242	$32.49
X-Large	P/N 14-03243	$32.49
XX-Large	P/N 14-03244	$34.49
XXX-Large	P/N 14-03245	$35.99

G-1 LEATHER FLIGHT JACKET

Reproduction of the coveted naval leather flying jacket featuring a genuine mouton fur collar. Premium goatskin leather. Bi-swing back for free range of movement. Underarm gussets. Knit waistband and cuffs. Legendary Pilot Jacket.

Black Small	P/N 13-14998-S	$325.00
Black Medium	P/N 13-14988-M	$325.00
Black Large	P/N 13-14988-L	$325.00
Black X-Large	P/N 13-14988-XL	$325.00
Brown Small	P/N 13-15004-S	$325.00
Brown Medium	P/N 13-15004-M	$325.00
Brown Large	P/N 13-15004-L	$325.00
Brown X-Large	P/N 13-15004-XL	$325.00

CWU PILOT X FLIGHTJACKET

The CWU Pilot jacket boasts the same silhouette/trims of the original CWU 45/P. Stay cozy and dry with the 100% nylon, water resistant, outer shell and quilted nylon linert. Keep your belongings secure in the signature Alpha utility/pencil pocket and battle the elements with the CWU Pilot jacket's lined cargo pockets/front zipper closure with storm flap. Color: Sage Brown.

Small	P/N 13-15013-S	$130.75
Medium	P/N 13-15013-M	$142.00
Large	P/N 13-15013-L	$130.75
X-Large	P/N 13-15013-XL	$130.75

NOMEX 45/P-36/P MIL-SPEC FLIGHT JACKET

Made in USA, this true Mil-Spec flight jacket currently issued to U.S. Air Force pilots. Made from fire-resistant Nomex material, this jacket is engineered to exceed incredibly tight tolerances and military requirements. Color: Sage. NOMEX fire resistant fabric, zipper tape, knit cuffs and waistband. Tonal Velcro patch. Front zipper closure with storm flap. Fully lined double-stitched cargo pockets with Velcro closure. Made to military specification.

Small	P/N 13-15007-S	$557.00
Medium	P/N 13-15007-M	$557.00
Large	P/N 13-15007-L	$557.00
X-Large	P/N 13-15007-XL	$557.00

MA-1 BLOOD CHIT FLIGHT JACKET

The MA-1 BLOOD CHIT jacket is one of a kind to be worn with pride.

Alpha's MA-1 flight jacket with "Blood Chit" sewn on the inside lining was a type of flag that contained a message in several languages identifying an airman as a U.S. Aviator if they were shot down, to aid the airman in avoiding capture and in being returned safely to U.S. Forces. A reward was offered for this assistance.

This is a classic flight jacket made for the military for over 40 years and features nylon flight satin outer shell with reversible orange nylon lining with the Blood Chit sewn into it, front closure storm flap, knitted collar, cuffs, and waistband and Alpha signature zippered utility/pencil pocket. If you are looking for a quality jacket that isn't just like the one everyone else has, then this is certainly worthy of your consideration. Just think of all the conversations you can have with this jacket. Color: Sage.

Small	P/N 13-15005-S	$125.00
Medium	P/N 13-15005-M	$125.00
Large	P/N 13-15005-L	$125.00
X-Large	P/N 13-15005-XL	$125.00

B-15 FLIGHT JACKET

The B-15 is a classic flight jacket made tough to battle the harsh elements. Features a nylon shell and removable synthetic mouton fur collar. The Alpha B-15 features button tabs once used by pilots to connect oxygen masks and headset wires. Water repellent 100% nylon flight satin outer shell and polyester filled lining. Front zipper closure with storm flap. Knit cuffs and waistband. Alpha signature utility/pencil pocket Color: Black.

Small	P/N 13-15006-S	$140.00
Medium	P/N 13-15006-M	$140.00
Large	P/N 13-15006-L	$140.00
X-Large	P/N 13-15006-XL	$140.00

U.S. NAVY PEA COAT

Whether you want to dress up your look or just stay comfortably warm, our US Navy pea coat is your best bet. This Navy pea coat is made of a blend including 75% wool Melton. Our wool pea coat keeps you cozy with its quilted nylon lining and a flip-up lapel. Two long, vertical pockets on the front and two inside pockets ensure that you can bring along whatever you need.

Navy Blue Small	P/N 13-15014-S	$160.00
Navy Blue Medium	P/N 13-15014-M	$168.75
Navy Blue Large	P/N 13-15014-L	$160.00
Navy Blue X-Large	P/N 13-15014-XL	$160.00
Black Small	P/N 13-15015-S	$160.00
Black Medium	P/N 13-15015-M	$160.00
Black Large	P/N 13-15015-L	$160.00
Black X-Large	P/N 13-15015-XL	$160.00

PS

AERO SQUADRON LEATHER FLIGHT JACKET

Color: Brown Antique Lamb

Small	P/N 13-07208	$389.00
Medium	P/N 13-07209	$389.00
Large	P/N 13-07210	$373.95
XL	P/N 13-07211	$332.95
XXL	P/N 13-07212	$389.00

APPAREL – PROP CLOCKS

AIRCRAFT SPRUCE T-SHIRTS

Top quality 100% cotton shirt available in white or navy blue. These shirts feature Aircraft Spruce logo on the back and a small Aircraft Spruce Logo on the front left chest. A great looking shirt that will last for years. Order size by part no.:

Size	White	Price	Navy	Price
Small	13-02810	$8.95	13-02047	$8.95
Med.	13-02910	$8.95	13-02048	$8.95
Large	13-03010	$8.95	13-02049	$8.95
XL	13-03110	$8.95	13-02050	$8.95
XXL	13-03120	$8.95	13-02051	$8.95

SPRUCE POLO SHIRTS

SPRUCE POLO SHIRT - These are the same high quality polo shirts worn by the Aircraft Spruce Staff at Oshkosh, Sun 'N Fun and other airshows. Made from Dry-Excel™ close-hole Micromesh, polyester knit, with a fine gauge rib-trim collar. Three button front, open hem sleeves, and split side welts make these polos great for everyone. These polos feature the Aircraft Spruce logo on the left chest. Machine washable.

MEN'S BLACK		
Size	Part No.	Price
Small	13-04729	$32.90
Med.	13-04731	$32.90
Large.	13-04732	$32.90
X-LRG	13-04733	$32.90
2XLG	13-04734	$32.90
MEN'S WHITE		
Size	PN	Price
Small	13-04730	$29.95
Med.	13-01985	$29.95
Large.	13-01982	$29.95
XLRG	13-01979	$29.95
2XLG	13-01976	$31.50

MEN'S LIGHT BLUE		
Size	PN	Price
Small	13-04728	$29.95
Med.	13-01986	$29.95
Large.	13-01983	$29.95
XLRG	13-01980	$29.95
2XLG	13-01977	$29.95
MEN'S NAVY BLUE		
Size	PN	Price
Large.	13-01981	$29.95
XLRG	13-01978	$29.95

AIRCRAFT SPRUCE PATCH

This is an embroidered patch, oval in shape, and approximately 3-1/2", colors are Red/White/Blue.

P/N 13-02709 ..... $19.00

ARROWPROP DECORATOR PROP CLOCKS

Quartz Clock

Weather Station

Choose from:
Quartz Clock (Q)
Weather Station (W)
Weather station contains a thermometer, hygrometer, & barometer in 1 instrument.

PIPER CUB PROPELLERS

Laminated hardwood reproduction of the propeller used on the Piper Cub airplane. With a high gloss finish, red tips, and cub decals. Quartz Clock Face (Q) or Weather Station Clock Face (W).

52" Prop w/Q..... 13-32170-Q..... $229.95 65" Prop w/Q ..... 13-32171-Q $309.00
52" Prop w/W..... 13-32170-W ..... $275.95 65" Prop w/W ..... 13-32171-W..... $339.00

AIRCRAFT PROPELLER

Beautiful reproduction of an early day aircraft propeller like those used on the Piper Cub, Aeronca, Taylorcraft and others. Constructed of laminated hardwood with clear finish, red tips and simulated brass tipping on the propeller blades. Quartz Clock (Q) or Weather Station (W).

52" Prop w/Q..... 13-32175-Q ..... $368.00 65" Prop w/Q 13-32176-Q$349.00
52" Prop w/W..... 13-32175-W..... $339.00 65" Prop w/W 13-32176-W $441.00

AIRCRAFT SPRUCE WINDBREAKERS

These high quality, golf style pullover windbreakers are perfect for those chilly days on the course or at the airport. Color: Navy blue w/khaki trim and "Aircraft Spruce & Specialty Co" on left chest.

Small ..... P/N 13-12018 ..... $39.95
Medium ..... P/N 13-01987 ..... $39.95
Large ..... P/N 13-01988 ..... $39.95
X-Large ..... P/N 13-01989 ..... $39.95
2XL ..... P/N 13-01990 ..... $29.95

AIRCRAFT SPRUCE CAPS

Our heavyweight 100% brushed cotton hat is perfect for aviators. Unlike other caps, ours features a no-button construction for comfort while wearing your headset. Low profile cap has aircraft design on front panel and Aircraft Spruce logo on back. A great looking top quality cap Stretch fit, one size fits all.

Black ..... P/N 13-03895 ..... $17.95
Navy ..... P/N 13-11715 ..... $17.95

AIRCRAFT SPRUCE ADJUSTABLE CAPS

The new adjustable cotton hats from Aircraft Spruce are top quality and affordable. The Aircraft Spruce logo is embroidered into the front of the hat and the back velcro straps allow them to be adjusted to any size head.

Navy Blue ..... P/N 13-14769 ..... $9.95
Grey ..... P/N 13-14770 ..... $9.95

AIRCRAFT SPRUCE WATER BOTTLE

BPA free 20 oz. reusable aluminum Aircraft Spruce water Bottle. Features a leak proof lid and a clip to conveniently attach the bottle to a backpack or belt loop. Size: 8 1/2" x 2 3/4 diameter ..... P/N 13-11326 ..... $4.95

PROPELLER LETTER OPENER

Put a new spin on opening the bills with this propeller letter opener. With its streamlined design of heavy zinc alloy and brushed-metal finish, it makes a beautiful object d'art for the desktop. Twirl it on its spinning metal base for a bit of fun.

P/N 13-16039 ..... $12.95

GENERAL UTILITY PLUS GLOVES

All-purpose and abrasion-resistant. This is the ideal performance work glove. Heavy duty non-slip reinforcement on the palm, fingers and thumb ensures lasting durability and grip. The ergonomic design reduces hand fatigue while enhancing wrist support. Features a terry cloth brow wipe on the thumb. This glove is ideal for any number of rugged applications.

Medium ..... P/N 13-09813 ..... $20.85
Large ..... P/N 13-09814 ..... $20.85
X-Large ..... P/N 13-09815 ..... $20.85

LINDBERGH PROPELLER

This 50" propeller is a scaled reproduction of the propeller used by Colonel Lindbergh on his Sperry Messenger airplane. With Quartz Clock (Q) or Weather Station (W). Available in clear(C) or beautifully stained (S) finish.

50" Prop W/CQ ..... 13-32180-CQ $229.95
50" Prop w/SQ ..... 13-32180-SQ $241.95
50" Prop w/CW ..... 13-32180-CW $275.95
50" Prop w/SW ..... 13-32180-SW $287.95

REPLICA PROPELLER LETTER OPENER

Own a bit of aviation history with our unique letter opener. A mini replica of the Hamilton Standard steel propeller used on Charles Lindbergs "Spirit of St. Louis". 9" long, it has a chromed hand polished handle, is cast to highest quality metal standards with authentic Hamilton Standard decals on the blade. Shipped in elegant gift box

P/N 9925 ..... $29.95

PS

NOMEX AVIATOR'S SUMMER FLYING GLOVES

GLOVE SIZING

Hold your hand out with your fingers together and thumb extended out. Start measuring palm from between the index finger and thumb, continue around the outside of the palm and back around on the inside of the palm making a complete circle with the measuring tape. Total inches around entire palm determines the size glove you will need.

- 6 inches or less, order Size 7
- 6 to 6 1/2 inches, order Size 8
- 6 1/2 to 7 inches, order Size 9
- 7 to 7 1/2 inches, order Size 10
- 7 1/2 to 8 inches, order Size 11
- 8 inches or more, order Size 12

Size	Part No.	Price	Size	Part No.	Price
Sage Green			Desert Tan		
9	13-02056	$19.95	7	13-03621	$19.95
10	13-02057*	$19.95	8	13-03622	$19.95
11	13-02058	$19.95	9	13-03623	$19.95
			10	13-03624	$19.95
			11	13-03625	$19.95
Black			Olive Drab		
7	13-03615	$19.95	9	13-03629	$19.95
8	13-03616	$20.80	10	13-03630	$19.95
9	13-03617	$19.95	11	13-03631	$19.95
10	13-03618	$19.95	12	13-03632	$19.95
11	13-03619	$19.95			
12	13-03620	$19.95			

* Grey leather palms and sage green suade topside.

BARMITTS FOR YOUR TRIKE

Extend your flying season and enjoy it more with these barmitts. The sides zip open to fit around the bar. The cozy insulation and wind-proof exterior keep your hands comfortable in the coldest wind. Sized to fit over your gloves.

BatMitts - Red ..... P/N 13-07304 ..... $118.50
BatMitts - White ..... P/N 13-07305 ..... $118.50
BatMitts - Reflective Green ..... P/N 13-07306 ..... $118.50
BatMitts - Blue with Map window ..... P/N 13-07339 ..... $118.50

MARK 4 SILVER CROSS GOGGLES

All leather face mask, colour matched head bands, Split lenses, bright polished and chrome plated frames, Sliding Nose Bridge Adjustment.
P/N 13-06000 ..... $99.85

Replacement Lenses for Silver Cross Goggles
Clear, set of 2 ..... P/N 13-06100 ..... $32.50
Smoke, Set of 2 ..... P/N 13-06200 ..... $39.55

WORLD WAR II RAF FLYING GOGGLES

A faithful Replica incorporating dark brown soft leather face mask stitched to the RAF blue painted solid brass frames. The traditional Split Lenses P/N 13-05860 ..... $89.95
Replacement Split Lenses - Clear ..... P/N 13-06100 ..... $32.50
Replacement Split Lenses - Tinted ..... P/N 13-06200 ..... $39.55

VINTAGE AVIATOR GOGGLES

Soft Brown or Black Leather face Mask, Hand Stitched to silver or black painted solid brass frames. Screw adjustment on nose bridge.....
P/N 13-06310 ..... $91.85
Replacement Split Lenses - Clear
P/N 13-06100 ..... $32.50
Replacement Split Lenses - Tinted
P/N 13-06200 ..... $39.55

LOCK N CLIMB LADDERS

The next generation ladder for maintenance and repair. The LockNClimb MRO ladder meets the needs and requirements for any industry. The ergonomic design drastically reduces the risk of back injuries and allows a safer and more productive working environment. Extends and folds easily. Designed for one person use. Work secure in tight spaces. Available in 4', 5', 6', 8', 10' and 12' heights. Available in aluminum and fiberglass. Removable tool tray available. Meets or exceeds ANSI/OSHA safety standards. Meets or exceeds ANSI A14.5 and A14.2 standards. Made from durable grade 6061 aluminum. ANSI/OSHA 300lb rated 1A special duty.

Size	Part No.	Price
4 Foot Aluminum	13-15926	$475.00
5 Foot Aluminum	13-15927	$485.00
6 Foot Aluminum	13-15928	$495.00
8 Foot Aluminum	13-15929	$525.00
10 Foot Aluminum	13-15930	$540.00
12 Foot Aluminum	13-15931	$549.00
4 Foot Fiberglass	13-15932	$550.00
8 Foot Fiberglass	13-15999	$1,397.00
10 Foot Fiberglass	13-16001	$1,397.00
11 Foot Fiberglass	13-16002	$1,434.00
12 Foot Fiberglass	13-16003	$1,457.00
15 Foot Fiberglass	13-16004	$1,648.00

CUSTOM AIRCRAFT MODELS

Recreate your airplane into a beautifully detailed desktop replica. Our Premium Custom Made Models are built to your exact specifications – no detail will be spared. You can have ANY aircraft recreated into a museum quality desktop model with your paint scheme, logos, registration number or any other details and markings.
Complete your model with a fully customized stand including your choice of logo and a personalized inscription plaque. We offer over 3,000 different models – both military and civilian. Our desktop models are a maximum of 17" in either wingspan or length. Please allow approximately 6-8 weeks for delivery. 100% satisfaction guaranteed.
The Premium Plus Custom Models Include : Full Cockpit and Cabin detail – Instrument panel, yoke, seats, seatbelts and other fine details. Fully Customized Paint Scheme. 17" Maximum Wingspan or Length (whichever is greater). Antennas and Other VERY Fine Details. Premium Plus High Gloss Black Pedestal. Raised Brass Logo on Stand. Personalized Inscription Plaque. Military or Civilian. Your Paint Scheme. Your Registration Number. Your Airplane Recreated into a Beautiful Desktop Model. Built to Exact Specifications.
IMPORTANT INFORMATION : Please fill out the information form online in order to customize your model. Please send the form to contact information listed on the form. Along with information form filled out, we will need 5 photos of the top, front, back, and both sides of your aircraft emailed to us.
Custom Aircraft Models ..... P/N 13-05837 ..... $349.00
Premium Plus Custom Models ..... P/N 13-08050 ..... $566.00

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PILOT SHIRTS

Aircraft Spruce stocks a full line of authentic airline pilot shirts in Aviator, Pilot, and Commander styles. Aviator style is available in short and long sleeve, in white or blue. Pilot and Commander are available in short and long sleeve, in white. Available in a complete selection of sizes for men and women pilots.

VISIT WWW.AIRCRAFTSPRUCE.COM FOR A COMPLETE LISTING OF SIZES AND COLORS.

MECHANICS DOLLIES – STEP STOOLS

BONE MECHANICS CREEPER

The Bone™ features a uniquely shaped body which cradles the user between the wheels only an inch or so above the ground. The big, easy rolling wheels are positioned outboard to provide a strong, stable working platform that can't tip or flip the user. The rib-reinforced body is molded of a state-of-the-art, engineering grade co-polymer that resists the effects of common solvents, so cleaning is quick and easy at the end of the job. The smooth, comfortable one-piece design has no cracks, corners or other pinch points, and the outboard wheel pods prevent tipping and flipping. The Bone™ body is a patented design which allows the use of large diameter wheels with specially formulated tires that roll easily over all sorts of obstacles, including rough floors, drop cords and air lines, loose parts and even tools and floor grates. The wheels are fastened to the creeper body with four 5/16" diameter through bolts so they can't pull tear out or break off in any common use situation.

One of the most important features of the Bone™ is its wheels. Ordinary creeper wheels are a conventional creeper's weakest point. They're too small, so they get hung up or stopped by even the tiniest obstacles, and they have a real knack for tearing out or breaking off at the worst moment. To add insult to injury, the replacement wheels can cost almost as much as a new creeper. P/N 13-12331.....$152.95

TAIL BONE ROUGH RIDER MECHANICS SEAT

The Tail Bone Rough Rider is a totally new approach to creeper seats, designed from scratch to be easier to use, more comfortable, more durable and a better value than any other mechanic's stool on the market! The base is a uniquely designed tripod, so it's a naturally stable working platform even on uneven floors and surfaces. And because it turns with the user, the legs always stay out of the way and let you tuck your feet under you for comfort or convenience. The tripod design also means fewer wheels to have to roll over obstacles!

The Tail Bone Rough Rider uses the casters from the Bone Rough Rider Creeper, which are 5 3/8" diameter and 1 3/8" wide, perfect for using outdoors in less than perfect circumstances. It also has an extra inch of ground clearance over the standard Tail Bone! The bucket seat works just like the ones in high performance vehicles, it lets you use your natural body movements and trunk strength to position yourself and the stool exactly where you can do the job at hand comfortably and easily. Work without fear! The Tail Bone just rolls over obstacles that trip and tip ordinary little wheel stools. P/N 13-12330.....$179.95

BATWING SEAT DOLLY

Recipient of several ergonomic design and function awards, the BatWing truly represents the leading edge in low profile work access support equipment. Features: • 10 Gauge Heavy Duty Reinforced Steel Construction • Three 3 1/2" Casters, 1 Locking • Fully Adjustable Back Rest • Optional Tool Boxes • Optional Caster Guards. P/N 12-03216.....$670.00

STOOL DOLLY

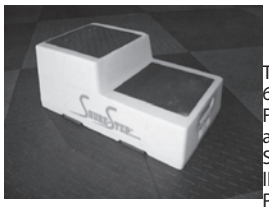
Equipped with a fully cushioned seat and a side mount tool box, the 101-HD stands alone in the comfort and productivity features.

P/N 12-03217.....$185.00

SHURE-STEP® II

The Shure-Step II is a 10 inch high step stool that will not tip or slip during use for aircraft maintenance. This step stool is rated for 500 pounds yet only weighs 10 pounds. Rubber pads on bottom prevent the step from scratching the paint on an aircraft. Color: Yellow

Features: • 6 large rubber pads on bottom • Very rough top surface to keep mechanics safe • Ice cleats keep the step from sliding during icy winter conditions • The Shure-Step II is a stackable step stool • Weight: 10 pounds P/N 13-11219.....$98.50



SHURE-STEP® 2-STEP STOOL

The 2-Step stool is 10 inches high, half is 6 inches high.

Features: • Durable, lightweight, and stackable • Shure-Step® will float • All Shure-Step® products are rated at holding 500 lbs.

P/N 13-11585.....$119.50

SHURE-STEP® SENIOR STEP

The Senior Step is 6 inches tall, weighs 9 lbs., rated at 500 lbs. and measures 24" x 14". Step has a large, 10" x 20" black non-slip sandpaper surface on top of it.

Features: • Durable and lightweight • Senior Step can be stacked on top of the Shure-StepII® • Shure-Step® will float • All Shure-Step® products are rated at holding 500 lbs.

P/N 13-11584.....$117.80

FOLDING AIRCRAFT STEP STOOL

This sturdy step stool is made of oak veneer over hardwood and provides a spacious 11"x11" square standing area. The stool is 16" high and features non-skid strips on the standing area. The precision crafted stool opens and closes easily and measures only 2"D x 12"W x 19"L when folded for storage in baggage compartment or under the seat of your aircraft. Weighs only 4lbs. Lightweight, compact, and very strong, this stool is idea for use around general aviation aircraft. P/N -13-04281.....$42.95

PORTABLE FOLD UP STICK CHAIR

The Stick Chair is portable in every sense of the word and convenient and practical when you need to sit. The Stick can also be used as a walking stick.

When seated, your weight is distributed to the Stick Chair. You stay perfectly balanced with both feet on either side in a tripod fashion. The Stick Chair reduces strain on legs, knees and back as you sit comfortably with eyelevel visibility. Folds to 14" length. Weight 1.5 lbs.

P/N 13-12395.....$49.95

ALUMINUM AIRCRAFT FUELING LADDER

Heavy duty aluminum fueling ladder perfect for aircraft fueling applications. Just the right height to put you in perfect position for low-wing or high-wing aircraft. Made of high quality aluminum and will stand the test of time.

Features: • Step Ladder • Ladder Height 5 ft. • Number of Steps 3 • Platform Width (In.) 13-1/2 • Height to Platform (Ft.) 3 • Bottom Width (In.) 20 • Base Spread (In.) 34 • Step Width (In.) 3 • Shipping Weight: 5.8 lbs • Anti-Slip Tread • Load Capacity (Lb.) 300 • Aluminum, ANSI Type 1A • Includes Heavy Duty Standing Platform. P/N 13-12017.....$140.75

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AIRCRAFT SPRUCE EAST
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Prices Subject to Change Without Notice

FLIGHT SOUND X - AVIATION HEADSET/USB ADAPTER

Just plug and play ... and you're ready to go! Flight Sound X is designed to be as easy to use as possible - no additional software, no batteries, no external power sources - just one standard USB cable. Just 'plug and play'! When users have finished with the device, simply unplug it, and the computer will revert to its original audio settings. The Flight Sound X adapter is a great accessory for any pilot! Features: USB 1.1 and 2.0 compatible. Plug and Play with Windows 7/Vista/XP and Mac OS X. Uses standard General Aviation headset connectors (PJ-068 and PJ-055B). Supports headset impedances of 100 to 600 Ohms. Supports Mono and Stereo Headsets. Compatible with standard microphone types (electret, dynamic and powered dynamic) Specifications: Powers microphone bias (+9V) from USB port (no external power needed). Zero delay voice feedback/sidetone feature (PC/Mac only). Output frequency response (20Hz-20KHz). Weight: 100g. Size: 65mm(L), 55mm(W), 25mm(D). Compact, robust, anodised aluminium enclosure.

Pilots Headset USB Adapter ..... P/N 13-09050 ..... $89.95
Chopper / Military Pilots UCB adapter ..... P/N 13-09051 ..... $86.95

GPS TRAINING SOFTWARE FROM ASA

GPS Trainer Version 2 is a tutorial to help pilots master GPS from their desktop. For the renter confronted with one brand of GPS one day and another the next; for the instructor who teaches in multiple aircraft; for the aircraft owner who is trying to master the nuances of a favorite navigational tool; for the consumer wanting to search the options before making the buying decision; for fleet and Part 135 & 121 of operators who are required to provide GPS instruction to their pilots. GPS Trainer makes time spent in the Aircraft more effective by providing the appropriate tools to learn the GPS receiver on the ground.• The most popular GPS units are included, pilot scan learn the Bendix/King KLN 89B by AlliedSignal, Garmin GNS530, GPSMap 430, 295 or Apollo GX50/60 all on a single CD • Manufacturers' simulators and operating manuals included • FAA GPS reference materials included •Tutorial runs on both PC & Macintosh systems.

P/N 13-01074 ..... $52.95

THE COMPLETE G1000 COURSE FROM ASA

The Complete G1000 Course will help you transition from steam-gauge "round dials" to the Technically Advanced Aircraft (TAA) glass cockpit environment. This interactive software allows you to practice becoming proficient in operating the G1000 from the safety and privacy of your home or office computer. The intuitive software interface makes this as easy to use as reading a book. Computer learning tools in the form of cockpit representations and demonstrations of the tasks combine with a Part 141 and and FITS-compliant G1000 course, which is given by Skyline Aeronautics and in forums around the country. In this way the software teaches you how to safely and efficiently use the G1000 without running up the Hobbs! P/N 13-04346 ..... $49.95

MY KIT AIRPLANE SOFTWARE CD

Written for XP and VISTA

Consists of several modules for individual functions. These modules include the Main Menu, Project Entry, Primary Project Selection, Construction Information Entry, Expense Entry, Flight Information Entry, Maintenance Information Entry, and Weight & Balance Tool. Also included are forms for entering Advisor and Category Information. The unique Suppliers Information form contains fields for just about any information you wish to keep track of. There is also a very complete FAA page that contains all the FAA information necessary for you to build, certify, and get your FAA Airworthiness Certificate for your Experimental or Light Sport Aircraft. In addition there is a very comprehensive file of information on Light Sport Aircraft and their construction and operation.Fully tested in XP and VISTA! Does require XP to have SP2 installed. P/N 13-04694 ..... $69.80

THE NAVIGATION CD-ROM

The Navigation CD-ROM is an interactive CD-ROM that teaches how to navigate with VOR, NDB, GPS, HSI, RMI, and Airspace! You'll be prepared for action in the cockpit! Animation, sounds, quizzes and interactivity allow you to visualize navigation concepts while using simulations of actual aircraft equipment. To make learning easy, each tutorial features an easy-to-use point-and-click environment. During each tutorial, you're prompted where to click, when to proceed and what information to provide during quizzes. If you need more time learning a concept, it is easy to review the section at hand. This CD-ROM features a logical progression, clearly written lessons, quizzes, interactive equipment simulation, colorful graphics and animation. System Requirements: Windows Vista, Windows XP, Windows 98, or Windows 95. 4MB RAM (8MB recommended). CD-ROM drive. 2MB hard drive space. Video supporting 256-color mode (minimum). Sound card (not required, but recommended).

P/N 13-00892 ..... $99.00
Download Version ..... P/N 13-11401 ..... $95.00

VOR/NDB SIMULATOR V2.0

On-screen instructions are fully-voice-narrated. There's only one Simulator Module—you can choose any array of instruments to use, from the Instrument Manager. Instruments are draggable, allowing you to arrange them as they exist on your aircraft's instrument panel. VOR and NDB navigation can be performed simultaneously on the same screen. "Random" buttons generate random aircraft heading, navaid positions, aircraft position, and wind speed and direction Hide and show the aircraft, course lines, path flown, and heading vectors. The instruments and map area can be printed by the default printer configured on your computer. Grid lines on the map area represent square miles. ADF instrument allows fixed-card and rotatable-card methods of use. Precision movement of the course needle on the Course Deviation Indicators and Horizontal Situation Indicator allows greater navigation accuracy. Compass rose symbol on VOR navaids now remains stationary when the course is changed P/N 13-01437 ..... $69.00
Download Version ..... P/N 13.-11402 ..... $64.95

GETTING AROUND ON THE GROUND

The only interactive, multimedia tool available that teaches the types of airport markings, signage, and lighting. It also goes beyond simple technical knowledge by outlining hazards, safety tips, and procedures that will help keep you aware, knowledgeable, and safe on the ground. A real-time, 3-D, virtual airport taxi simulator. Get the ATIS, exchange communications with Air Traffic Control, and follow taxi instructions including hold short and runway crossing tasks. Two airports and forty challenging taxi scenarios are included. And, there's no need for special hardware such as rudder pedals, because you control your aircraft with just a few keys on your keyboard. It's easy! By completing all the content and taking the Final Exam, you can qualify to obtain credit for the FAA WINGS program. The WINGS program is a continuing education program for pilots, sponsored by the FAA. You'll not only learn to be a safer pilot on the airport surface—you'll also be able to prove your commitment to flight safety with your WINGS account.

P/N 13-01438 ..... $99.00
Download Version ..... P/N 13-11403 ..... $99.00

AIRBORNE RADAR ONLINE TRAINING

Airborne-Radar.Com is an online course that teaches how to use airborne weather radar. But, it goes beyond the use of airborne radar, teaching thunderstorm theory, hazards of thunderstorms, airborne radar theory, and airborne radar techniques. A Final Exam concludes the course, enabling the user to test their knowledge. Airborne-Radar.Com is available to PC and Mac users. Most seasoned professional pilots will admit that there has always been a lack of adequate weather radar training. The mantra has always been, "fly the airplane, and figure it out as you go." But there's no reason to continue with that mindset. Now Airborne-Radar.Com provides the only source of thorough, interactive online training for airborne weather radar. ..... P/N 13-10296 ..... $199.00
Download Version ..... P/N 13-11405 ..... $199.00

FLIGHT OF VOYAGER CD (DICK RUTAN)

This is a recount of the horrific, horrendous, heroic & humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On Dec. 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, & more. P/N 13-01163 ..... $34.95

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PANEL PLANNER
INSTRUMENT PANEL DESIGN SOFTWARE

Panel Planner software gives you the power to design and build instrument panels in record time. Simply drag full-color, photo-realistic instruments, avionics, and cockpit controls into place on an aircraft panel template or photograph. Panel Planner tracks total cost, total weight, and peak current, generates and equipment list, and even prints actual-size hole-cutting templates and color mock-ups. Panel Planner is easy to install and use with its continuous context-sensitive help to guide you every step of the way. The updatable database includes equipment from King, Narco, Sigma-Tek, David Clark, P.S. Engineering, Insight, Garmin, IFR, II Morrow, UMA, Mitchell, Trimble, Arnav, S-Tek, Century, Vision Microsystems, Avidyne, Digifly, Skyforce, and many more; PLUS switches, lights, control cables, vents, circuit breakers, trim indicators, etc. Create labels, color-coded annunciators, or placards.

PANEL PLANNER PRO (2.9 VERSION)

The PPJ 3.4 update has 100's of new panels and instruments. Please download the Excel spreadsheets. Hundreds of hours were spent reworking older panels to bring out more detail. Instrument manufacturers added like Lonestar that represent new, important auxiliary avionics and more smaller aircraft manufacturers' panel added. View 1600 instruments on 600 aircraft panels. Outputs DXF files for CNC, laser/water jet. Updates over the internet. Full-size cutting template printouts Measurement and alignment tools. Edit existing or create new panel templates. Multiple zoom and magnification levels. Actual-size color prints from desktop printers.

Panel Planner Pro for Windows ..... P/N 13-44415 ..... $249.95
Panel Planner Pro for Macintosh ..... P/N 13-06210 ..... $249.95

LOGTEN PRO PILOT LOGBOOK APP

LogTen Pro is the electronic logbook of choice for tens of thousands of Mac pilots in nearly 200 countries, and in every major airline. Designed to be completely customizable for your type of flying, country, region, company so you can track exactly what you need.

Features:

- Syncs seamlessly with iPad and iPhone versions (but not required - whether you purchase the Mac version or Universal iPad/iPhone version, your whole logbook travels with you!)
- Data entry is quick and intuitive
- Easily imports existing data and you can customize to your needs
- Automatically tracks currency and duty limits
- Harnesses all the power of Apple Smart Groups so you can slice and dice your data instantly to provide answers to any question about your flight time (great for insurance, flying clubs, interviews, etc.)
- Tracks certificates, ratings, endorsements, medicals, expenses and flight reviews
- Prints stunning reports and official logbooks, over 80 reports available out of the box or you can create your own!
- Automatically calculates night time
- Exports flights and trips right to your calendar
- Automatically processes airline schedules
- Visual limits lets you see at a glance if there's any issures with your schedule
- Customer service second to none...
- And a lot more

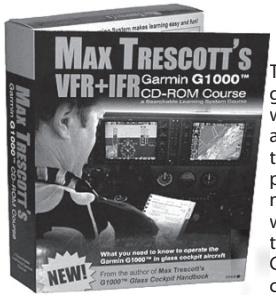
Apple/MAC ..... P/N 13-11975 ..... $99.99
iPhone/iPad ..... P/N 13-11976 ..... $79.99

COMM 1 VFR/IFR RADIO SIMULATOR

Learning to fly? Not flown for a few years? Talking on the radio is one of the most important, but least emphasized, skills you need to fly safely in today's busy airspace. COMM1 VFR Radio Simulator is a proven tool for getting you up to speed on communicating professionally with ATC, Flight Services, Flight Watch, and other ground personnel. 6+ hours of training, comprehensive audio-visual tutorials, realistic flight scenarios, Interactive practice exercises w/ATC, playback your exchange w/ATC, and compare yourself to an expert. Works with MAC and Windows 8. 486/66 MHz PC processor. 16 MB RAM. 6 MB hard drive space. Windows 95. 4x speed CD-ROM drive. Sound Blaster-compatible sound card. Microphone and speakers (or headset). 800 x 600 resolution display with 256 colors. Works with MAC and Windows 8.

Comm1 - VFR Radio Simulator ..... P/N 13-32221 ..... $93.95
Comm1 - IFR Radio Simulator ..... P/N 13-00093 ..... $112.95
Headset with Boom M/C ..... P/N 13-33331 ..... $22.95
Plug & Play Combo VFR (Includes: COMM1 Multimedia headset / Mic & COMM1 VFR Radio Simulator) ..... P/N 13-34441 ..... $111.95
Audio Pilot Adapter ..... P/N 13-03249 ..... $49.95

MAX TRESCOTTS G1000 CD-ROM COURSE



There is a revolution sweeping through general aviation. All new aircraft ship with advanced glass cockpits and pilots are faced with the challenge of transitioning to these new systems. The most popular system is the Garmin G1000, and now you can master the system yourself with this new CD-ROM set produced by the author of the popular Max Trescott's G1000 Glass Cockpit Handbook.This course includes: More than six hours on two CD-ROM's, Large, full screen views of displays, Movie screen captures of operating knobs, Printable G1000 front panel displays, Tips from factory and Master CFI's, Narration by two CFI's for easy listening, Keyword searchable slides and transcripts, Optional quizzes to reinforce key points, Files that run on Windows, Macintosh and Linux. PN 13-05534 ..... $89.95

GARMIN G1000 GLASS COCKPIT BOOK - Learn about all Garmin G1000 features & differences Get the single source of information that educates pilots about all of the features and benefits of flying the Garmin G1000, and how features vary among aircraft manufacturers. Whether you fly a Beechcraft, Cessna, Columbia, Diamond, or Mooney, you'll learn which Garmin G1000 features apply to your particular aircraft. Or, if you're planning to buy a new Very Light Jet (VLJ) like the Cessna Mustang or Diamond D-Jet, this book will help you prepare while you wait for delivery.

PN 13-05533 ..... $36.95

MAX TRESCOTT CD-ROM COURSE

Makes it easy to learn all of the details of flying with WAAS. Designed for the Garmin 430W, 530W, 480, G900X and G1000, the course leads you step-by-step through flying these approaches. Videos demonstrate the flying of actual approaches, and software simulators let you practice loading and flying these approaches.The course is taught by Master CFIs Max Trescott and Susan Parson, who say it covers the "gotchas" that can trick even experienced GPS pilots. P/N 13-05067 ..... $99.95

KITLOG PRO SOFTWARE

KitLog Pro is an organizational tool that allows the builder of any type of aircraft to create, archive, maintain, and display the entire building process. Whether your experimental aircraft is a plans-built EAA bi-plane, a Van's RV, a Glastar, or even a Lancair IV-P, KitLog Pro is the most efficient way to ensure that you meet the requirements of a builder's log for the certification of your homebuilt aircraft.

Features: • Complete Builder's log to satisfy FAA requirements Detailed Expense Log •Test Flight Log • Maintenance Log • Weight & Balance Calculator P/N 13-03705 ..... $49.95

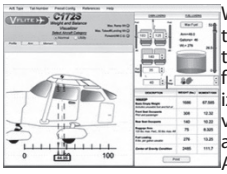
WEATHER STATEMENT GROUNDSCHOOL

A CD-ROM-based course on METAR's and TAF's. Nearly 2 hours of stunning, interactive training is provided. Promotes learning through human interaction—not just rote memorization. A remarkable feature is the interactive weather controls, which enable the user to "control the weather." Since weather codes are confusing to interpret, the user can click the "Speak-It" button to hear a verbal translation. This allows the user to correlate codes with a true, visual picture and understanding of the weather. This tutorial CD is perfect for all pilots, from students to rated pilots who wish to remain sharp and proficient. It's also ideal for airport personnel, dispatchers, and anyone else who needs to view aviation weather information.

Software ..... P/N 13-05575 ..... $59.00
Download Version ..... P/N 13-11404 ..... $55.00

PS

JEPPESEN WEIGHT & BALANCE VISUAL



With our easy to use system, pilots can learn to quickly calculate the weight and balance of their favorite aircraft and save configurations for later use. The system allows pilots to visualize the loading condition from a unique profile view, arm, and moment charts. Includes weight and balance references and training tutorial. Allows you to store weights for passengers, baggage, and favorite fuel levels. Once they're stored, simply drag them from the list and drop them on the seats or fuel slider. Expandable Purchase additional aircraft modules for all of the aircraft that you fly! No complicated instructions or data points to build. The chart of aircraft arm or moment is graphically displayed. P/N 11-04767 ..... $41.75

SEE www.aircraftspruce.com for a list of supported aircraft.

GARMIN G1000 TRAINING: IFR PROCEDURES

Advanced, extensive computer-based training program developed with input from Garmin that teaches the skills required to master the operation and confidently fly the G1000 in IFR conditions. Learn how to pull up and fly instrument procedures, load and activate approaches including RNAV and GPS approaches, new WAAS-enabled approaches such as LNAV, LNAV/VNAV, and LPV approaches, departures and arrivals, as well as performing course reversals, holding patterns, and executing missed approaches. Complete and comprehensive training allowing the pilot to become proficient in all advanced functions and tasks required for IFR flight and greatly facilitates the transition to flying the Technically Advance Aircraft and the Garmin glass cockpit.

Garmin G1000 Training IFR Procedures ..... P/N 13-06279 ..... $192.95
Garmin G1000 PDF & MFD Basics ..... P/N 13-05787 ..... $208.95
Garmin G1000 PFD & MFD Advanced ..... P/N 13-05788 ..... $208.95

MULTIMEDIA SOFTWARE FLITESCHOOL

In terms of speed, graphics, clarity, and learning value, FliteSchool from Jeppesen Software is unequaled in its class. Much more than a series of "flash cards" that help you memorize the answers to FAA exams, FliteSchool provides programmed learning modules and Hypertext referencing that leads through a series of associated references to learn more, faster! Flite School's Dynamic Cybernetic Learning enhances your training by analyzing your responses and leading you to new subject areas. You'll find studying with FliteSchool to be more interesting and more effective than other software programs and many video tapes. Material is organized into 20 categories and monitored by topic. The software takes you step-by step through each subject area and returns to areas where you need more work. When you've mastered enough material to pass the FAA exam, you receive a graduation certificate for your instructor to sign off.

Private Pilot ..... P/N 13-100507 ..... $69.50
Instrument ..... P/N 13-100519 ..... $79.95

VTS MULTIMEDIA TRAINING SOFTWARE

VTS training tools are priced affordably to allow each student to own a personal copy of the software.Each aircrafts systems are covered in detail far surpassing th general information provided in Pilots Information Manual. For example, the electrical schematic is presented on-screen just as it appears in the information manual. But instead of just sitting there looking mysterilous and intimidating, this virtual schematic comes to life with a click of the mouse. Controls and indicators from the cockpit are also available on-screen, creating an animated simulation of the entire system.

Aircraft Systems - Skyhawk ..... P/N 13-03387 ..... $89.95
Aircraft Systems - Warrior ..... P/N 13-03388 ..... $148.95
Aircraft Systems Seminole. ..... P/N 13-03389 ..... $149.00

WINN BALANCE

Originally designed for the Ultraligh / Experimental aircraft builder/designer to assist in weight and balance calculations, it also works well on conventional aircraft. It is Great everyday flight planning as well. It will run on Win95/98/Me/2000/XP. The program interface is designed so that the CG and weight of your aircraft is automatically calculated with a minimum of effort.

MAIN SCREEN - This main screen contains all calculation input and dynamically displays real-time results. Hint screens are also of valuable assistance on this screen.

HELP SCREEN - Help is never far away, This help screen gives you all the information you will need to perform an initial weight and balance. It describes the entire process of how to weigh your qaircraft and some of the formulas to help you along the way.

SECONDARY INFORMATION SCREEN - This screen stores all your aircraft's installed equipment which forms a portion of your empty weight. This information is retained until you remove each item. It serves as a reminder as to what exactly was installed in the aircraft at the time of weighing. P/N 13-05599 ..... $19.95

JEPPESEN AVIONICS KNOWLEDGE LIBRARY

Master you GPS unit with Jeppesen's interactive e-learning for Garmin® GPS systems and Lowrance® Handheld GPS Systems. Jeppesen's advanced, self-paced digital learning programs provide training on all operational aspects of you GPS unit. It's the easy, proven way to get confident with all that you GPS has to offer. Key Features include: • Scenario-based, guided simulation • Realistic Emulator • Detailed, narrated demonstrations. • O-screen help and feedback systems. Discover te best way to use the full power of your avionics system compared to heads-down, in cock-pit training

Description	Part No.	Price
Garmin® 430/530 VFR & Core IFR Procedures	13-05644	$133.75
Garmin® 430/530 Advanced IFR Procedures	13-05645	$114.75
Garmin® 430/530 WAAS Procedures	13-05646	$114.75

AEROFLARE U.S. CHARTS/FLIGHT PLANNING APP

AeroFlare is an iPad and iPhone application for use by general aviation pilots in all aspects of flight, from initial planning through post flight debrief. AeroFlare combines digital VFR moving maps along with flight recording and analysis to bring you a truly revolutionary product. AeroFlare offers fast and amazing slippery maps presentation of aviation sectional and terminal area charts. These charts combined with an overlay of GPS position data create an accurate and user friendly situational awareness package. Key features of the AeroFlare EFB are: US VFR sectional charts US VFR terminal area charts Fast moving maps with GPS position overlay Charts rotate based on flight direction Download charts for offline use Internal or external GPS Personalized settings. ***This is a subscription only*** E-mail address required for purchase.

US VFR 1 Year ..... P/N 13-12574 ..... $24.99
US VFR w/Recording & Analysis ..... P/N 13-12575 ..... $49.99

ASA INSPECTION AUTHORIZATION PREPWARE CD ROM

More than 400 example FAA questions and answer choices, supported with comprehensive explanations. The same reference material applicants will have access to during the actual test is included as a PDF (the "CT-8080-8D"). Become familiar with these documents and learn how to glean the information needed to answer the questions, from such FAA publications as the Airworthiness Directives, Advisory Circulars, Type Certificate Data Sheets, FAA Order 8130.21D, and FAA Form 8130-3. System Requirements: Internet connection is required for product registration and updates. IBM compatible PC with Pentium-class processor, CD-ROM drive, mouse or other compatible pointing device. For both Windows and Macintosh, Adobe Acrobat Reader is required. P/N 13-06663 ..... $43.95

JEPPESEN 530/430 VFR & ADVANCED IFR CD

A bundle that includes both the Jeppesen Garmin GNS530 Training - VFR & Core IFR Procedures CD and the Jeppesen Garmin GNS530/430 Advanced IFR Training CD. Features: This bundle includes both the VFR & Core IFR Procedures and the Advanced IFR Procedures which teaches the basics and provides comprehensive training on almost all operational aspects of your GPS, including advanced IFR procedures.

P/N 13-07780 ..... $197.95

PS

VOLAIR SIM COCKPIT CHASSIS

Note: This product is drop shipped direct from the manufacturer. If shipping international, inbound freight from manufacturer to our warehouse will apply in addition to outbound freight from our warehouse to destination.

This modern design is intended to take the flight simulator instruments off our desks and put them in a more realistic simulator environment. Although the pre-drilled installation holes are universal in nature they are also specific for the Saitek brand of instruments.

The Volair Sim flight chassis' name was derived as a play on the Spanish /Italian word volare, which means 'to fly'. This futuristic looking layout is the near perfect setup for most of our flight simulations. You can adapt any piece or combination of pieces of flight sim gear to the basic chassis and go even further with a little imagination, a drill and a screwdriver.

The Volair Sim is a quality product that enhances the flight simulation environment to near real-world expectations. The high quality powdered tubular steel chassis built around the adjustable real world car racing seat is a true joy to experience. The pre-drilled mounting holes and innovative design features along with the universal adjustable mounts adds to the flexibility of the unit. The ability to mount up to a single 42 IN VESA spec monitor or three 19 – 30 IN widescreen monitors makes it an instant hit with all flight simmers. P/N 13-14948 ..... $595.00

ELITE SIMULATORS

PI 135 - Now use the PI-135 to perform the approaches, holding procedures, and intercepting /tracking required under section 61.57(c)(1) for recent instrument experience (instrument currency)! (PC and monitor not included.) Includes: ELITE Basic ATD v8.5 software, ELITE SEL and MEL Piston Aircraft, ELITE AP-3000 Avionics Panel, ELITE MEL and SEL Throttle Quadrants, ELITE Pro Panel II Console, ELITE Pedals (not shown), AOPA ASF Integrated Course Outline and Training Syllabus P/N 13-07344 ..... $7,995.00

RC-1 - A complete full-featured ATD with life-size, high-resolution instruments, cockpit enclosure, instructor station, and external visual system with large-screen display as standard equipment. It's three trainers in one with included simple, complex, and twin-engine aircraft capability.
P/N 13-07345 ..... $34,995.00

AP-4000 - Enables you to build your own avionics stack. note: Requires Elite Version 8.5 software. GNS430 software has fixed database dated Nov. 2007 and is not upgradable! GPS based on Garmin GNS430
P/N 13-07343 ..... $578.00

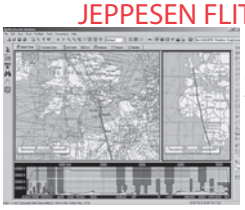
ELITE V8.5 FLIGHT TRAINING SOFTWARE

For years, professional pilots had no choice other than to maintain IFR proficiency in an expensive full flight simulator. By introducing the world's first professional PC-based airliner-class simulator, ELITE offers a completely new way to practice IFR procedures to keep skills sharp.

ELITE Pilot Premium version 8.6 allows pilots of all levels of experience to exercise their flying skills using the power of the personal computer for over two decades. Complete startup and shutdown procedures, fly different patterns or approaches, practice with normal or abnormal situations, or maintain proficiency, in a completely controllable virtual environment with new 2011 navigational data.
P/N 13-07341 ..... $489.95

ELITE Pilot Core with flight dynamics and aircraft functionality crafted to the highest fidelity, owners of the ELITE software can do anything from complete startup and shutdown procedures, fly different patterns or approaches, practice with normal or abnormal situations, or maintain proficiency, in a completely controllable virtual environment with new 2011 navigational data. P/N 13-07342 ..... $189.95

JEPPESEN FLITESTAR FLIGHT PLANNING



FliteStar VFR includes the functionality to satisfy even the most discriminating VFR flyer with features that include: • Graphical TFR Depiction • GPS upload capability • Point-and-click as well as automatic routing • Routing between VORs, NDBs, airports and user-defined waypoints • Direct and great circle paths • Routing around special use airspace • Color-coded elevation information in the planview and profile views • Terrain avoidance flight planning option • Connection to GTE or DTC DUATS via the Internet • Graphic weather overlays • Printed nav logs, flight plan forms, and more • Weight and balance, plus CG location calculations • Dozens of aircraft models and the ability to build your own • Fully compatible with Jeppesen digital RasterPlus VFR and nautical charts • Sunrise and sunset calendar • Color-coded elevation information that can be viewed in both the planview and profile views • Internet or modem connection to CSC or DTC DUATS for current weather and flight plan filing • Auto load function makes installation and NavData updates incredibly easy. • All FliteStar products can be easily upgraded. If you buy FliteStar VFR to get started, you can upgrade to the expanded features and capabilities of FliteStar IFR simply by paying the price difference between the two.

FliteStar IFR v9.0 includes all of the features of FliteStar VFR and Jeppesen's exclusive VectorPlus mapping technology and vector chart themes. FliteStar's chart filtering features allow you to select which chart items are depicted. Intelligent chart de-clutter automatically minimizes label overwrite, making charts easier to read. FliteStar's GPS-direct router avoids airspace vertically as well as laterally, when asked to do so. Integrated terrain data makes your planning easier and more complete by displaying the color-coded elevation information in both the planview and profile views. Weather animation capabilities allow Jeppesen weather images, including satellite and radar images, to be shown in moving sequence, thus depicting weather trend information. And, with release v9.0, cloud bases are automatically shown in the profile view when your weather briefing is complete.

Description	Part No.	Price
North America IFR	6120	$284.05
North America VFR	68273	$149.00
Europe IFR	6006	$371.00
Europe VFR	69383	$149.00
WorldWide IFR	65703	$899.00

RACOON RADIO COMMUNICATIONS TRAINER

The ultimate radio communications trainer. Listen to actual class B airspace radio calls. A complete ATC curriculum. From the Main Menu you have access to video introductions, actual arrival and departure procedures, a comprehensive radio communication ground school and knowledge quizzes. Features: • Photo routes guide you through the arrival and departure procedures for airports in various airspaces. • Hear and read actual ATC radio recordings from multiple pilots. • The ground school course covers communication procedures, air traffic control systems, related equipment. • Challenge yourself using the practical cockpit perspective quiz.
P/N 13-12739 ..... $99.00

HELICOPTER PREFLIGHT GUIDE

Learn to preflight, startup and shutdown the R22 Beta II and R44 Raven II helicopters. The software provides step by step in-depth guidance using video and animated media. Follow the checklist, learn the procedures and become proficient with Robinson Helicopters. Features: • High Definition image quality • 1280x720pix resolution • Runs on MAC an PC (Mac OSX 10 / Windows Vista, 7) min. 1 GB RAM recommended.
P/N 13-12738 ..... $99.00

HELICOPTER MANEUVERS GUIDE

The Maneuvers Guide provides step-by-step guidance with over 2 hours of video and animated media. Each maneuver is introduced by designated pilot examiner Ben Fouts. A detailed graphical animation follows, explaining the maneuvers step by step. Then there is also a cockpit view available showing the flown maneuver from pilot's perspective! Additionally you can profit from the "Examiner's Perspective" videos. Here you will get important information about common errors and see what an FAA examiner is looking for during the check ride. The software is a great learning tool for students and CFIs alike. System Requirements: • High Definition image quality • 1280x720pix resolution • Runs on MAC and PC (Mac OSX 10 / Windows Vista, 7)(requires Adobe Flash 11 and Adobe AIR - free downloads) • Note: This Software does not run on iPad or iPhone min. 1 GB RAM recommended P/N 13-12737 ..... $199.00

PS

SUNFLIGHT GPS 430/ 530 TRAINING SOFTWARE

• The satellite constellation, geometry and capabilities • 3-D positioning, accuracy and RAIM calculations • Great circle routes and map datums • GPS input and output • Common data entry methods • Menu branching and mode structure • Cross mode commonalities • Integrating GPS into the instrument scan • Efficient use of the display elements • Integrating the GPS into checklist discipline • Using OBS mode to the greatest advantage • Interfaces to aircraft systems, moving maps and the autopilot • Precision and non-precision approaches • Using GPS for precision tracking in the hold • Flight plan creation, organization and manipulation • Current regulations • Direct-to and tracking operation • Loading predefined routes (SID/STAR) • Nav page layout and use • Emergency airport searches • Waypoint information pages • VNAV operation • Intercept and tracking a multi-leg course • ILS integration • And much more. P/N 13-12712 ..... $99.95

SUNFLIGHT WEATHER TRAINING SOFTWARE

• Discriminate between active and passive weather detection • List the three stages in a thunderstorm's lifecycle • List the three types of lightning • Describe the method of lightning detection methodology • Describe the inputs and outputs of a typical lightning avoidance system • Recall a mental image of lightning detection symbology • Describe the cell display types and their use • Describe a lightning detector self-test sequence • Recall a mental image of the display control layout • Formulate strategies for weather avoidance using a lightning display • Incorporate lightning detection into decision strategies • And much more. P/N 13-12713 ..... $17.95

SUNFLIGHT TERRAIN TRAINING SOFTWARE

• Recall the purpose of terrain avoidance technology • Review the accidents that led up to the implementation of TAWS • Discriminate between the different types of TAWS
Recall the mandates of TAWS rulings • Describe the method of terrain database comparisons to present position • Recount the audio alerts and their priority levels • List the types of terrain elevation symbology and their priority levels • Recall the formulation and limitations of derived altitude • Diagram terrain database cell resolution • Locate and implement use of the terrain inhibit feature • Recall the various protection schemes • List the differences between the normal and peaks mode • Formulate strategies for terrain avoidance using a TAWS display • Incorporate TAWS limitations into decision strategies • Describe the inputs and outputs of a typical TAWS system • Recall a mental image of the display control layout • And much more P/N 13-12714 ..... $17.95

SUNFLIGHT AUTOPILOT TRAINING SOFTWARE

• Differentiate between position and rate systems • Correlate the similarities between autopilots and human functioning • Diagram the autopilot control system • Describe the operation of the autotrim system • List the different modes and capabilities • Recount navigation tracking theory and limitations • Gain knowledge of navigation modes and their capabilities • Describe the function of accelerometers • List the inputs and outputs of a typical autopilot • Describe the operation of altitude alerters and preselectors • Describe the operation of a flight director • Recount procedures for front and back course approaches • Describe procedures for GPS approaches • Formulate strategies for autocoupled approaches • Incorporate autopilot response into decision strategies • Recognize and evaluate failures • And much more. .....
P/N 13-12715 ..... $64.95

SUNFLIGHT TRAFFIC TRAINING SOFTWARE

• Discriminate between the different types of TCAS and TAS • Describe the method of intruder tracking methodology • Understand the limitations of current traffic awareness technology • Discriminate between the different transponder systems and capabilities • List the four types of intruder symbology and their priority levels • Describe the two sensitivity levels and their priority • Recall the altitude switching, and lockouts, of the sensitivity levels • Describe the tracking of a constant bearing intruder • Verbalize a typical TAS encounter to ATC • Incorporate TAS limitations into decision strategies • And much more
P/N 13-12716 ..... $17.95

HARDWARE OPTIONS FOR ON TOP AND IP TRAINER

FLIGHT SIM YOKE USB - Top of the line yoke features 15 button functions, throttle, prop, mixture controls, X&Y trims, gear and flap switches. Requires USB computer connection and Windows 98®. Prop and mixture controls work only with Fly and FlightSim 2000 software.
P/N 13-00737 ..... $121.75

CH ECLIPSE YOKE - Fully programmable fingertip paddles, ideal for flight and racing sims. Programmable trim / scroll wheels with center push function. Two backlit push buttons and a third traditional push button. Two 8-way hat with rocker switch and trigger on both sides of handle. Configurable POV hat for either left or right hand use. Colored handles for throttle / prop / fuel mixture. Three color LED selector dial giving you a total of 240 programmable functions with CH Control Manager software. Six analog 10 bit axes for aileron, elevator, throttle, propeller pitch, fuel and rudder. New and improved industrial grade material / components; indestructible robust plastic, free floating shaft and clamp extenders for the thinnest of desks P/N 13-06127 ..... $178.75

CH PRO RUDDER PEDALS USB - Features forward/backward slide motion for real simulation flying. Also works well as gas and brake controls for racing simulators. These 3 axes pedals are ideal with the 5 axes USB Flight Sim yoke. P/N 13-00738 ..... $112.75

Kit #1 - Yoke and Rudder Pedals..... P/N 13-06766 ..... $213.95
Kit #2 - Yoke, Rudder Pedals, & Microflight Simulator Software (PN 13-04958) ..... P/N 13-06765 ..... $253.95

CH THROTTLE QUADRANT USB - TWIN ENGINE. Fully programmable and featuring six physical dent axis' and up to 350 buttons. Throttle Quadrant USB takes you from the computer to the cockpit. Features: 6 Axis 12 Buttons (24 Button functions w/Control Manager Software (included), 6 Physical Detents, Fully Programmable with CH Control manager, Compatible with Windows 98, Windows ME, Windows 2000 & Windows XP. Compatible with all Windows based Games.
P/N 13-03377 ..... $122.75

VRTR400 CONSOLE SIMULATOR

The VR Aircraft VRTR400 Console Simulator offers the ultimate in realism, flexibility, mobility, reliability, and cost effective flight training! This high quality instrument panel simulation system represents what you would find in a real single engine aircraft. The VRTR700 is as real as it gets! With today's rapidly escalating operating costs, you can keep flying without burning a drop of fuel, or worrying about the weather. With a small 42" x 18" footprint, the VRTR400 Console simulator will fit in very compact areas, on a desk or small table. Built to rugged specifications, VR simulators will give years of trouble free service. VR simulators are built tough enough to let big kids and non-pilots fly it HARD! Not supplied: PC Computer system capable of operating Microsoft flight simulator 2004 or FSX. Suggest 2.2ghz or higher 2Mb ram Video card(s) capable of having three video outputs. Microsoft flight simulator program Rudder pedals (USB)
VRTR400 Standard Radios ..... P/N 13-06760 .....$8,750.00
VRTR400-G Dual Screen Glass(G1000) ..... P/N 13-06761 .....$9,150.00

MICROSOFT FLIGHT SIMULATOR AS A TRAINING AID

2nd Edition Microsoft® Flight Simulator has inspired many thousands of young "gamers" to pursue flight training in real life and has provided certificated pilots with countless hours of entertainment. And even though there is an awareness that PC-based simulations—and Microsoft Flight Simulator in particular—are helpful as aids in flight training and pilot proficiency, for many it is still unclear how best to benefit from the experience of virtual flying.
P/N 13-04937 .....$19.95

MICROSOFT FLIGHT SIMULATOR X DELUXE EDITION

"Flight Simulator X" is the culmination of nearly 25 years of the landmark "Flight Simulator" franchise and the most significant addition to date. The 10th addition to the highly successful "Flight Simulator" franchise, this newest addition will immerse players in a beautifully rich and realistic world, offering a completely new and innovative gaming experience with dozens of new aircrafts to choose from, including the AirCreations Kiss Ultralight and Maule M7-260C Orion with wheels and skis. Gamers of all ages, types and skills levels will experience firsthand what it's like to be an aviator traveling the globe either alone or online with others. FEATURES: Immersive World., Mission-based Gameplay, New Aircraft, Connected World, Interactive Airports. DVD-ROM for the Microsoft© Windows © 98, Windows 2000, Windows Millennium Edition (Windows Me), WindowsXP and Windows Vista™ operating systems P/N 13-04958 .....$37.95

PS

REDBIRD FLIGHT SIMULATORS

THE JAY BY REDBIRD

Start Up-procedure:

1. Put it on a table.
2. Turn it on.
3. Fly.

Practicing at home is a great idea for pilots. You can keep your skills sharp and your mind in the cockpit even when you can't make it to the airport.

In reality, however, two obstacles deny a majority of pilots effective home flight simulation: purchasing and assembling the right hardware requires a PhD in computer know-how, and after flying around the virtual world for a bit, most pilots get bored. Redbird Flight Simulations, the world leader in FAA-approved flight simulators for general aviation, has addressed both these issues with the Jay.

The Jay contains the monitor, speakers, computer and flight controls—all-in-one unit that is ready to fly right out of the box. It boots up directly to a launch screen where you can select your airplane, airport and weather conditions. Push the green button and you're on a runway and ready to go.

Scenario-based training? It's built in.

The Jay is more than a simulator—it's a flight experience device supporting training, proficiency, and just plain fun! In addition to the free flight mode where you select the aircraft and conditions, the Jay has a scenario mode where you can load a preset scenario and fly it.

A scenario could range from a simple flight challenge to a complex flight with multiple potential outcomes. For example, a magazine article on an aircraft accident could be linked to a mission where the Jay owner flies that scenario. Redbird Media, a company specializing in curriculum for simulation, will create many of these scenarios in partnership with AOPA Pilot and other training outlets and magazines.

The scenario exchange will be open to any company wishing to create scenarios for the Jay. A one-button update on the Jay will load the latest scenarios available for free or that the owner has purchased.

The Jay home screen also has a built-in web browser to access scenario add-ons, such as video, or download simulator extensions such as additional aircraft or scenery.

The Jay chassis is metal, not plastic. Control smoothness is paramount. The parts should last indefinitely. In addition, there are pilot-centric touches. For example, the yoke travel is equivalent to a typical Cessna or Piper single—about three times as far as most plastic flight sim yokes move.

The software powering the Jay is Lockheed Prepar3D (pronounced "prepared"). Prepar3D is an evolution of Microsoft's FSX, enhanced and expanded for professional-level simulation, including Redbird's full-motion simulators.

This means most of the many plug-ins, aircraft and communities designed for FSX will work flawlessly on the Jay.

P/N 13-15906..... $2,490.00

OPTIONS

Description	Part No.	Price
Redbird Wireless Adapter For The Jay	13-15874	$39.95
Redbird RD1 Rudder Pedals	13-15866	$495.00
Redbird Cygnus Home Direct	13-15871	$199.00

REDBIRD TD BY REDBIRD

Table not included
FAA Approved BATD Simulator

The Redbird TD and TD2 are table-mounted flight training devices that are designed with the ergonomics of flight in mind at a price that everyone can afford. Plus, they're fully packaged and easy to set up and operate, making it the most realistic and effective trainer on the market. Traditional "desktop" flight training devices sit on top of a table or desk, causing the pilot to reach up for the yoke and to look unrealistically high for the gauges. The TD and TD2's unique mounting system allows it to be hung under the table, placing the yoke, switches, gauges and visuals in the correct and most realistic position for the pilot. The Redbird TD and TD2 are perfect for flight schools looking to enhance training with simulation, and for individual pilots looking to hone their skills and stay current from the comfort of their home or office.

The newly redesigned Redbird TD & TD2 give you the freedom to fly with interchangeable glass and steam gauges on one device. They represent generic,single engine piston training aircraft. With the TD2, you can fly with or without retractable gear, constant speed prop and or a high performance engine.

Features:

- 90-day warranty with optional 1 or 2-year extended warranty
- Interchangeable instrument panel - traditional or glass configurations
- Complete terrain and airport database
- Equipped with computer, monitor, instrument panel, keyboard and speakers
- Ergonomically correct design which easily slides onto a sturdy, solid table
- FAA Approved BATD with optional rudder pedals
- Failure Hotkeys

Room Requirements:

You will need a sturdy, solid table with a maximum tabletop thickness of 2.25" including any rails and the underlying structure. There should be at least 29" between the legs of the table to allow the TD to slide on to the table smoothly. Please note that you must install the adjustable supporting leg for added stability, if you are not using a Redbird TD table or platform.

Redbird TD.....P/N 13-15905..... $6,995.00
Redbird TD2 .....P/N 13-15904..... $7,995.00

OPTIONS

Description	Part No.	Price
TD & TD2 Sims. Come with a single screen. This kit adds 2 side screens for a panoramic view.	13-15870	$1,695.00
Redbird Table For TD And TD2	13-15860	$629.00

PS

OTHER REDBIRD SIMULATORS

Part No.	Model No.	Description	Starting Price
13-15889	Redbird LD	Wrap around visuals without cockpit enclosure	$29,800.00
13-15890	Redbird SD	Enclosed similar to FMX, but no motion	$39,800.00
13-15891	Redbird FMX	Full motion, enclosed cockpit, flagship model	$59,800.00
13-15892	Redbird MX2	Full motion, compact for limited space	$55,800.00
13-15893	Redbird MCX	Full motion, ideal for CFI, CFII, CRM Training	$89,800.00
13-15902	Redbird XWIND	Full motion, teaches cross wing techniques	$27,900.00
13-15903	Redbird XWIND SE	Full motion, with more LCD exterior visuals	$29,900.00

FLIGHT SIMULATORS

CH VIDEO GAME JOYSTICKS

Your pulse quickens, your muscles tighten, adrenaline surges through your veins as you engage enemy aircraft in gut wrenching aerial combat. With CH Products simulation controllers, the realism of your next combat mission ascends to new heights.

FLIGHTSTICK PRO - • Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 12 buttons – X, Y, and Z axes for Aileron, Elevator, and Throttle control – 4 traditional push buttons – 1 eight direction POV HAT switch • Total of 80 programmable functions with Control Manager software (included) • Simple ambidextrous handle • Dual rotary trim wheels for precise adjustment of ailerons and elevators • Side Throttle wheel • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty

P/N 13-05613 ..... $79.75

FLIGHTSTICK - • Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 24 buttons – X, Y, and Z axes for Aileron, Elevator, and Throttle control – 3 traditional push buttons – 1 mode switch button – 3 four direction HAT switches – 1 eight direction POV HAT switch • Total of 176 programmable functions with Control Manager software (included) • Three color mode indicator LEDs on base • Realistic F-16 handle • Dual rotary trim wheels for precise adjustment of ailerons and elevators • Side Throttle wheel • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty. P/N 13-05615.....$122.75

PRO THROTTLE - • Windows 98, ME, 2000, XP, XP 64bit, Vista • 3 axes and 24 buttons – X and Y axes on miniature joystick – Z axis on accurate throttle sliding motion – 3 traditional push buttons – 1 mode switch button – 3 four direction HAT switches – 1 eight direction POV HAT switch • Total of 176 programmable functions with Control Manager software (included) • Three color mode indicator LEDs on base • Ergonomic left hand HOTAS design • Large sturdy base with 7 foot USB cable • Plug and Play driverless USB installation • Quality industrial components and construction • Two year limited warranty P/N 13-05616.....$124.75

MULTI-FUNCTION PANEL - Fully Programmable Keyboard for Gamers

Regain domination with the first revolutionary, fully programmable keyboard designed specifically for gamers! Expanding on the role of the traditional keyboard, the MFP allows the gamer to program individual keys to emulate any combination of the following: • Keystrokes • Joystick buttons • Mouse buttons • Joystick axis • Mouse axis Each wireless, programmable key is re-usable, inexhaustible and can be removed and re-positioned anywhere on the MFP tray enabling a completely new customizable layout for each of your gaming needs. System requirements: • Windows 98, ME, 2000, XP, XP 64bit • Control Manager 4.2 installed (included) • USB port

CH 400-602 Multi-Function Panel ..... P/N 13-05617..... $189.00
CH 400-603 MFP key Sets 26-50..... P/N 13-05618..... $82.75
CH 400-604 MFP Key Tray ..... P/N 13-05619..... $17.75

ON TOP ELITE BASIC APPROVED TRAINING DEVICE

Presenting pilots, instructors and flight schools with the next level of FAA-approved aviation training devices (ATD), the On Top-ELITE Basic ATD. Users retain all the benefits of our original PCATDs as well as the obvious next step—the ability to log additional time after the initial instrument rating is complete. This means it is a loggable training device for private pilot training, initial instrument rating and for maintaining currency requirements—by far the largest benefit of using a Basic ATD. The On Top-ELITE Basic ATD meets the FAA requirements* for a loggable training device for the following when flown under the supervision of a flight instructor: Instrument Currency: Per 14 CFR 61.57(c)(1), 6 instrument approaches, holding procedures, intercepting and tracking NAVAIDs. Instrument Rating Training: Per 14 CFR 61.65(e)(2) and 141.41(b), 10 hours towards the instrument rating experience requirements. Private Pilot Training: Per 14 CFR 61.109(k)(1), 2.5 hours towards the private pilot experience requirements. Proficiency Training: Per 14 CFR 141.57, any number of hours deemed appropriate by the school when conducting a special curricula dedicated to pilot proficiency. FAA Wing's Program: Per AC 61-91H Pilot Proficiency Program, paragraph 7 a (3), 1 hour of instrument training. P/N 14-01979 .....$5,795.00

ON TOP ELITE LIGHTED BASIC APPROVED TRAINING DEVICE

The On Top-ELITE Lighted Basic ATD meets the FAA requirements for a loggable training device for the following when flown under the supervision of a flight instructor:Instrument Currency: Per 14 CFR 61.57(c)(1), 6 instrument approaches, holding procedures, intercepting and tracking NAVAIDs. Instrument Rating Training: Per 14 CFR 61.65(e)(2) and 141.41(b), 10 hours towards the instrument rating experience requirements. Private Pilot Training: Per 14 CFR 61.109(k)(1), 2.5 hours towards the private pilot experience requirements. Proficiency Training: Per 14 CFR 141.57, any number of hours deemed appropriate by the school when conducting a special curricula dedicated to pilot proficiency. FAA Wing's Program: Per AC 61-91H Pilot Proficiency Program, paragraph 7 a (3), 1 hour of instrument training.

P/N 14-01978 .....$7,500.00

VISIT OUR WEBSITE OR CALL FOR COMPLETE DETAILS ON THESE ADDITIONAL MODELS.

AUDIOPILOT HEADSET ADAPTER

Wouldn't it be great to eliminate ambient room noises when you flight-sim?With AudioPilot you can! AudioPilot links your computer sound card to your aviation headset—and puts you in the virtual cockpit. It's easy to use—just plug AudioPilot between your headset and the computer and take off! Immerse yourself in the experience and enjoy flight-simming the way it's meant to be. • Feeds computer sound into headset with high fidelity • Connects mic for high-quality verbal communication • Compact, sturdy and convenient • Plug & play—no software to install AudioPilot is the perfect companion to your flight-sim setup— and the perfect gift for any armchair pilot. Order yours today! For GA Headsets - Computer Audio Plugs ..... P/N 13-04177 ..... $46.90

PS

SAITEK FLIGHT SIMULATION

CYBORG V.1 FLIGHT STICK

Ergonomic, ambidextrous stick with trigger and five buttons. Pinkie switch operates as a normal control or can be programmed as a 'shift button' to double up your control functions. Throttle lever for smooth, realistic engine control. Twist action rudder control. Unique removable legs for easy storage. Supported by Saitek's powerful SST programming software. Compatible: Windows 7, XP/XP64, and Vista. P/N 14-03011..... $31.50

CYBORG F.L.Y. 5 FLIGHT STICK

Tilting head mechanism. Adjustable head buttons – Adjustment tool – Stores securely in the stick base. Twin Throttle – Control separate engines or assign one throttle to the engine and the other lever to another function such as elevator trim. Shift button – Doubles up the number of assignable buttons on the Cyborg X when using the included ST Programming software. 12 buttons.
P/N 14-02958..... $69.75

SAITEK F.L.Y. 9 WIRELESS FLIGHT STICK FOR XBOX 360

Throttle and twist rudder controls for complete maneuverability. Unique base design features removable feet. Wireless connection syncs quickly and easily with your console. Superior control for your flight games!
P/N 14-02842.....$129.99

SAITEK X52 FLIGHT CONTROL SYSTEM

Enhanced game play through intuitive Multi-Function display (MFD). Illuminated buttons and MFD - ideal for low light environments. Rubber grips and ergonomic design for increased comfort and fatigue-free gaming. Includes Roger Wilco Chat software - the ideal accompaniment for on-line multiplayer gaming.
P/N 14-02845.....$138.85

SAITEK X52 PRO FLIGHT SYSTEM

The MFD screen is now interactive. Now you can display important in-game information such as the Radio Stack and interact with your games directly. Shipping with support for Microsoft's Flight Simulator X, there's also a Software Development Kit (SDK) included which allows budding programmers to create interactions with their own favorite games. P/N 14-00649.....$169.95

SAITEK PRO FLIGHT YOKE SYSTEM

Meets the exacting needs of the true flight simulation enthusiast. Stainless steel shaft, ergonomic controls, integrated chronograph and separate throttle quadrant. Use the integrated USB Hub to easily connect other parts of the Saitek Pro Flight range of products, such as additional Pro Flight Throttle Quadrant or Pro Flight Instrument Panel (sold separately). P/N 14-00598.....$149.85

SAITEK PRO FLIGHT INSTRUMENT PANEL 6 PACK

Featuring a stunning 3.5" colour LCD screen, the Instrument Panel can display 6 of the main cockpit instrument panels from Microsoft's Flight Simulator X. Choose between 6 different flight instruments at the touch of a button: Altimeter, Attitude Indicator, Airspeed Indicator, Compass, Turn and Slip indicator, and Vertical Speed.
P/N 14-03010.....$774.95

FLIGHT TRAINING COCKPIT ADVANCED PANEL

Advanced Panel offers a cockpit-realistic way to mount Saitek Pro Flight Simulation Instruments and Controls. The Advanced Panel twist-and-remove pre-cut tabs allow you to add Saitek hardware to your Advanced Panel over time and trade simulation devices between slots. Small tabs accommodate up to 10 Pro Flight Instruments. Each Saitek Flight Instrument Panel allows you to digitally switch between simulating eleven flight instruments. Alternatively, mount a Hannspree HL161ABB 16" Screen LED-Lit Monitor in one of several possible Panel face mounting configurations.
P/N 13-13088.....$319.00

SAITEK PRO FLIGHT THROTTLE QUADRANT

Upgrade your flight simulation experience with the Saitek Pro Flight Throttle Quadrant. This makes an ideal addition to the Saitek Pro Flight Yoke System to expand the number of controls for your flight simulation setup. Set the levels to control aircraft throttles, adjust elevator trim, fuel mixture or even to engage reverse thrust during landing. The Pro Flight Throttle Quadrant will work in any major flight simulation to give you all the control you need.
P/N 14-00601..... $59.95

SAITEK PRO FLIGHT RUDDER PEDALS

Complete your virtual pilot's controller setup and take flight simulation reality to the next level with the Pro Flight Rudder Pedals. Control the rudder and toe brakes of your aircraft with your feet - just like real pilots. Adjustable, smooth action gives you optimum control and realism, and brings you even closer to the experience of flying a real aircraft.
P/N 14-00602.....$159.85

PRO FLIGHT COMBAT RUDDER PEDALS

Inspired by pedal designs found in modern fighter aircraft such as the F16 or F35, the Rudder Pedals are constructed from a highly robust Di-cast alloy, providing durability and authenticity for the most demanding of aspiring pilots. Independent left and right brake axis allows for greater accuracy and precision when performing braking maneuvers. Self-centering rudder axis works in conjunction with a user configurable dampening adjuster, allowing users to define levels of pressure required to operate rudder controls.
P/N 14-02849.....$199.95

SAITEK PRO FLIGHT SWITCH PANEL

Upgrade your flight simulation experience for Microsoft Flight Simulator X with the Saitek Pro Flight Switch Panel. Whether attached to the Saitek Pro Flight Yoke System, free standing on a desk or mounted into your own cockpit setup, the Pro Flight Switch Panel is an ideal way to expand the number of controls for your flight simulation setup. P/N 14-00714..... $99.95

SAITEK PRO FLIGHT RADIO PANEL

Upgrade your flight simulation experience for Microsoft Flight Simulator X with the Saitek Pro Flight Radio Panel. LED displays work fully in real time with Flight Simulator X and 2004, removing the need to bring the radio stack up on screen. A set of switches and LED displays for use in controlling various aspects of flight simulation. COM1 / COM2 / NAV1 / NAV2 function. DME / ADF / XPDR functions. P/N 14-00969.....$154.75

SAITEK PRO FLIGHT TPM SYSTEM - THROTTLE/PROP/MIXTURE AXIS

Fully compatible with all major flight simulation titles and pre-existing flight simulation set ups, the Pro Flight Throttle, Pitch and Mixture System replicates the control surface found in light aircraft, such as the Cessna®, Piper® and Money Bravo®. Three durable aluminium rods allow users to accurately alter throttle, pitch and fuel mixture levels and an additional 9 fully programmable toggle switches provide a host of user defined controls during flight. Connectivity: USB 2.0 P/N 14-02850.....$149.95

SAITEK FLIGHT BACKLIT INFORMATION

Compatible with Microsoft® Flight Sim™ X and Flight Sim™ 2004, the Pro Flight Backlit Information Panel provides users with clear and authentic information during flight. Command tiles not illuminated remain invisible to the naked eye, allowing aspiring pilots to accurately access the information they need, when they need it. Connectivity: USB 2.0. P/N 14-02848.....$149.95

SAITEK PRO FLIGHT MULTI-PANEL

Upgrade your flight simulation experience for Microsoft Flight Simulator X with the Saitek Pro Flight Multi Panel. LED displays work fully in real time with Flight Simulator X and 2004, removing the need to bring the autopilot up on screen. A set of switches and LED display for use in controlling various aspects of flight simulation. Full Autopilot panel with associated setting controls: Auto Throttle, Flaps, Elevator Trim wheel. P/N 14-00968.....$149.95

SAITEK PRO FLIGHT INSTRUMENT PANEL

Featuring a stunning 3.5" colour LCD screen, the Instrument Panel can display 6 of the main cockpit instrument panels from Microsoft's Flight Simulator X. Reacting and updating in real time with events from the game, the Instrument Panel brings an extra level of realism to your flight simulation setup. Choose between 6 different flight instruments at the touch of a button: Altimeter, Attitude Indicator Airspeed Indicator Compass Turn and Slip indicator, Vertical Speed. P/N 14-00870.....$149.95

PS

JEPPESEN AIRWAY SERVICES

JEPPESEN ENROUTE LOW & TERMINAL CHARTS

Geographic Coverage	Part No.	First Year Total	# of 2"Binders Required Order Separately
Full USA	USA05	$1,111.34	7
	All 48 Continuous States		
East	USB05	$557.00	4
AL, CT, DE, DC, FL, GA, IL, IN, KY, MA, MD, ME, MI, MS, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VT, WI, WV			
East & Central	USC05	$854.00	6
AL, AR, CT, DE, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA,,MD, ME, MI, MN, MO, MS, NC, ND, NE, NH,NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV			
Central	USD05	$530.00	3
AR, IA, IL, IN, KS, LA, MI, MN, MO, ND, NE, OK, SD, TX, WI			
Central & West	USE05	$666.00	4
AR, AZ, CA, CO, IA, ID, IL, IN, KS, LA, MI, MN, MO, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA, WI, WY			
North Central	USN05	$335.00	2
CO, IA, KS, MN, MO, MT, ND, NE, SD, WY			
Great Lakes	USP05	$324.00	2
IL, IN, KY, MI, OH, WI			
Northeast	USR05	$330.00	2
CT, DE, DC, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV			
Southeast	USS05	$286.00	2
AL, FL, GA, MS, NC, SC, TN			
South Central	UST05	$295.00	1
AR, LA, NM, OK, TX			
N. Cntl. & Gt. Lakes	USU05	$512.00	3
CO, IA, IL, IN, KS, KY, MI, MN, MO, MT, ND, NE, OH, SD, WI, WY			
S. & S. Central	USW05	$449.00	2
AL, AR, FL, GA, LA, MS, NC, NM, OK, SC, TN, TX			
California	CAL05	$155.00	1
CA			
Florida	FLA05	$130.00	1
FL			
Texas	TEX05	$186.00	1
TX			
Gulf of Mexico (Helicopter Service), Instrument approaches within 200nm of the coast at airports with weather reporting capability. Also includes Gulf of Mexico Area chart.			

JEPPESEN AIRWAY MANUAL EXPRESS

WESTERN AREA

Northwest, J-NW:.....Washington, Oregon, Idaho
West Central, J-WC:..... Montana, Wyoming, North Dakota, South Dakota
Southwest, J-SW: .....Nevada, Utah, Arizona, New Mexico, Colorado
California, J-CA: .....California
Alaska, J-AK:..... Alaska

CENTRAL AREA

Central, J-CN:.....Colorado, Nebraska, Kansas, Missouri
North Central, J-NC:.....Minnesota, Iowa, Wisconsin
Great Lakes, J-GL: .....Wisconsin, Illinois
East Central, J-EC: ..... Indiana, Ohio
South Central, J-SC: .....Oklahoma, Arkansas, Louisiana
Texas, J-TX:.....Texas
Michigan, J-MI: .....Michigan

EASTERN AREA

Northeast, J-NE:.....Maine, Massachusetts, Connecticut,
.....New Hampshire,Rhode Island, Vermont
East, J-EA:..... New York, Pennsylvania, New Jersey
Mid-Atlantic, J-MA:.....Virginia, Maryland, Delaware, West Virginia, D.C.
Southeast, J-SE: .....Georgia, North Carolina, South Carolina
Mid-South, J-MS:..... Kentucky, Tennessee, Mississippi, Alabama
Florida, J-FL:..... Florida

1-1/2" Vinyl Binder (Holds 1 single issue) P/N 13-22792 .....$42.80

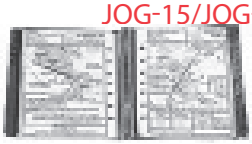
Single Issue Coverage	Single Issue Part No.	Single Issue Price
Florida	13-22710	$42.99
Mid-South	13-22715	$59.75
Southeast	13-22720	$64.99
Mid-Atlantic	13-22725	$37.50
Texas	13-22730	$59.75
South Central	13-22735	$42.50
Central	13-22740	$59.75
California	13-22745	$49.50
Southwest	13-22755	$51.75
Northwest	13-22760	$39.50
East	13-22765	$58.75
Northeast	13-22770	$36.99
Michigan	13-22775	$35.50
East Central	13-22780	$49.75
Great Lakes	13-22785	$48.50
North Central	13-22790	$58.75
West Central	13-22795	$30.50

Subscription Service available by Special Order Only. Please call or submit order by email and specify which area is required.

PS

JEPPESEN AIRWAY ACCESSORIES

JOG-15/JOG-30 CHART ORGANIZER



Transparent Pockets are ideal for holding trip charts, flight plans, aircraft checklists, etc. Index tabs & spiral binding make it easy to access the chart you want.

15 pocket.....P/N 13-62116-5 ..... $12.60
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CHART POCKET

Transparent durable vinyl pocket holds two enroute charts. 7-hole punched for binder.

P/N 8063 ..... $3.75

JEPPESEN APPROACH CHART POCKETS

Heavy-duty durable transparent plastic pocket is ideal for holding Jeppesen approach charts, trip charts, flight plans, and aircraft checklists. Convenient deign allows charts to be displayed, then easily and quickly removed and rearranged without opening and closing rings in Jeppesen binders and 3-ring kneeboard. Features 7-hole punch, unique thumb grip and offset pocket. Excellent for add-on and replacement pockets for 3-ring kneeboard and Airway Binders. 3 Pack.

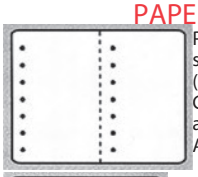
P/N 13-07572 ..... $5.95

APPROACH CHART PROTECTOR

Protection plus. Transparent plastic envelopes protect your most frequently used approach charts, while accepting marks from almost any writing instrument. Easy Erase. Set of 10.

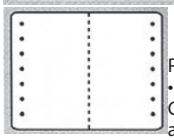
P/N 13-21748 ..... $5.00

MULTI PURPOSE PRINTER PAPER FOR JEPPESEN BINDERS



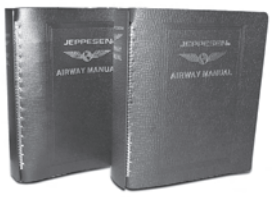
Perforated, 7 hole (center & edge) • 500 Letter size sheets • Print up to 1,000 Jeppesen size sheets (5.5"x 8.5") • Create print from your software • Checklist/Procedures • Schedule/itinerary •Phone/ address • Pilot Notes • Flight time/ Expense Log • Approach Charts P/N 13-33003 ..... $15.15

JEPP VIEW PRINTER PAPER FOR JEPPESEN BINDERS



Perforated, 7 hole (edge only) • 500 Letter Size sheets • Prints 1,000 Jeppesen size sheets (5.5"x8.5") • Create & print from your software – area charts & approach charts P/N 13-33002 ..... $15.15

JEPPESEN BINDERS



Functional, durable, protects & lasts. Jeppesen's leather binders are made from top-grain cowhide and include steel hinges and safety locks to secure the rings. The sturdy Duraflo binder has the look and the feel of our leather binders. The flo-mold process laminates and binds sturdy, ethylene acetate with a clear tough suryln outer surface. Available in brown and black.

Standard leather 1" Binder. ..... P/N 13-03251..... $46.55
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LB-2 Leather, 2" Rings, Stay-Open Bar..... P/N 13-21738..... $97.00

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CREW OUTFITTERS AIRWAY MANUAL LEATHER BINDERS

Try these quality, textured leather airway manual binders. The binders come with seven rings that accommodate the standard size airway manual pages and tabs. Equipped with two inside pocket sleeves for even more organization.

2" ..... P/N 14-00557..... $12.50

CD-POCKET

Durable vinyl pocket holds 2 CD-ROMs, 7 hole punched for binder. Set of 10.

P/N 13-62800 ..... $11.95

PILOTS NOTES

Write it down! Handy for flight planning, enroute notes. Fits Jeppesen Binders. Pkg of 500 sheets.

Lined Pilots notes..... P/N 13-06806..... $5.70
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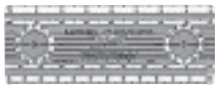
PV-5 IFR Enroute Plotter
Size 3-3/16" x 8-1/2"
P/N 13-21718 ..... $9.70



CHARTABS

Quick reference tabs labeled, "Departure, Destination and Alternate" help you find your place fast. Plastic color coded.

Set of 3. ..... P/N 13-21752 ..... $7.50

MULTI-TABS

Make your binder work like you do. Write you own labels to separate you contents. Erasable, reusable. Lines for notes. Set/13. P/N 8455 ..... $5.95

JEPPESEN STATE TABS SET

Easily identify your charts with these tabs.Organize your charts and text sections by state. One set.

P/N 13-07574 ..... $11.50

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Simplify Location of desired charts and index sections in your airway manual or trip kit.

Set of Alphabetical Tabs.... P/N 13-62541-5 .....$19.00
Set of Sectional Tabs..... P/N 13-62513-5 .....$20.95

AIRWAY MANUAL ACCESSORY PACK

Each pkg Contains: • Chartabs (set of 3) • Approach chart protectors (set of 10) •NavLog/Flight Plan Forms (set of 50) • Multi-tabs (set of 13) • Pilot Notes (set of 25 lined) P/N 13-62604-6 ..... $23.75

VFR/NAVIGATION LOG PAD

Record all of your flight information in a single convenient log. 50 sheets. Size: 11"x 8.5"

P/N 8846 ..... $10.95

NAVIGATION LOG / VFR FLIGHT PLAN FORM

Perfect Flight Planning partner. Features a weather log. Two sided fits into Jeppesen binders for easy in flight reference. Package of 100. Size: 5.5" x 8.5"

P/N 13-21754 ..... $5.95

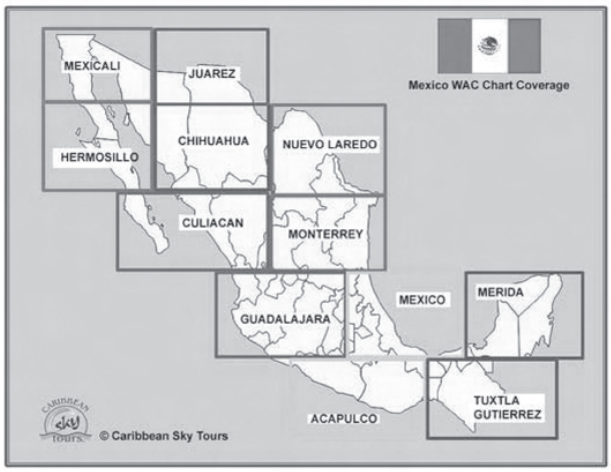
IFR FLIGHT FILE

This handy chart planner and organizer holds NOS or Jeppesen approach plates, SIDs and STARs, and airport diagrams. Easy to load static-hold chart protectors, and fits yoke clips & keenboards. Important reference information relating to IFR departure, enroute, approach, and alternates. P/N 13-55016.....$19.95

PS

REFERENCE MAPS – AIR MAPS

MEXICO VFR WAC CHARTS



Published by INEGI - Mexico's National Institute of Statistics, Information & Geography. These World Aeronautical Charts (WAC) were released in 2008 and contain topographical, airport and navaid information. Mexico is divided into 12 regions and 2 regions are printed on each chart for a total of 6 individual charts. Updated every 4 years. SCALE 1:1,000,000.
Note that aircraft landing in Mexico that departed from Central America, South America or the Caribbean are subject to special AOE requirements and can only use the Cozumel and Tapachula airports as AOE's. Detailed airport information and fuel availablilty can be found in the Pilot's Guide.

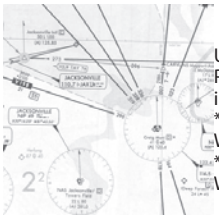
Description	Part No.	Price
Monterey-N.Laredo	13-06079	$14.95
Acapulco-Mexico	13-06080	$14.95
Tuxtla Gutierz-Merida	13-06081	$14.95
Chihuahua-Juarez	13-06082	$14.95
Hermosillo-Mexicali	13-06083	$14.95
Guadalajara-Culiacan	13-06084	$14.95

PILOTS FREE FLIGHT ATLAS - USA

Base cartography is the US Road-Atlas 1: 2.000.000 which includes mountain ranges, lakes, rivers, etc. . As well, all other elements such as, cities, towns. Parks and points of interest or historic value and of course, the railways and motor-ways themselves.
To this, they have added all airports in USA (over 5,500) and colour coded them by runway length /surface and category ,ie. International, Regional, Civil/Military, etc.. VOR/DME , Reporting points, Waypoints), Volmet frequencies and special Use Airspace are also shown making our new "Pilots' Atlas" the first of it's kind. Keymap for 106 pages cartography. Scale 1:2.000.000. Distance, Pilot Metro and Weather Radar Map
Satellite Photo. Political Map. Cartography Captains Corner Airport Directory with over 5,500 airports. Captains Corner Conversion tables + crosswind component P/N 13-07299..... $31.95

PILOTS FREE FLIGHT ATLAS - EASTERN HEMISPHERE (EUROPE, MIDDLE EAST, & SOUTHEAST, ASIA)

JNC scale, topographical charts are used showing over 4,500 airports Waypoints, VOR/DME, NDB´s and special use airspace are included, plus weather frequencies, points of interest, landmarks, airport-directory with ICAO-codes, railways, rivers, major highways, just to name a few. Airports are colour coded by runway length and surface. International/ regional Aerodromes are coded by symbol shape. Pilots now have the ability to point out objects on the ground or know immediately where they are in relation to surrounding airports or points of interest: an all-in-one source of information for pre-flight or during flight. P/N 13-07300..... $38.75



IFR AREA CHARTS - U.S.

United States Government Flight Information Publication IFR Area Charts - U.S. Area consisting part of: * A-1 Minneapolis/St. Paul * Detroit * St. Louis * Atlanta * Jacksonville * Miami * Washington * A-2 San Francisco * Los Angeles * Phoenix * Denver * Kansas City * Dallas/Fort Worth * Chicago/Milwaukee
P/N 13-00773.....$4.45

AVIATOR'S QUICK REFERENCE MAPS

Flight Case Map - US 5th Edition
This is the map that actually started it all and launched our business in 1988. The Aviators' Quick Reference Map has become standard equipment in the flight bags of thousands of professional pilots all over the world and is standard issue to the pilots of several major airlines.
Colorful and accurate, these maps clearly depict state boundaries, time zones, major cities and towns, rivers, lakes, mountain ranges, national parks and points of interest. Also listed are major airports and VOR's (with frequencies for easy identification). Hundreds of interesting state by state facts and figures are listed on the back side. Two finishes: laminated or tearproof. The laminated version has a write-on/wipe-off surface. Either is durable enough to with stand years of use. A great aid for making more interesting PA's. When folded, laminated map measures 10.5" x 16" and tearproof is 8" x 10.75". Both fit perfectly in a flight case. Scale 1"= 90 miles.
Laminated U.S.....P/N 13-05677..... $31.95
Tearproof U.S .....P/N 13-05678..... $28.95
Tearproof Europe .....P/N 13-05679..... $28.95
Tearproof Latin America .....P/N 13-05680..... $29.95
Tearproof Alaska w/ Canada .....P/N 13-05687..... $28.95

U.S. QUICK REFERENCE WALL MAP

Due to popular demand, we have come up with an extra large version of our popular Aviators' Quick Reference Map and made it wall-size. Perfect for use at home, office, hangar, briefing room, etc.
This map depicts state boundaries, time zones, major cities and towns, rivers, lakes, mountain ranges, national parks and other points of interest. Also listed are major airports and VOR's (with frequencies for easy identification).
It is ideal for flight planning or "pinning" your favorite destinations. Measures 33" x 23" or 52" x 36" and is laminated so that you can write on it and just wipe it off. Makes for an attractive wall mount anywhere! Shipped to you rolled with no creases. Scale: 1"= 55 miles.
Wall Map U.S. Expanded.....P/N 13-05688..... $47.95

AVIATOR'S QUICK REFERENCE DESK MAP - US

The same map as the US Flight Case Map, without the folds and a 1 inch border added with lattitudes and longitudes. Heavy map paper and laminate. Full map size: 33 1/2" x 23"
PN 13-05690..... $30.95

FOLDED PILOT'S MAP

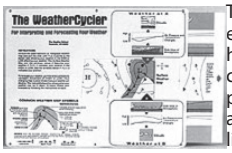
This map measures 3 feet by 2 feet and is encapsulated on both sides by a rugged 3 mil laminate for durability. The map is extremely detailed and includes hundreds of airports (civil and military), vor's, ndb's, terrain features, national parks, cities, time zones, etc. The back of the map has a very detailed AM radio frequency guide for all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. Contains state information including capitals, square mileage, population, and nick names along with each state flag. Great for pilots and aviation enthusiasts. Flight plan information, ATC light gun signals, cruising altitudes, and a crosswind component chart included.
Folded Pilot's Map.....P/N 13-11247..... $18.75
Pilot's Laminated Wall Map .....P/N 13-11248..... $18.75

AIR TRAVELERS MAP

Intended for the airline or business jet passenger, this flight reference map is designed primarily for trip planning and referencing landmarks of the USA while in flight.
Packed with useful information on cities, parks, highways, and other points of interest from California to Maine.
The folded flight map is printed on durable tear-proof paper and fits perfectly in a seat pocket or briefcase, making it a great gift for the "Frequent Flyer"! Flight Map Measurements: 8 1/2" x 11".
P/N 14-02827..... $18.95

PS

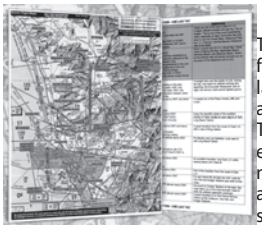
WEATHERCYCLER WEATHER KIT



This slide chart gives pilots easy-to-understand explanations of weather systems including highs, lows, cold fronts, & warm fronts. The chart shows various weather symbols and provides a guide to become very familiar with aviation weather maps. Laminated for long life. Includes instruction booklet & study guide. Size: 8.5" x 11". P/N 13-29949..... $10.85

FULL-COLOR CLOUD CHART

"Clouds: A Guide to the Sky" shows full-color photos of 30 different cloud formations, (with descriptions) and the weather associated with each. 25" x 37" on heavy stock. P/N 13-14758.....$5.95



SCENIC FLIGHT MAPS

The Scenic Flight Maps give you many different routes for sightseeing to the major landmarks, famous places in Los Angeles and Orange County or San Diego area. The multiple color graphs and route pointers are really easy to read and follow. The map is laminated to keep from daily tears and protects from liquid spill. On the back side, it shows three columns: Route, Need to Know and Sightseeing sections, to better guide you in your travel without confusion or time lost.

Scenic Flight Maps L.A./O.C..... P/N 13-05667 ..... $11.95
Scenic Flight MapsSan Diego ..... P/N 13-05668 ..... $11.95

AERONAUTICAL CHART USER'S GUIDE

A critical reference tool for any navigator, the ninth edition of the Aeronautical Chart User's Guide presents the most up-to-date information on charts adhering to Visual Flight Rule (VFR) and Instrument Flying Rule (IFR). Number of Pages: 80 Dimensions: 8.5 x 11 x 0.8 in.

P/N 13-11595.....$9.95

VFR WALL PLANNING CHART

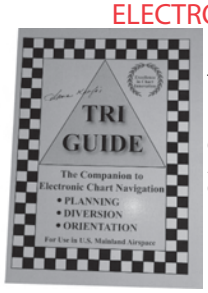
U.S. VFR Wall Planning Chart is designed for VFR preflight planning and provides aeronautical and topographic information of the conterminous U.S. The aeronautical information includes airports, radio aids to navigation, Class B airspace and special use airspace. The topographic information includes city tint, populated places, principal roads, drainage patterns and shaded relief. This chart, 59x36 inches flat, is updated annually. P/N 13-14786.....$8.95

CANADA FLIGHT SUPPLEMENT IFR CHART

The Canada Flight Supplement is a joint civil/military publication. It contains information on Canadian and North Atlantic aerodromes and is used as a reference for the planning and safe conduct of air operations. Features: •General: Tables, legends and associated information pertinent to interpretation of the supplement. •Aerodrome Directory •Planning •Radio Navigation and Communications •Military: Flight procedures and data, including sections on procedures for flight in the USA, North Atlantic and Alaska, air/ground communications and military training routes/areas. • Emergency procedures. •The Canada Flight Supplement, measuring 5 1/4 by 8 1/4 inches, is available in English or a bilingual format. Data for the province of Quebec and the National Capital Region are presented in French in the bilingual edition.

English Version..... P/N 13-04424 ..... $18.75
Bilingual Version..... P/N 13-04550 ..... $22.95

TRI GUIDE THE COMPANION TO ELECTRONIC CHART NAVIGATION



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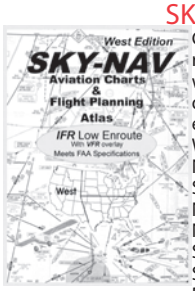
SKYNAV AVIATION ATLAS



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PS

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Sectional & VFR Terminal Charts for conterminous United States, Hawaii, Puerto Rico and Virgin Islands

AERONAV SECTIONAL CHARTS

Sectional aeronautical charts are designed for visual navigation of slow to medium speed aircraft. The topographic information featured consists of the relief and a judicious selection of visual checkpoints used for flight under visual flight rules. The checkpoints include populated places, drainage patterns, roads, railroads, and other distinctive landmarks. The aeronautical info on Sectional Charts includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions, & related data. (Scale 1"=6.86 nm/ 1:500,000. 60"x20" folded to 5"x10") Revised semi-annually, except most Alaskan charts are revised annually.

Sectional Charts ..... P/N 8403 ..... $7.50
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NOTE: When ordering charts, complete part no. with first 3 letters of chart title. Ex.: Seattle sectional is P/N 8403SEA.

For Subscription service: Add -SUB (example: 8403SEA-SUB) and a new chart will be shipped & billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require credit card no. on file.

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Billings	Omaha	St. Louis	Atlanta	Hawaii	Ketchikan	Salt Lake City
Twin Cities	Chicago	Cincinnati	El Paso	Kodiak	Cape Lisburn	Kansas City
Green Bay	Detroit	Washington	San Antonio	Dutch Harbor	Point Barrow	Charlotte
Lake Huron	New York	Los Angeles	Houston	Aleutian Islands	Fairbanks	Cold Bay
Montreal	San Francisco	Phoenix	New Orleans	Western	Dawson	
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CHART MASTER

Chart Master is Aircraft Spruce's online chart selection program designed to tell you exactly which aviation charts you will need for the route you intend to fly. Just plug in the 3 letter airport identifiers for your departure and destination airports, and Chart Master will provide you with a list of all of the charts needed for your route. Select VFR (sectional, terminal, WAC, AFD, or IFR (Low altitude enroute) or both and order any or all of the charts listed by Chart Master. This program is available on line at www.aircraftspruce.com.

AERONAV VFR TERMINAL AREA CHARTS

Terminal Area Charts depict the airspace designated as Class B Airspace. The information found on these charts, while similar to that found on Sectional Charts, is shown in much more detail because of the larger scale. These charts should be used by pilots intending to operate from airfield within or near a Terminal Control Area or an Airport Radar Service Area. Locations of Terminal Area Charts are indicated by a • on the Sectional Chart indexes. (Scale 1 inch = 3.43nm/1:250,000. 25 x 20 inches folded to 5 x 10 inches.) Revised semi-annually, except Puerto Rico/Virgin Islands is revised annually.

Terminal Area Charts ..... P/N 8064 ..... $5.25
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For SUBSCRIPTION service: Add -SUB (example: 8064LOS-SUB) and a new chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require credit card number on file.

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Boston	Honolulu	New Orleans	Seattle
Charlotte	Houston	New York	St. Louis
Chicago	Kansas City	Philadelphia	Orlando/Tampa
Cincinnati	Las Vegas	Phoenix	Washington
Cleveland	Los Angeles	Pittsburgh	Anchorage/
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AERONAV AIRPORT / FACILITY DIRECTORY

The Airport/Facility directory is a pilot's manual which contains data on public and joint use airports, seaplane bases, heliports, VFR airport sketches, NAVAIDs, communications data, weather data sources, airspace, special notices, VFR waypoints and operational procedures. The seven volumes cover the conterminous United States, Puerto Rico, and the Virgin Islands. Includes data that cannot be readily depicted in graphic form; e.g., airport hours of operation, types of fuel available, runway data, lighting codes, etc. $4.50 ea.

Area	Part No.
Southwest U.S.	AFD-SW
Northwest U.S.	AFD-NW
So. Central U.S.	AFD-SC
No. Central U.S.	AFD-NC

Area	Part No.
East Central U.S	AFD-EC
Southeast U.S.	AFD-SE
Northeast U.S.	AFD-NE

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This chart wallet helps pilots organize, hold, carry, and display 22 standard NOS charts conveniently. The black padded cover features the silver wings logo. There ar ten double-sided, clear vinyl organizer pockets riveted to the cover. Along with the pockets in the front and back covers, these pages hold the charts so you can easily find them in a busy or turbulent cockpit environment. Measures 6.5"x 11.5" w/ 2.5" spine.

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▲Indicates Biennial Revision

World Aeronautical Charts for the conterminous U.S., Mexico, & Caribbean Areas

WORLD AERONAUTICAL CHARTS

World Aeronautical Charts by NOS are designed to provide standard for the land areas of the world in a size and scale convenient for navigation by moderate-speed aircraft. Topographic information includes cities and towns, principal roads, railroads, distinctive landmarks, drainage, and relief. Aeronautical information includes visual and radio aids to navigation, airports, airways,restricted areas, obstructions, and other data considered pertinent. Scale 1:1,000,000 or 1" to 13.7 nautical miles, less detailed than Sectional & Terminal Area Charts, but useful for longer distance planning. Revised annually. 12 charts cover the US

WAC Charts ..... P/N 8567 ..... $9.50 ea
Set of 12 U.S. WAC charts ..... P/N 8805 ..... $113.95

NOTE: When ordering charts, complete part no. with chart number.
Example: WAC chart CF-17 is P/N 8567CF-17.

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Chicago Helicopter Route Chart	P/N 13-30709	$13.25
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World Aeronautical Charts for Alaska

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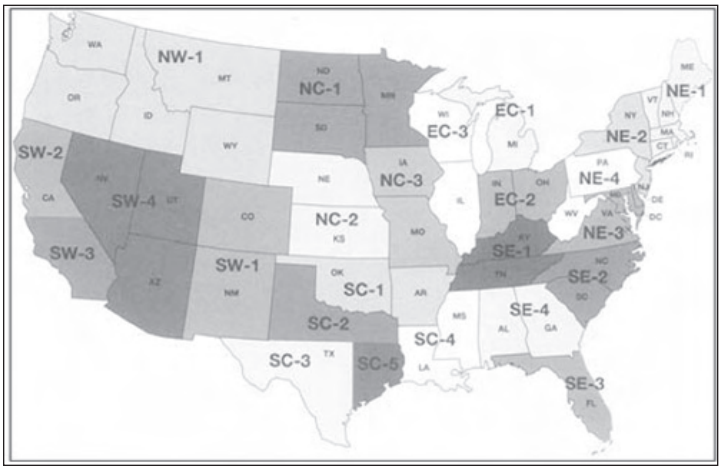
Operational Navigation Charts (ONC). ONCs support high speed radar navigation requirements at medium altitudes. Other uses include visual, celestial, and radio navigation. In the absence of Tactical Pilotage Charts, they satisfy DoD requirements for enroute visual and radar navigation in low altitude operations. The sheet size is 42 by 57-1/2 inches covering eight degrees of latitude. (Scale 1:1,000,000)

Area	Part No.	Price
ONC H-22	13-07699	$6.00
ONC G-22	13-07707	$6.00



TERMINAL PROCEDURES COVERAGE OF THE CONTERMINOUS U.S.

Includes: • Instrument Approach Procedure (IAP) Charts •Departure Procedure (DP) Charts • Standard Terminal Arrival (STAR) Charts • Charted Visual Flight Procedures (CVFP) • Airport Diagrams

IAP Charts are designed to provide an IFR descent from the enroute environment to a point where a safe landing can be made. DP charts are Air Traffic Control (ATC)-coded departure procedures which have been established at certain airports to simplify clearance delivery procedures. STAR charts are ATC-coded IFR arrival routes established for certain airports to simplify clearance delivery procedures. CVFPs are an operational technique designed to move air traffic safely and expeditiously. In addition to conventional visual approach procedures, it has been necessary to specify routes/altitudes to enhance noise abatement at some locations. CVFPs have been developed to provide a pictorial display of these visual arrival routes. Airport Diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations and provide information for updating geodetic position navigational systems aboard aircraft.

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South Central Vol.2	13-01332	13-01365
South Central Vol.3	13-01333	13-00774
South Central Vol.4	13-01334	13-00105
South Central Vol.5	13-01545	13-02002
Southeast Vol. 1	13-01335	13-01366
Southeast Vol. 2	13-01336	13-01367
Southeast Vol. 3	13-01337	13-01368
Southeast Vol. 4	13-01338	13-00106
Southwest Vol. 1	13-01339	13-01369
Southwest Vol. 2	13-01340	13-01370
Southwest Vol. 3	13-01445	13-01446

Description	Bound P/N	Loose Leaf P/N
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East Central Vol. 2	13-01342	13-01355
East Central Vol. 3	13-01343	13-01356
North Central Vol. 1	13-01344	13-01357
North Central Vol. 2	13-01345	13-01358
North Central Vol. 3	13-01346	13-01359
Northeast Vol. 1	13-01347	13-01360
Northeast Vol. 2	13-01348	13-01361
Northeast Vol. 3	13-01349	13-01362
Northeast Vol. 4	13-02062	13-02063
Northwest Vol. 1	13-01350	13-01363

Area	Part No.	Price
Caribbean Low Enroute 1/2	13-07902	$4.45
Caribbean Low Enroute 3/T3	13-07903	$4.45
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Caribbean Low Enroute T1/T2	13-07905	$4.45

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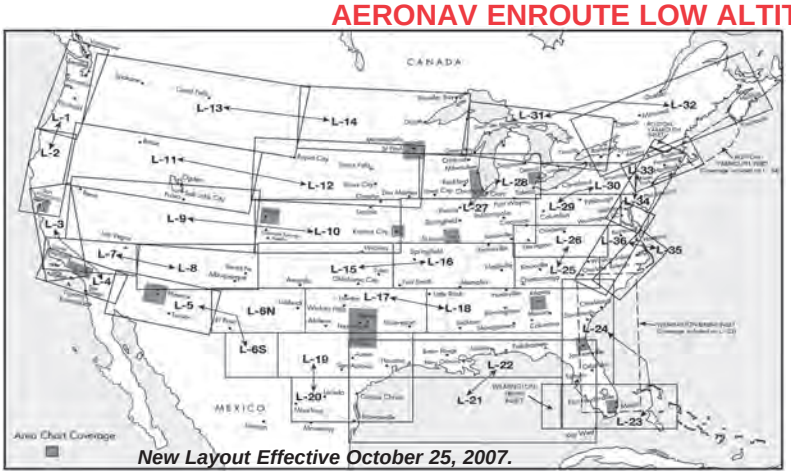
INSTRUMENT NAVIGATION CHARTS

AERONAV ENROUTE LOW ALTITUDE CHARTS



New Layout Effective October 25, 2007.

Enroute low altitude charts for conterminous U.S. (includes area charts)

Enroute Low Altitude charts (Conterminous U.S. and Alaska) provide aeronautical information for navigation under instrument flight rules below 18,000 feet MSL. Information includes: airways; limits of controlled airspace; position, identification, and frequencies of radio aids to navigation (Alaska 4-color series includes geographic coordinates); airports with terminal air/ground communications; minimum enroute and obstruction clearance altitudes; airway distances; reporting points; special use airspace areas; military training routes. Scales vary from 1 inch = 5nm to 1 inch = 20nm. 50 x 20 inches folded to 5 x 10 inches. Revised every 8 weeks. Area charts, which show congested terminal areas at a large scale, are included with subscriptions to any conterminous U.S. Set Low (Full set, East or West sets). Chart L-28 covers the Washington-Boston corridor at a scale similar to an Area Chart. Charts are revised every 8 weeks.

Enroute Low Altitude Charts..... P/N 8070L..... **$4.45/ea.**

Full Set (L1/2-L27/28 & Area Chart)
P/N 13-30714 .... **$84.25**

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P/N 13-30717 .... **$53.00**

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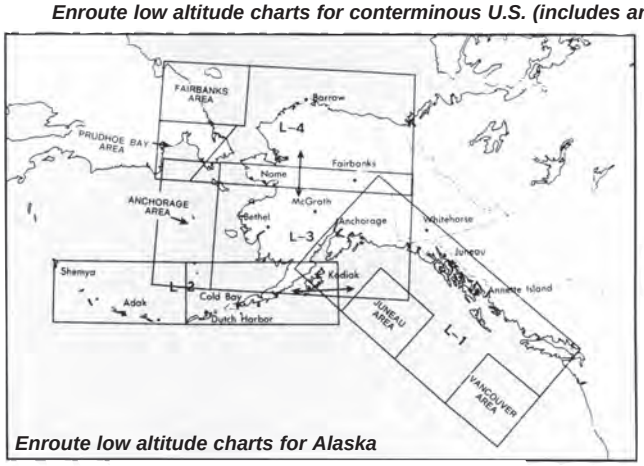
For individual charts please call 877-4-SPRUCE or visit our website at: www.aircraftspruce.com



Enroute low altitude charts for Alaska

IFR GULF OF MEXICO CHART - WEST P/N 13-08004 .....**$16.50**

IFR GULF OF MEXICO CHART - CENTRAL P/N 13-08003 .....**$17.50**

NOTE: When ordering individual charts, complete part number with the chart number. Example: Enroute Low Altitude Chart L-10 is P/N 8070L-10.

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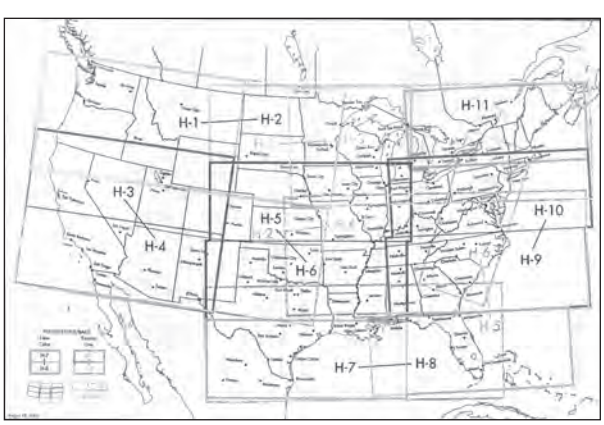
AERONAV IFR ENROUTE HIGH ALTITUDE CHARTS

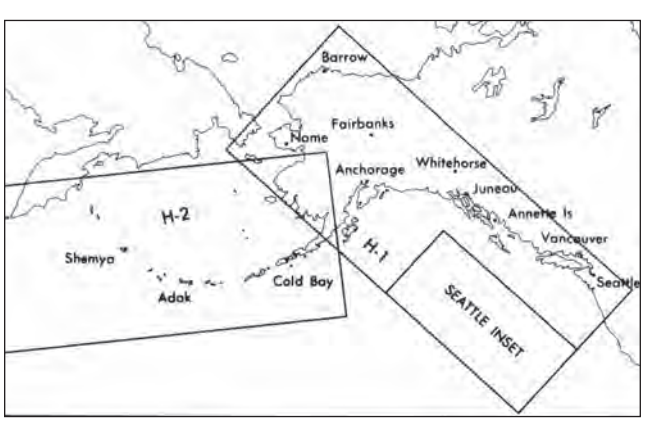
IFR Enroute High Altitude Charts (Conterminous U.S. and Alaska) are designed for navigation at or above 18,000 feel MSL. This four color chart series includes: Jet route structure; VHF radio aid to navigation (frequency, ID, channel, geographic coordinates); selected airports; reporting points. (Scales vary from 1" = 78nm to 1" = 30nm. 55 x 20" folded to 5 x 10".) Revised every 8 weeks.

NOTE: When ordering individual charts, complete part no. with the chart no. Ex: Enroute High Altitude Chart H1/2 is P/N 8075-H1/2.

Full Set (H1/H2, H3/H4, H5/6, H9/H10, H11),(H3/H4, H5/H6, H7/H8-very small area,H9/H10), (H3/H4-very small area, H5/H6, H7/H8, H9/H10, H11) P/N 8075-1 .....**$26.25**

For SUBSCRIPTION service: Add -SUB (example: 8075-H1/2-SUB) and a new chart will be shipped and billed to you automatically at every revision until you cancel the subscription. Subscription chart orders require a credit card number on file.





PS

CANADIAN AIA CHARTS

CANADIAN VNC (VFR) CHARTS

The VNC is used by VFR pilots on short to extended cross-country flight at medium altitudes and at low to medium airspeeds. These charts show aerodrome data, airspace information, radio aids to navigation, air/ground communications, and elevation with contour lines, tints and shaded relief.

VNC

Item	Title	Part No.	Price
5000	VNC Toronto	13-04425	$18.75
5001	VNC Sault Ste Marie	13-04434	$18.75
5002	VNC Montreal	13-04433	$18.75
5003	VNC Moncton	13-04466	$18.75
5004	VNC Vancouver	13-04467	$18.75
5005	VNC Calgary	13-04468	$18.75
5006	VNC Regina	13-04469	$18.75
5007	VNC Winnipeg	13-04470	$18.75
5008	VNC Thunder Bay	13-04436	$18.75
5009	VNC Timmins	13-04435	$18.75
5010	VNC Chicoutimi	13-04471	$18.75
5011	VNC Anticosti	13-04472	$19.75
5012	VNC Gander	13-04473	$18.75
5013	VNC Kitimat	13-04474	$18.75
5014	VNC Prince George	13-04475	$18.75
5015	VNC Edmonton	13-04476	$18.75
5016	VNC Flin Flon	13-04477	$18.75
5017	VNC Big Trout	13-04478	$18.75
5018	VNC James Bay	13-04479	$18.75
5019	VNC Wabush	13-04480	$18.75
5020	VNC Goose Bay	13-04481	$18.75
5021	VNC Atlin	13-04482	$18.75
5022	VNC Fort Nelson	13-04483	$18.75
5023	VNC Athabasca	13-04484	$18.75
5024	VNC Wollaston	13-04485	$18.75
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Item	Title	Part No.	Price
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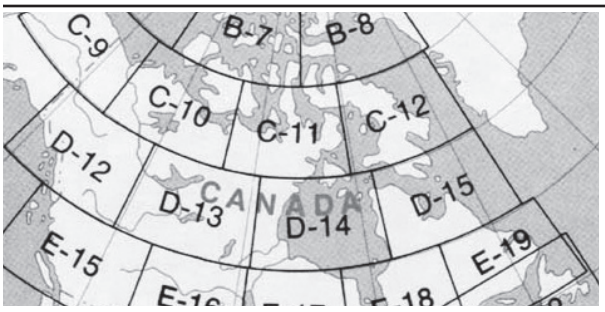
5028	VNC Whitehorse	13-04489	$18.75
5029	VNC Ft Simpson	13-04490	$18.75
5030	VNC Yellowknife	13-04491	$18.75
5031	VNC Rankin	13-04492	$18.75
5032	VNC Coats Isl.	13-04493	$18.75
5033	VNC Frobisher	13-04494	$18.75
5034	VNC Klondike	13-04495	$18.75
5035	VNC Great Bear Lake	13-04496	$18.75
5036	VNC Bathurst Inlet	13-04497	$18.75
5037	VNC Baker Lake	13-04498	$18.75
5038	VNC Foxe Basin	13-04499	$18.75
5039	VNC Cumberland	13-04501	$18.75
5040	VNC MacKenzie	13-04502	$18.75
5041	VNC Amundsen	13-04503	$18.75
5042	VNC Cambridge	13-04504	$18.75
5043	VNC Boothia	13-04505	$18.75
5044	VNC Baffin Bay	13-04506	$18.75
5045	VNC Banks Island	13-04507	$18.75
5046	VNC Resolute	13-04508	$18.75
5047	VNC Devon Island	13-04509	$18.75
5048	VNC Hazen Strait	13-04510	$18.75
5049	VNC Ellesmere	13-04511	$18.75
5050	VNC Alert	13-04512	$18.75
5099	VNC Alaska Highway	13-04516	$18.75

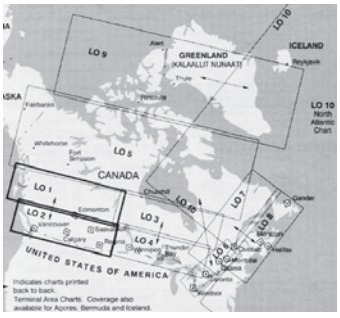


WAC

CANADIAN WAC CHARTS

Item	Title	Spruce PN	Price
WACB7	C-WAC B-7	13-04518	$13.75
WACB8	C-WAC B-8	13-04519	$13.75
WACC11	C-WAC C-11	13-04522	$13.75
WACD14	C-WAC D-14	13-04526	$16.25

LOW ALTITUDE ENROUTE CHARTS



Enroute Low and High Altitude charts provide aeronautical information for instrument navigation in the low and high airway structure of the Canadian Domestic Airspace. The airspace over foreign territory and international waters in which Canada accepts responsibility for the provision of air traffic services, and other areas required for military use. The primary purpose of Enroute charts is to depict radio navigation data to provide rapid and precise location and identification of information requisite to radio instrument navigation.

Item	Title	Spruce PN	Price
LE12	LE12 Low Enroute Chart 1-2	13-04539	$3.50
LE34	LE34 Low Enroute Chart 3-4	13-04541	$4.95
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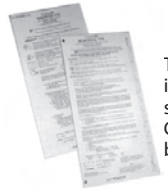

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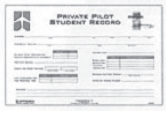

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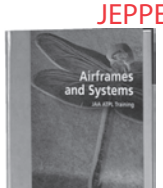

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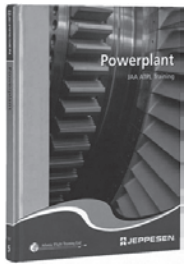

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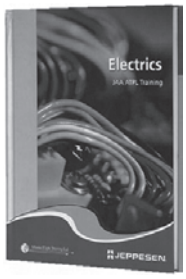

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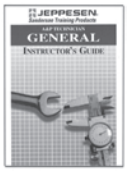

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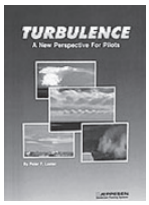

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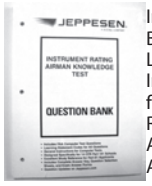

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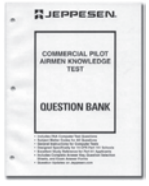

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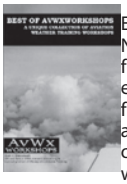

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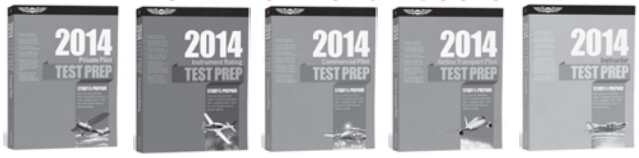

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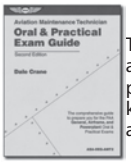

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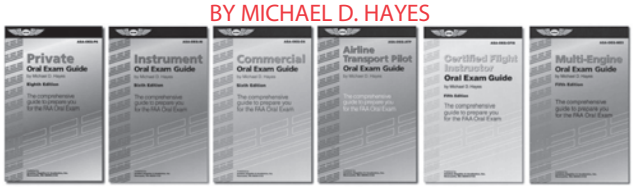
BY MICHAEL D. HAYES



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Section I relates to the first part of your oral exam. At that time, you will be asked to show the necessary certificates and documents required for flight, and show that the airplane is airworthy. Each part of this section has a detailed checklist, with a brief description of what is required. Section II is where you will compile all of the information you need to prepare for your cross-country checkride. You will be able to use this section to record the training lessons so that you will have examples to reference when preparing for your oral exam. Section III deals with aircraft systems and aeromedical information. This information will be compiled from the Pilot's Operating Handbook and the Pilot's Handbook of Aeronautical Knowledge and placed here for easy reference.
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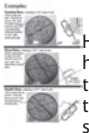

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FAA S 8081-29 & 8081-31 combined combined airplane, weight shift, powered parachute, and flight instructor.

Sport Pilot Practical Test Standards for Airplane, Weight-Shift Control, Powered Parachute and Flight Instructor. The FAA Practical Test Standards are used by instructors, students, and examiners to prepare for, review, take, or issue the checkride. Each PTS is written by the FAA and details the type and levels of skill and knowledge that must be demonstrated before an examiner can issue a certificate or rating to an applicant, and describes background study and reference materials.

This PTS includes both the FAA-S-8081-29 for Airplane and FAA-S-8081-31 for Weight-Shift Control and Powered Parachute (effective December 2004), applicable to both Sport Pilots and Sport Instructors. Includes Change 1 (effective June 2006) and Change 2 (effective February 2008).

Description	Part No.	Price
PTS Sport Pilot Manual	13-09907	$10.95
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PTS Multi Engine Manual	13-09908	$6.95
PTS Multi Engine E-Book	13-09870	$4.65
PTS Commercial Pilot Manual	13-09922	$5.75
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PTS Rotocraft Commercial Manual	13-09928	$6.75
PTS Rotocraft Commercial E-Book	13-09873	$4.65
PTS Airline Transport Pilot Manual	13-09926	$6.75
PTS Airline Transport Heli. E-Book	13-09953	$4.65
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PTS Parachute Rigger E-Book	13-09876	$4.65
PTS Flight Instructor E-Book	13-09874	$4.65
PTS Complete Collection E-Book	13-09875	$18.70

PRIVATE PILOT FLIGHT MANEUVERS

The purpose of this manual is to help in the explanation, visualization and execution of the flight maneuvers required for the Private Pilot Practical Flight Test. Students preparing for their oral and flight test will find this manual helpful. Any pilot preparing for a Biennial Flight Review (BFR), can use this manual as a refresher on maneuvers that you may not have executed in quite some time. Flight Instructor applicants and Certified Flight Instructors will find this manual a beneficial teaching aid.

The manual breaks down each maneuver required on the Private Practical Test in six parts: FAA objective for the maneuver. FAA completion standards. General description of the maneuver. Detailed step by step textual description on how to execute the maneuver as recommended by the FAA. References to FAA publications where the information was compiled from. Detailed graphic profiles summarizing the procedure in a visual format. Also included are airspeeds, pitch attitudes, bank angles, power settings and configurations for a Cessna 172P plus room to add the same information for up to three additional aircraft.

Description	Part No.	Price
Private Pilot Manual	13-08669	$18.95
Private Pilot E-Book	13-08748	$17.80
Instrument Pilot Manual	13-02733	$17.95
Instrument Pilot E-Book	13-08749	$17.80
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Multi-Engine Pilot E-Book	13-08751	$17.80
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Accelerated Aviation Training, was founded in 1986 to help Canada's pilots at all levels of licences and ratings prepare for their written exams with our accelerated exam prep seminars held at our YVR airport pilot training centre. We have been continously publishing Culhane training manuals and supplying Canada's aviation training industry with our aviation texts and exam guides since 1988.

Culhane aviation training books are currently used nationwide by aviation students at most flying schools and clubs in Canada, and at Canadian aviation colleges and universities, for ground school and flight training courses and seminars for the Private Pilot Licence, Recreational Pilot Permit, Night Rating, Commercial Pilot Licence, Integrated Commercial Pilot Licence, Instrument Rating, Flight Instructor Rating, IATRA Type Rating, Airline Transport Licence - Aeroplane, Private Pilot Licence - Helicopter, Commerical Pilot Licence - Helicopter, Instrument Rating - Helicopter, and Airline Transport Licence - Helicopter. Our ownership of Culhane manuals has permitted us to become the leading Canadian publishers of aviation self study training courses and referenced simulated exams, for both fixed wing and rotary wing pilots. We also offer training products and courses for Canadian Aircraft Maintenance Engineers and Flight Dispatchers.

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Private Pilot and Recreational Pilot Ground School Course	13-05092	$99.95
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Commercial Pilot Ground School Course	13-05098	$124.95
Commercial Pilot Written Test Book	13-05099	$109.95
Insrument Rating Ground School Course	13-05100	$124.95
Instrument Rating Written Test Book	13-05101	$109.95
Airline Transport and IATRA Ground School Course	13-05102	$149.95
Airline Transport and IATRA Written Test Book	13-05104	$124.95
Instructor Rating Ground School Course	13-05106	$124.95
Instructor Rating Written Test Book	13-05107	$109.95
Helicopter Pilot Ground School Course	13-05108	$149.95
Helicopter Pilot Written Test Book	13-05109	$124.95
Helicopter Airline Transport Ground School Course	13-05110	$174.95
Helicopter Airline Transport Written Test Book	13-05111	$149.95
The Sky's The Limit: Canadian Pilot's Manual of Aeronautics	13-05095	$99.95
The Sky's The Limit: Workbook for Canadian Private Pilots	13-05096	$49.95
The Sky's The Limit: Workbook for Canadian Commercial Pilots	13-05097	$74.95
Flight Dispatcher Generic Training Course	13-05112	$199.95
Flight Dispatcher Written Test Book	13-05113	$149.95
Regulatory Requirements for Canadian Aircraft Maintenance Engineers	13-05114	$99.95

FAR/AIM 2014

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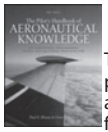
THE PILOTS HANDBOOK OF AERONAUTICAL KNOWLEDGE



Thoroughly revised, this new fifth edition has the most complete step-by-step, call-by-call, radio communications chapter available to today's aviation student covering a long-distance flight from start to finish. Updated FAA mandated standards of policies and procedures. Additional photos and drawings A more streamlined design Complete flight planning strategies for long-distance flights. Published by McGraw-Hill P/N 13-12963 ..... $59.95

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An EASA Part 66/147 approved manual on Human Factors fully compliant as EASA Module 9 up through level 3. Produced in cooperation with HATA, Hellenic Aviation Training Academy. A very complete manual covering human factors in the aviation maintenance environment including physiological, and psychological aspects, human interaction, communications, risk management, workforce dynamics as well as understanding and managing human related errors.

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PILOT GUIDES

PILOTS GUIDE TO CALIFORNIA AIRPORTS - Pilot's Guide to California Airports may be the most helpful airport directory available. It contains very complete information on airports and their areas, and includes aerial photos of "tower" airports, with outstanding illustrations of each area. Comes in a 3-ring binder. Measures 6"x9". Revised three times a year. P/N 8853.....$41.50

PILOT'S GUIDE TO S. WESTERN AIRPORTS - A complete guide with airport diagrams, aerial photographs, businesses, services, lodging, points of interest and much more for tower and uncontrolled airports in AZ, CO, NV, NM, and UT. An excellent guide for all pilots flying in the Southwest. Revised 3 times a year.
P/N 8648 .....$41.50

PILOT'S GUIDE TO N.WESTERN AIRPORTS - Pilots Guide features all public-use airports in Idaho, Montana, Oregon, Washington and Wyoming. 5 pages for each tower airport include an airport photo, a fold-out approach map showing VFR reporting points, airspace, and terrain features, and a detailed airport surface map. Non-tower airports have a half page with similar comprehensive detail. The Northwest Guide has more than 400 pages with over 800 photographs, maps and diagrams. 5.5" x 8.5" pages, 7.5"x 9"x1.75" green vinyl binder. Price includes first year of revision service. Revised 3 times a year. P/N 13-08648.....$49.75

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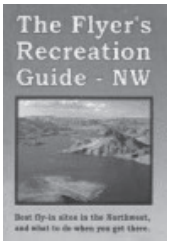

Contains descriptions of Western America's most exciting sites, all within convenient access of landing strips. Included are tips and current costs for transportation, lodging, restaurants, hiking, fishing, swimming, evening entertainment, and more. The Guide tells how to find trailheads, hot springs, raft trips, and items of interest. Airport information is included to help pilots determine if their aircraft and skills are compatible with the destination. This compact, perfect-bound 352-pg book has rounded corners & slips easily into a jacket pocket. Its high-quality paper provides maximum clarity for the the books 250 maps & photos.

Northwest..... P/N 13-17590 ..... $20.95
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BAHAMAS AND CARIBBEAN PILOT'S GUIDES - The Bahamas & Caribbean Pilot's Guide, in it's 35th year, has some exciting new changes for 2014. The Pilot's Guide has been split into two books: A Bahamas Pilot's Guide for the Islands of the Bahamas, and a Caribbean Pilot's Guide for the Islands of the Caribbean. As always, both books include the updated airport data and information pilots have been relying on for the past 35 years. Pilot's have been requesting this for years – and it's finally happened. This split allow pilot's to pay for only the region they want, and pay less for that region. Each book is noticeably smaller, it's easier to hold and has a "softer" feel. The new spiral binding allows the Guide to be folded back on itself, a nice feature in the cockpit. The tabs are now printed on every page, making the Guide more compact. The change to printed tabs makes it easier than ever to find the island or country you're looking for.
The Bahamas Pilot's Guide covers all the Islands of the Bahamas and only the Bahamas. The Caribbean Pilot's Guide covers all the Islands of the Caribbean: the Turks & Caicos, Hispaniola (Dominican Republic, Haiti) and Cuba, the Western Caribbean (Cayman Islands, Jamaica, The Yucatan, Belize and Honduras), Puerto Rico and the Virgin Islands, the Eastern Caribbean from Anguilla through the ABC Islands (Aruba, Bonaire and Curaçao).

Bahamas..... P/N 13-15001 ..... $29.95
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BAHAMAS/CARIBBEAN VFR CHARTS - The Bahamas Chart includes U.S. data as well as points of interest, high and low water, and a Caribbean Planner. The Caribbean Chart covers Puerto Rico south to Aruba, Bonaire and Curacao (the U.S. charts end at Guadeloupe). The FIR boundaries are shown - a must for travelling to the Caribbean!

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Pad of 100..... P/N 13-02219 .....$18.50

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The industry's original directory for connecting flight planners to aviation service providers for over 25 years. This annual publication provides airport, FBO, ground transportation, charter, caterer, handlers, and maintenance listings for the United States, Canada, Mexico and the Caribbean.

Description	Part No.	Price
Acukwik North American Edition	13-06384	$39.95
Acukwik Managers World Edition	13-06383	$97.95
Acukwik International Edition	13-06385	$48.95

AIRPORTS OF MEXICO

First complied by Baja Bush Pilot founder Arnold Senterfitt, Airports of Mexico is based on hundreds of hours of flying throughout Mexico. Rewritten by Jack McCormick, this new 20th edition includes both Baja and mainland Mexico, features over 1100 airports/ airstrips, all seaports and heliports, border crossing information, all international airports, information on flying in Mexico, discounts on hotels, Mexican insurance, group trips and fees. Over 150 airports are fully diagramed and are listed alphabetically. All in a convenient light weight, smaller, snap-ring binder designed for easy to use in the cockpit. A must for every pilot flying trips to Mexico.
P/N 13-01028 ..... $38.95

PILOT'S GUIDE TO MEXICO

Now in its 6th edition, Caribbean Sky Tours has released its 2013-2015 Pilots Guide to Mexico and Central America. Printed in full color, the 2013-2015 Pilot's Guide has almost twice as many airports including destination photos and verified airport information with airport pictures and sketches as well as important telephone contact information. The Pilot Guide's "Procedures" section has been expanded to include procedures for each country with what you need to know to enter, fly within, depart or over-fly each country. When you purchase a 2013-2015 Pilot Guide, you also receive a free 1 year membership to the Caribbean Sky Tours Member Website which provides access to fuel prices, procedures, forms, charts, weather and more. More countries, more airports, more information, free membership! P/N 13-07452.....$59.95

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ASA

SPORT PILOT: CHOOSING THE LIGHT-SPORT AIRCRAFT THAT'S RIGHT FOR YOU - This DVD production and booklet compare the LSA types as well as their ultralight cousins to help pilots make a truly informed decision on which light-sport aircraft is right for them. It explains what ultralights and LSA are, provides parameters to evaluate the viewer's situation and factors to consider (including cost, athletic ability, previous aviation experience, time to learn, transportation, storage, and airfield options), and provides an overview and introduction to each of the light-sport aircraft types. Includes beautiful full-color booklet with aircraft photo and comparison tables. Total running time 00:41:00. ..... P/N 13-03467 ..... $25.50

PRACTICAL TEST STANDARDS: SPORT PILOT - This is ASA's Sport Pilot Practical Test Standards for Airplane, Weight-Shift Control, Powered Parachute and Flight Instructor. The FAA Practical Test Standards are used by instructors, students, and examiners to prepare for, review, take, or issue the checkride. Includes both the FAA-S-8081-29 for Airplane and FAA-S-8081-31 for Weight-Shift Control and Powered Parachute (effective December 2004), applicable to both Sport Pilots and Sport Instructors. 296 pages.
P/N 13-05855 ..... $6.95

SPORT PILOT DVDS FROM ASA - Two new DVDs by sport pilot expert Paul Hamilton are available that explore the flying of light sport aircraft. Preflight a Fixed-Wing Light-Sport Aircraft for Sport Pilots takes pilots through the preflight inspection of a light sport aircraft (LSA). Be a Sport Pilot: Learning to Fly a Fixed-Wing Light-Sport Aircraft takes the lessons a step further by introducing the pilot to what it takes to obtain a sport pilot certificate. Hamilton and instructor Jeff Reynolds discuss pilot training, from first flight to solo to sign-off. The two DVDs are available separately or in a kit that also includes Weather to Fly for Sport Pilots and the Sport Pilot Logbook

Learn to Fly DVD ..... P/N 13-04191 ..... $42.95
Preflight Fixed Wing DVD ..... P/N 13-04192 ..... $42.95
Fixed Wing Sport Pilot ..... P/N 13-04193 ..... $76.85

WEATHER TO FLY FOR SPORT PILOTS WITH PAUL HAMILTON - Sport pilots fly lower and slower than General Aviation pilots. As a result, weather plays a critical factor in flying. The straightforward and beautiful presentation features time-lapsed cinematography of cloud formations, in-air footage, and animations. This DVD simplifies complex weather concepts as well as illustrates consequences of pilot judgment, in a 5-step system specific to Sport Pilots and light-sport aircraft operations. Pilots will learn to forecast local conditions, interpret weather information accurately, make better dec sions about "whether to fly", and learn to recognize trends. Includes booklet with worksheets for an interactive learning experience. Companion product to ASA's Sport Pilot Logbook (ASA-F2F-LOG). Total running time 01:20:12. ..... P/N 13-03468 ..... $42.95

SPORT PILOT LOGBOOK - Specifically designed for all Sport Pilots who fly ultralights and light-sport aircraft including hang gliders, paragliders, powered parachutes, trikes (weight-shift control), and fixed wing (three-axis control) aircraft. 7.25" x 5.25", 98 pages. P/N13-03385 ..... $14.95

ASA ROTAX 912 ENGINE INTRODUCTION

This DVD by Paul Hamilton introduces the use and maintenance on Light-Sport Aircraft (LSA) of the ROTAX 912 engine. Many engine problems seen in the field are preventable with proper operation and maintenance and the 912 is no exception. This DVD is particularly useful to maintenance professionals, pilots and flight instructors operating ROTAX-powered Light Sport Aircraft. Answers frequently asked questions based on years of operational and maintenance experience and outlines typical procedures every owner, operator and mechanic should know. This DVD is the only one of its kind in the rapidly growing LSA market, and it caters to the do-it-yourself experience of flying this category of aircraft

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SPORT SYLLABUS - Complies with both Part 61 and Part 141 training requirements. Complete ground and flight training with step-by-step lesson plans. 2nd edition.
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SPORT PILOT SYLLABUS - A flight and ground training syllabus for the Sport Pilot certificate, this syllabus meets FAA Part 61 requirements. Flight lessons are presented side-by-side with coordinating ground lessons. Stage Exams included. 164 Pages. P/N 11-09088 ..... $20.97

SPORT PILOT FAA KNOWLEDGE TEST PREP SOFTWARE - P/N 13-03448 ..... $51.75

GLEIM SPORT PILOT TRAINING RECORDS - The Pilot Training Record is a step-by-step lesson plan for your pilot training. Each lesson contains all of the required tasks for the lesson. Complies with both 14 CFR Part 61 and Part 141 training requirements.
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P/N 13-03449 ..... $96.85

SPORT PILOT AIRPLANE GUIDE

Sport Pilot Airplane: A Complete Guide provides an in-depth understanding of light-sport aviation complexities. Clarifies points commonly misunderstood, provides a wealth of information on subject such as Selecting an Aircraft, Pilot and Aircraft Certification, Weather, Flight Principles, and more. Includes 256 pages with illustrations, photos, or graphs on nearly every page. The material presents the experience of thousands of flight hours and contains valuable lessons for all pilots and would-be pilots. ..... P/N 13-03798 ..... $24.95

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Can be used three ways: 1) SP Prep = full immersion rapid prep for the written, 2) SP Encyclopedia = thorough review of relevant FAA publications essential to both the written and the oral exams, and/or 3) both as entertaining and informative leisure reading. The narrative is laced with humor, personal anecdotes, and frank sometimes blunt language that keeps the reader alert and involved while feeling secure and comfortable as if in the company of an experienced friend and mentor. Actual NTSB accident reports are woven into the discussion.
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COMPUTER CD-ROM COURSE WITH AUDIO PRACTICAL IFR FLYING - Enhance your performance, reduce your workload, and increase your level of safety when flying single pilot IFR! This CD-ROM provides a full hour of information on methods and techniques to make Single Pilot IFR flying simpler, easier, less stressful, and safer! Find out helpful things your instructor never taught you! Learn how using current technology can reduce your risk in IFR flight! T The author, Chuck McGill, is the 2009 FAA CFI of the Year, Western Pacific Region, and has taught for the AOPA Air Safety Foundation, the Cessna Pilots Association, and the Mooney Aircraft Pilots Association Safety Foundation. Learn tips and techniques from a Master CFI who has over 11,000 flight hours in more than 85 different makes and models of general aviation aircraft! P/N 13-06881 ..... $39.95

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Renowned aviation photographer Philip Makanna has captured the essence of this era in his GHOSTS of The Great War and A Time Remembered -2014, a large-format calendar that features his stunning, air-to-air, color photographs. In this edition, his images depict the beginnings of military aviation. The calendar continues through to the advanced aircraft that appeared at the war's end. Stunning images and an evocative day-by-day history of the aviation (and related) events of the period combine to describe the beauty, the romance and the tragedy of military aviation's early days.

P/N 13-06012

Ghosts WWII- 2014 A time rememered ..... P/N 13-01318 ..... $12.75
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Featuring twelve WWII aircraft and beautiful authentic pinup girls.Includes airplane portraits on facing page.

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WARBIRD PINUP GIRLS COLLECTORS BOOK

This is the ultimate Warbird Pinup Girls collectors photography book. Featuring never before seen shots from the entire collection including some sneak peeks into the upcoming 2015 calendar. Featuring production work photography, aircraft static shots and commentary from the artist. 8.5"x11" format full color page, soft bound.

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BOMBSHELLS WARBIRDS 2015 PIN-UP CALENDAR

It doesn't get any better…Great planes and beautiful girls. "I wanted to take the nose art idea and spin it without loosing anything" states Bombshells creator and professional Aviation Photographer, Scott Slocum. Each 2015 Bombshells Warbirds calendar features 12 months of air to air photography and beautiful models decorously dressed and photographed with each plane. The calendar comes individually wrapped and is in full color, 12x18 inches hanging.

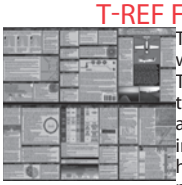
P/N 13-06211 ..... $19.95

2015 AVIATION LEGENDS CALENDAR

The 2015 Aviation Legends antique aircraft calendar is sized at 19.5" x 13.5" and is printed on high quality glossy stock.

P/N 13-08026 ..... $14.95

T-REF FLIGHT TRAINING REFERENCES



This is a hardcopy product, measuring 8.5" x 11" when closed and 23.375" x 11" when fully opened! The first of two T-Refs dedicated to private pilot training. This first T-Ref provides many important acronyms that a student pilot must know, as well as important information about the airport environment, hypoxia, landing tips, and many other important elements of flying!

Private Pilot T-Ref 1 ..... P/N 13-12742 ..... $13.95
Private Pilot T-Ref 2 ..... P/N 13-12743 ..... $13.95
Instrument Pilot T-Ref 1 ..... P/N 13-12740 ..... $13.95
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Newly revised FAA 8081 6C with Changes 1, 2, 3, 4 and 5 - Practical Test Standards for Flight Instructor - Airplane, single engine land and seaplane. Practical Test Standards are a guide for students, instructors, and FAA-designated examiners to know what is expected of pilots in a checkride. Every PTS is written by the FAA and details the type and levels of skill and knowledge that must be demonstrated before an examiner can issue a certificate or rating to an applicant, and describes background study and reference materials. ..... P/N 13-10243 ..... $5.75
Ebook ..... P/N 13-10242 ..... $4.65

PTS: FLIGHT INSTRUCTOR AIRPLANE MULTI-ENGINE

FAA 8081 6CM - Practical Test Standards for Flight Instructor for airplane multi-engine land and sea. Practical Test Standards are a guide for students, instructors, and FAA-designated examiners to know what is expected of pilots in a checkride. Every PTS is written by the FAA and details the type and levels of skill and knowledge that must be demonstrated before an examiner can issue a certificate or rating to an applicant, and describes background study and reference materials. ..... P/N 13-10241 ..... $5.75
Ebook ..... P/N 13-10240 ..... $4.65

PTS: FLIGHT INSTRUCTOR INSTRUMENT AIRPLANE AND HELICOPTER

FAA 8081 9D - Practical Test Standards for Flight Instructor Instrument for Airplane and Helicopter. Practical Test Standards are a guide for students, instructors, and FAA-designated examiners to know what is expected of pilots in a checkride. Every PTS is written by the FAA and details the type and levels of skill and knowledge that must be demonstrated before an examiner can issue a certificate or rating to an applicant, and describes background study and reference materials. ..... P/N 13-10234 ..... $5.75
Ebook ..... P/N 13-09874 ..... $4.65

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A compilation of Barry Schiff's popular monthly column in AOPA Pilot magazine, these books contain favorite articles from over the years, arranged by subject. These articles are pulled from his more than 26,000 flight hours in 260 types of aircraft, for a set of books filled with Schiff's vast knowledge and experience as an aviator and flight instructor.

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This fascinating look inside the airplane factories shows just how we produced over 330,000 aircraft in 4 1/2 years. Patterns, blanking, forming, and assembly are shown, of course, but so also are pressformers, drop hammers, metal spinning, and power hammers. And then watch the complicated assembly process of the P-39 Airacobra!
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This class teaches measuring, geometry, straightening, cutting fishmouths, fitting, splicing, and welding to repair some fuselage damage. A fine companion to our full-length 2-DVD series, 4130 Chromemoly Airframe Construction.
P/N 13-13044 .....$39.95

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No machinery here--just common hand tools and a welder (torch or electric). The first part shows how to fit the 'one size fits all' patch panel into an early Ford door. The second part shows how to form complex patches on your own to repair a '34 Ford grille by hammering and butt welding. P/N 13-14852 .....$24.99

SHEET METAL REPAIRS TO THE P38 LIGHTNING

Learn to make a perfectly fit and contoured "coin" or flush patch on a compound surface using only basic, non-powered hand tools – the same standard aviation tools and methods that are still used today, but you get to learn them on a classic airplane!!!
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FLUID FORMING COMPOUND SHAPES IN ALUMINUM PARTS

Use water pressure and a cavity to form sheetmetal parts, with either city water pressure or an inexpensive high-pressure pump. See detailed coverage of the pressures required for various sized parts, the inexpensive pumps available, and some engineering designs for the cavities. We make aluminum shapes that are smooth and free of marks, although other types of sheetmetal can certainly be "inflated" into some interesting shapes. P/N 13-13046 .....$29.95

ALUMINUM WELDING METHODS (ALCOA)

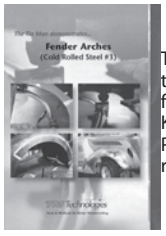
This film covers basic production oxy-fuel welding with both hydrogen and acetylene, with torch settings, joint setup, mixing the flux, and basic technique. Methods for both thin and thick sections are shown. Shows proper preheat and postheat methods for heavy sections, and proper edge beveling and gapping also. An excellent resource. Being as old as it is, it also details stick welding, carbon arc, atomic hydrogen, and spot welding methods and machines. You can learn a lot about these methods, which are probably not shown much anywhere else. Spot welding is used mainly for aviation construction and the details in this film are quite specific, going over all three machine types. Black and white with loads of "colorful" information. P/N 13-13047 .....$23.95

GAS WELDING ALUMINUM 2.1, "THE DIFFICULT"

(This 2-DVD set is designed to be a companion to our first film, Gas Welding Aluminum .) Setting up the oxy-acetylene welding rig, with leak-testing, safety, and proper adjustment of the torch is a standard-but-essential step-by-step procedure. Alloy selection, cleaning and preparation of the material and filler, and mixing and application of the aluminum welding flux are also requisite, so I chose to include them. Crack prevention, which is necessary with the higher-strength aluminum alloys, is shown in depth, and will help to solve a lot of your problems. The intricacies of Butt joints, Tee joints, and Lap joints are thoroughly described and demonstrated. Brazing and soldering are covered in two specific segments, with proper cleaning, flux and filler selection and strength and corrosion issues. P/N 13-13054.....$64.95

CAST IRON WELDING WITH THE TORCH & ARC

Using traditional materials and proven simple methods, this dvd shows you a nearly perfect system to repair exhaust manifolds, pump housings, valve bodies, and some blocks. P/N 13-13057 .....$34.95



FENDER ARCHES

This is a fly-on-the-wall style effort for those who want to watch a complete metal working process. Be the fly-on-the-wall as two metal guys, Richard Ufheil and Kent White, "The Tin Man", go after a pair of 1935 Packard front fenders needing fender (or wheel) arch replacement. P/N 13-14851 .....$42.85

EYES OF FLIGHT

If you want to learn how to handle, cut, drill, form and care for Plexiglas, then this is the film! Many experienced craftsmen have told me how much they enjoyed this film. Special drills, saw speeds, solvents and polishing techniques are shown, along with the causes of "crazing". Includes footage from Bell showing how canopies are blown. Warbird footage! Great info! P/N 13-13048 .....$64.95

POLISHING ALUMINUM AIRCRAFT

Also known as the Swift Polishing Video. This "how-to" film was done by the skilled folks at the Swift Airplane Museum. Polishing any aluminum can be frustrating, and a lot of work. I have seen the results of these methods, and must say this is the way to get the finest results (Blankenberg's Spartan Exec. was done this way). The work is still there, but the trial and error is gone! The tools, the materials, and the methods are clearly defined. P/N 13-13052 .....$33.50

COMPLETE PIPER J3 TRAINING SERIES

Four separate films have been combined into one very educational 110-minute DVD. See how the Piper factory originally built the J-3 in 1937, and then watch how they do a preflight inspection, and annual inspections on airframe and engine! Can you imagine watching the actual construction of a J-3 in the Piper factory in Lock Haven, Pennsylvania? See the step-by-step construction of fuselage, wing, and gear. See fabric covering, control installation, rib forming, and engine installation and runup. Inspiring!!! Remember that many of the tube-and-fabric aircraft can benefit from this valuable information.
P/N 13-13053 .....$54.95

BV

AVIATION VIDEOS & DVDS

EAA SPORTAIR WORKSHOP VIDEOS

All videos produced by the EAA SportAir Center

BASIC FABRIC COVERING DVD- Aircraft Fabric Covering is a must for anyone who wants to cover their own airplane. This 2-hour comprehensive video presents every aspect of the Poly-Fiber™ fabric covering process in detail, and in easy-to-understand language. From preparing the airplane for covering to spraying on the colors, you are guided step by step through the entire process by a professional EAA SportAir fabric instructor. When used in conjunction with the Poly-Fiber manual, Aircraft Fabric Covering removes the mystery surrounding this important process in the construction or restoration of your airplane. Information covered includes: • Preparing surfaces • Attaching the fabric •Tightening the fabric • Applying the first coat of Poly-Brush • Tying rib-lacing knots • Applying finishing tapes • Spraying UV-blocking chemical, Poly-Spray • Applying the color coats. P/N 13-40428 ..... $39.95

THE EDUCATED OWNER VIDEO SERIES

VOLUME I: PREVENTATIVE MAINTENANCE – initially details the FAAs rules concerning what maintenance tasks an owner can legally perform, It then proceeds to instruct viewers on the proper tools and supplies for common maintenance tasks and follows with detailed, step-by-step demonstrations of Engine Inspections, Landing Light Replacement, Oil Changes, Spark Plug Maintenance and Tire & Wheel servicing. The video is approx. 60 min. long.
DVD ..... P/N 13-03572 ..... $39.95

VOLUME II: THE ANNUAL INSPECTION – covers Federal Aviation Requirements, and takes viewers, step-by-step, through the Annual Inspection process. This video teaches viewers how to manage the aircraft's maintenance during the Annual Inspection and on an ongoing basis. Key topics include; The Annual Inspection and the FARs, Selecting a Maintenance Facility, The Inspection Process, Correcting Discrepancies and Aircraft Enhancements. Video is approx. 70 min
VHS ..... P/N 13-01330 ..... $34.95
DVD ..... P/N 13-03573 ..... $39.95

VOLUME III: Teaches pilots and prospective aircraft owners all about aircraft ownership. Teaches how to analyze the costs of aircraft ownership and takes viewers, step-by-step, through the selection, pre-purchase and sales transactions. Includes detailed information on preventative maintenance, annual inspections and tips for living with your new aircraft. 90 min.
VHS ..... P/N 13-01626 ..... $34.95
DVD ..... P/N 13-03574 ..... $39.50

INTRODUCTION TO STEEL WORK

If you are just starting out and wish to have a good overview, Kent has chosen these DVDs specifically for you. It is difficult in the beginning of learning a skill, so you need some inspiration and careful instruction, both to keep your interest and to feed your curiosity. These 4 DVDs cover hand tools, measuring, cutting, forming, form blocks, patterns, shrinking, stretching, Pullmax, Air Hammer, gas welding, and spot welding.
P/N 13-13056 ..... $104.95

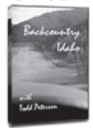
ALASKANS FLY ALASKA

Join the fun as Alaska pilots sharpen their skills in vast and varied Southwest Alaska, an uninhabited, untamed, and undeveloped wilderness. Experience the excitement of the possibilities open to the small plane pilot, flying low and slow through western Canada and Alaska. Come along as they fly though Canada, following the popular routes preferred by experienced small plane pilots. Explore Alaska's back country, where there are no roads and no people for hundreds of miles. Touch down on remote beaches, sandbars, and fields, in places only the bush pilot can go. Marvel at the breathtaking views of spectacular glaciers, ancient canyons, sun-bathed seascapes, and unsurpassed mountain ranges. Enjoy an enthusiastic look at possibilities open to the small plane pilot flying in Canada and Alaska. P/N 13-07374 ..... $24.95

RED BULL

Take the top 12 pilots in the world to 8 of the most stunning cities around the globe. Add tight twisting race tracks, planes flying close to 400 km/h, chuck in 12G s for good measure and you've got the 2008 Red Bull Air Race World Championship another spectacular season of high drama and amazing skill. Watch the very best moments from the opening race in Abu Dhabi to the first ever double header taking place at San Diego and Detroit in the United States. The pilots battled against the elements in Rotterdam and London and came out on top before heading to Budapest. In Porto a new champion came of age before the finale in Perth where the winner of the 2008 Red Bull Air Race World Championship was crowned. Picture Format: NTSC P/N 13-06889 ..... $19.95

BACKCOUNTRY IDAHO



Pilots of all skill levels will truly enjoy the exhilaration and adventure of Idaho backcountry flying at its best with ... Backcountry Idaho. Visit some of the best backcountry airstrips in the Rocky Mountains. Explore scenic wilderness, vast pine forests, and steep canyons in search of pristine beauty and the next runway challenge. Fly right seat on the actual approaches and departures of these spectacular backcountry airstrips with Todd at the controls of his high-performance, custom designed, King Katmai.
P/N 13-06298 ..... $24.95

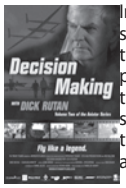
IDAHO GOLD, RETURN TO THE BACKCOUNTRY

Join Todd Peterson as he explores strips not covered in his immensely popular Backcountry Idaho DVD. He'll take you north of the Salmon River with his wife, Jo, and fellow King Katmai owner, Jay Minor, to visit some truly remarkable backcountry gems. Their odyssey is based in historic Dixie Town, where the runway parallels Main Street right in town. P/N 13-11200 ..... $24.95

UTAH OUTBACK

Visit some of the best backcountry airstrips of the American West. Discover ancient Anasazi cliff dwellings or squeeze through a thousand-foot-deep canyon in search of incredible beauty and the next runway challenge. Take a journey with expert pilot Todd Peterson as he explores some of the remote and beautiful country featured in Galen Hanselman's "Fly Utah" pilot's guide. P/N 13-06309 ..... $24.95

DECISION MAKING WITH DICK RUTAN



In Decision Making with Dick Rutan, you'll fly shoulder-to-shoulder with Dick Rutan, one of the most renowned aviators of all time. Discover how human factors affect your performance and influence your decision making. Explore the brain, and learn how the mind responds and processes stimulus during in-flight emergencies. And learn the importance of channeling reactive, emotional responses into proactive, positive decisions that can literally save your life.
P/N 13-06868 ..... $29.95

ATTITUDE FLYING WITH DICK RUTAN "FLY LIKE A LEGEND"- For serious pilots only. Conceived and designed to take you above and beyond other aviation training programs, the Aviator Series captivates and educates like no other training video you've seen before. Puts you shoulder-to-shoulder with the world's foremost aviators as they share leading edge skills and techniques that made them legends.
DVD ..... P/N 13-05858 ..... $29.95
Attitude &Decision Flying Set ..... P/N 13-10297 ..... $49.95
BluRay Disc ..... P/N 13-05859 ..... $34.95

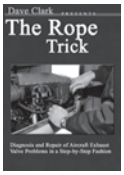
FLIGHT OF VOYAGER CD (DICK RUTAN) – This is a recount of the horrific, horrendous, heroic and humorous moments of the Voyager project through the eyes of the pilot Dick Rutan. On December 14, 1986 Voyager took off from Edwards AFB in California and 9 days later landed at the Edwards, completing the first ever non-stop, unrefueled world flight. This 3-CD set (3.5 hrs) includes a mini journal map of the flight, historic photos, fun facts, and more. P/N 13-01163 ..... $34.95

EAA AIRVENTURE OSHKOSH

Relive all the excitement of EAA AirVenture Oshkosh, the World's Greatest Aviation Celebration, with the souvenir videos.
Oshkosh 2010 ..... P/N 13-11627 ..... $14.99
Oshkosh 2009 ..... P/N 13-10011 ..... $14.99
Oshkosh 2008 ..... P/N 13-06225 ..... $14.99
Oshkosh 2007 ..... P/N 13-05650 ..... $14.99
Oshkosh 2006 ..... P/N 13-04059 ..... $14.99

BV

AVIATION VIDEOS & DVDS



THE ROPE TRICK

The diagnosis and repair of aircraft exhaust valve problems in a step-by-step fashion. Watch as Dave Clark walks you through the steps for inspecting valve clearances, reaming valve guides, and freeing stuck valves. This video can save you a lot of time and money.

P/N 13-10141 ..... $24.95

OVER THE SOUTHWEST

Each of the 4-DVD sets in the "Over" series from Topics Entertainment is a definitive collection of award-winning footage shot from the air by the most experienced aerial production teams. Breathtaking flyover views provide a rare perspective on some of the most beautiful regions the world over. Amazing cinematography and original music combine to create an experience that is nothing short of exhilarating. These elegantly packaged DVD sets make a fine addition to any video library and are ideal for gift-giving! Runtime approx 205 minutes.

P/N 11-08907 ..... $26.50

MOUNTAIN FLYING BIBLE REVISED

Learn the basic, intermediate and advanced techniques of mountain flying. Learn to anticipate how your airplane will perform in the mountains. Discover simple rules-of-thumb to enhance safety and simplify operations. Learn the weather information required for peace of mind and increased pleasure. 16 pages of color photos of back-country strips covering the approach, landing and takeoff procedures. P/N 13-04035 ..... $32.95

THE SHIRT POCKET MOUNTAIN FLYING GUIDE

This is not a rehash of the Mountain Flying Bible. It includes new material and color photos throughout. There are 129-color pages of the 208 pages. What is Covered: Section 1 - Do's and Don'ts • Section 2 - Basic Premises • Section 3 - Flying Canyons • Section 4 - Crossing Ridges • Section 5 - Turbulence & Va • Section 6 - Maximum Lift Flap Setting • Section 7 - How to Land an Airplane • Section 8 - Visual Illusions • Section 9 - Spot Method for Landing • Section 10 - Mountain Airstrip Operations • Section 11 - Mountain Weather.

Book ..... P/N 13-04051 ..... $15.85

FORMATION FLYING, THE ART

The Art in DVD format. "Formation Flying, The Art " DVD was originally introduced to the Warbird community in 1993 as a integral part of the FAA Mandated Civilian Formation Training and Credential Program. Currently the video is now the "F.A.S.T." standard and endorsed by all major Warbird flying organizations such as the EAA / Warbirds of America, North American Trainer Association, T-34 Association and others world wide.

DVD ..... P/N 13-04572 ..... $69.95
VHS ..... P/N 13-15150 ..... $69.95

TAILWHEEL BASICS

Skip Degan, a flight instructor with airplane single-engine land, instrument, and ground instructor ratings, has developed a 15 minute video to introduce pilots to basics of tailwheel airplanes. Tailwheel Basics explores the difference between conventional and tricycle-geared aircraft and explains the basic concepts needed to earn a tailwheel endorsement. Included is a three-page booklet explaining the tailwheel transition. The video is available in DVD format. P/N 13-04283 ..... $19.95

TAILWHEEL ESSENTIALS

Simultaneous, multiple point of view, gyro-stabilized camera footage puts you in the cockpit,on the ramp or runway and alongside the aircraft while in-flight maneuvers are dissected anddiscussed. Whether you are considering tailwheel training, or have been flying tailwheel aircraft for years, this video will provide you the knowledge and a plan to become a more skilled, safe, and confident pilot of tailwheel aircraft.

P/N 13-08038 ..... $44.95

THE GREAT ARCTIC AIR ADVENTURE

Take to the world's northernmost skies and explore the planet's "last imaginary place"-the enigmatic Arctic. The Great Arctic Air Adventure is the story of Seattle's Mark Schoening and Doug DeVries, who piloted their de Havilland Beaver seaplanes around Canada via the famed Northwest Passage. Over six weeks battling miserable weather, frozen tundra and inaccessible terrain in one of the least populated places on earth, the pair builds a lasting bond and discovers that in the unyielding Arctic, adaptation is key.

P/N 13-11552 ..... $24.95

BASIC AEROBATICS

Introduces the basic building blocks of aerobatics - spins, rolls and loops - with a wealth of in-cockpit and from-the-ground views of each maneuver. This video is and indispensable aid to those considering a departure from straight and level. (54 min.) 6618A

P/N 13-04302 ..... $55.95

PRIVATE PILOT COURSE

Insight into what happens on the ground portion of your FAA Private Pilot Practical Test, commonly referred to as the Checkride Oral. More than one hour of video, showing you a realistic enactment of a checkride oral conducted by an FAA designated pilot examiner and a student pilot. P/N 13-15063 ..... $89.95

TAILWHEEL 101

Tailwheel: 101 will help you get there. This video is the premiere study guide for all pilots wishing to get their tailwheel endorsement, or for any tailwheel pilot who'd like to learn a thing or two from the most widely recognized tailwheel expert in America, Damian DelGaizo. Ride along with Damian and his student Jill as she gets her tailwheel endorsement. Each ground segment is immediately followed by its real-world airplane demonstration to reinforce the material and make pre-flight study sessions easy and efficient.

P/N 13-06023 ..... $49.95

TAILWHEEL: 201 BEYOND THE BASICS

Tailwheel: 201 goes beyond the tailwheel checkout, building on the tailwheel basics introduced in Damian's first DVD, Tailwheel 101. Teaches advanced techniques from short field operations, to advanced slips, to precautionary off airport landings. Like Tailwheel: 101, this DVD includes ground school and in-flight instruction both inside and outside the cockpit. Whether you are new to the world of tailwheel flying or a seasoned aviator, Tailwheel: 201 will help you become a more proficient pilot. P/N 13-09653 ..... $39.95

MOUNTAIN FLIGHT

Mountain Flight, filmed in part in the Idaho Primitive Area, includes in-flight footage of some of the most beautiful, rugged and demanding mountain terrain in the U.S. It covers flight planning, accident causes, weather, density altitude, approaches, landings, departures, and survival. The weather section includes time lapse sequences of thunderstorms, mountain waves, lenticular and rotor clouds. Graphics are used to clarify, explain and demonstrate the ground and flight procedures for safe operation in the mountains. Color, approximately 80 minutes. P/N 13-04052 ..... $27.85

ALASKA'S BUSH PILOTS THE REAL DEAL

The story is interlaced with in-depth and exciting interviews of these courageous pilots as they recall many different stories of their experiences in the remote wilderness. They tell stories about rescues of stranded fellow pilots, taking their families 40 miles from their already remote bush homes to go fishing at "a better spot" to encounters with vast herds of caribou and the huge bears. You will "fly" in the seat right next to these men in the cockpit and witness wingtip-to-wingtip aerial HD photography that Jim Oltersdorf shot during filming as he is known nationally for. Its about where they fly, how they fly and why they fly. If you've even known what excitement is, step aside, this one is going to blast you off your seat! P/N 13-06937 ..... $18.95

ALASKA'S BUSH PILOTS (THE REAL DEAL) COMMERCIAL OPERATION

In-depth knowledge of commercial bush pilots who fly the bush in Alaska. Provides an insight into the world of advanced technologies of aviation equipment for the viewers. After analyzing the first documentary it became apparent that a presentation of commercial pilot activities was warranted. There is no duplication for any footage or any information from "Alaska Bush Pilots....The Real Deal: it is all brand new! The pilots who use this equipment on a daily basis explain in detail the components of G-1000 glass cockpits and relative avionics devices. P/N 13-09481 ..... $18.95

60 DEGREE NORTH AT 500 FEET

The DVD plays like a Warren Miller film or a variant of Endless Summer, made just for pilots. There's some great fishing, great people in the film. This hour long video encapsulated an entire summer of flying in British Columbia, Yukon, Northwest Territories and Alaska. Needless to say, you get a view of the North that only pilots get to see.

P/N 13-07038 ..... $23.75

BV

AVIATION VIDEOS & DVDS

HOW TO LICENSE YOUR HOMEBUILT AIRCRAFT

This DVD will walk you through each step to successfully license your experimental amateur homebuilt aircraft. The actual FAA forms required are displayed on screen, and where to obtain them and how to fill them out.

P/N 13-03609 ..... $29.95

HOMEBUILT HELP ELECTRICAL WIRING TUTORIAL

Explains and demonstrates the common procedures, tools and components required for the basic wiring of a homebuilt aircraft. Demonstrations of crimping, soldering, wire selection and wiring design with simple schematics that are applicable to a homebuilt electrical system. Video length is 1 hour and 20 minutes.

P/N13-03578..... $29.95

AIRFRAME CONSTRUCTION TECHNIQUES

Potter, who is an A&P I/A, commercial pilot, and parachute rigger, has worked in the aircraft maintenance field for 25 years. The DVD focuses on modern techniques and tools that are available to a new generation of builders. Some topics covered include: setting-up shop, shop safety, purchasing tools and steel, building and leveling your jig table, lay-out and jigging, cutting and fitting, welding with an emphasis on TIG, completing the fuselage box, bending-in the sides, fitting the tail post, vertical jigging, bending and flattening tubing, building fittings, builders groups and support. This 1 hour and 18 minute DVD takes you step-by-step through the entire building process.

P/N 13-06833..... $44.85

AIRCRAFT PAINTING 101

An excellent 2 hour video in which Sam James takes you, in detail, through the finishing, priming, and painting of his RV-4 with the Dupont Veriprime and Chromabase systems. This video is not as finely produced as some others, but the vast quantity of practical information it contains more than makes up for it. Takes you through the complete process of working an metal wing, a fiberglass wheel pant, and detailed custom design on a horizontal stabilizer. Run Time: 120 min by Sam James P/N 13-06567..... $24.95

METALWORKING 101

Targeted to the beginning student of pop-riveted metal kit plane construction. Ideal for the person who is contemplating the undertaking of a metal kit plane project. Takes you thru the actual construction of a Zenith rudder, from start to finish. While it can be used to supplement the construction guide supplied by the manufacturer with this rudder (a CH701 or CH601), it is actually intended to demonstrate to the beginning builder just what tasks and skills are required. General metal building procedures are explained and demonstrated. P/N 13-03369 ..... $28.95

WEIGHT & BALANCE 101 FOR HOMEBUILT

Completing a homebuilt requires you to calculate and document the weight & balance figures for your plane and present them to the inspector...and for many homebuilders this task is confusing and complicated -- however, this video makes this task simple and easy to understand. The video makes it easy for you to understand the concepts required to perform your own weight and balance analysis on your aircraft and then document the findings for the inspection process. P/N 13-04184 ..... $32.95

CANARD AIRCRAFT

The DVD has 3 hours of video on canard aircraft only, truly a one of a kind DVD. It covers the Cozy MkIV, LongEZ, Berkut, ERacer, StaggerEZ, Bateleur, Defiant, LongEZ Jet and a custom LongEZ. Want to know what it's like to build a Cozy aircraft? Or see what it looks like to do a high speed fly-by from the cockpit? Then you'll want to see this DVD. You'll get lot's of encouragement from every builder for you to continue on your journey to complete your canard aircraft. 60 minutes of air to air shots, high speed fly-bys, take offs and landings. With all the natural sounds as they fly right over head at more than 200 miles per hour!

P/N 13-04260..... $42.50

SKYWARD TECH AIRCRAFT ENGINE REBUILDING

De-mystify the overhaul procedures on selected Continental & Lycoming engines. Videos begin with a dismantled engine, show the crankshaft being mounted on a stand and then proceed through complete assembly. These videos effectively present the step-by-step procedures of re-assembly.

Description	DVD P/N	Price
Cont. 0-200 Rebuild	13-03208	$29.95
Lyc. 0-320 Rebuild	13-04465	$29.95
Lyc. 0-360 Rebuild	13-03210	$29.95
Lyc. l0-360 Rebuild	13-03209	$29.95

SCRATCH BUILDING BASICS FOR METAL AIRCRAFT

An excellent way to determine if building a homebuilt aircraft from scratch is right for you... you will obtain a full understanding of the trials, tribulations, joys and successes that this type of building process entails. You can't watch these guys at work and not learn something that might change the way you think about the process and people that build their own planes from scratch! Approximately 3.5 hours in length and is divided into 10 video chapters to make navigation and review of desired sections fast and easy. The DVD set includes web links to plans for building your own sheet metal brake and other tools used in this video (you can print the plans on your own printer). P/N 13-04185..... $38.95

RV-12 EMPENNAGE TAILCONE

This double disk DVD is the first in a series of videos being developed to cover the entire build process for the Van's RV-12 aircraft kit. It covers the complete empennage/tailcone kit as supplied by Van's Aircraft. It is a great starting place to begin your project – there are no prerequisite assemblies that need to be completed before starting. All in the exact sequence of building as specified by the construction manual. Approximately 2.5 hours in length and is divided into various video chapters to make navigation and review of desired sections fast and easy. They are completing production on the subsequent volumes of the RV-12 build (that are also sequenced to the sub-kits as provided by Van's Aircraft).

P/N 13-09590..... $48.85

COMPLETE COMPOSITE & FIBERGLASS LIBRARY

All five of our How-To videos on a convenient 2 DVD set. A total of 190 minutes of the most complete guide for using composite materials available anywhere! The Complete Fiberglass and Composite Library contains The Basics of Fiberglass, A Step-By-Step Guide to Molding Fiberglass, Advanced Moldmaking and Plug Construction, Vacuum Bagging and Sandwich Core Construction and The Art of Moldless Composites. P/N 13-06551..... $161.95

DEEP INSIDE YOUR ROTAX

You can now see and understand what procedures are involved with the 150 and 300 hour inspection/rebuild services. Alan points out the places carbon accumulates, where the common areas of wear occur, and other signs indicating the possibility of potential failures. The specialized Rotax engine tools are demonstrated as to their function in removing various internal components. Installation and maintenance tricks are also demonstrated and explained for the purpose of heading off future engine failures that can lead to disaster. And More.

P/N 13-03370..... $34.95

ROTAX 912 INSTALLATION TIPS & TECHNIQUES

This presentation explains the most important details of preparing and installing th epopular Rotax 912 family of four stroke engines in your experimental homebuilt aircraft. This reliable, high performance engine will only perform safely if installed properly as specified by the Rotax installation guide. The important details in this guide are often misunderstood or even ignored completely resulting in catastrophic engine failures and dangerous flying situations. DVD Running time: 1.5 hours

P/N 13-04183 ..... $35.95

BUILDING A GLASS PANEL FOR HOMEBUILT AIRCRAFT

Mark Townsend of CanZac Aviation takes you step-by-step from the planning stages through the actual fabrication procedures and wiring for a combination glass/conventional instrument panel for an experimental aircraft. 80-minute DVD.

P/N 13-04969 ..... $23.95

RV RUDDER WORKSHOP

This instructional video has 2 major sections: The first section contains an overview and demonstration of the tools and techniques that are required for building an RV aircraft. These specialized building techniques center around riveting with solid rivets - essential for the RV aircraft. Many specialized tools are required for this type of construction and are discussed and demonstrated. Techniques that are shown include: dimpling, countersinking, deburring, drilling, back riveting and pop riveting. A full discussion of the types of rivets that are used along with their important characteristics is included in this first section of the video. The tools for measuring proper rivet setting (rivet gauges) are shown and demonstrated. Some of the tools that are featured include: hand squeezer, pneumatic rivet gun, flush and universal rivet sets, dimple dies, back rivet sets, scotch-brite polishing wheel and deburring tools. P/N 13-04791..... $31.50

BV

AVIATION VIDEOS & DVDS

INSTRUCTIONAL VIDEO TAPES

BUILDING THE RUTAN COMPOSITES – This step-by-step instructional program features Burt Rutan and Mike Melvill proceeding through the complete foam-epoxy-fiberglass composite construction procedure as used on the VariEze, Long-EZ, Quickie, Q2, Dragonfly, Sea Hawk, Polliwagen and other composite aircraft. Also included is a formation flight by the Long-EZ, Defiant and VariViggen. A must for all composite aircraft builders. 1hr, 36 mins.
DVD ..... P/N 13-04809 ..... $26.95

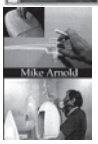
FIBERGLASS 101 – This tape shows aircraft builders how to make molds, fairings, and parts from fiberglass. It takes you step by step through the phases of glass work so that you can build parts yourself. Produced by fiberglass expert Sam James. 2 hrs. Note: The quality of this DVD may not be standard for DVDs due to format conversion technique used.
DVD ..... P/N 13-03875 ..... $32.50

BASIC AIRCRAFT SHEET METAL TECHNIQUES & TOOLS – George Orndorff, a noted aircraft builder, demonstrates 13 sheet metal techniques and offers many helpful hints to save time and help motivate the homebuilder. Segments include shop organization and safety, cutting, polishing, deburring, drilling, dimpling, countersinking, riveting, fluting, bending, circle cutting, and more. A sample control surface is constructed using these techniques. (58 min.) DVD P/N 13-15120-1 ..... $42.50

MIKE ARNOLDS AR-5 WORLD RECORD AIRCRAFT DVDS

DVD 1, "WHY IT GOES SO FAST" - Documents the efficient AR-5's record runs and clearly explains the simple drag reduction concepts used to achieve its surprising performance on such low power. With comments by aerodynamicist, Bruce Carmichael.
P/N 13-15130 ..... $32.50

DVD 2, "HOW IT'S MADE" - Details the engine installation and the airframe's structural design, and completely demonstrates the easy moldless, hot-wired, foam and fiberglass construction process used on the fuselage, wing and tail services. Almost 2 hours.
P/N 13-15135 ..... $39.95



DVD 3, "MOLDLESS, LOW DRAG WHEELPANTS" - Details the engine installation and the airframe's structural design, and completely demonstrates the easy moldless, hot-wired, foam and fiberglass construction process used on the fuselage, wing and tail services. Almost 2 hours.
P/N 13-06277 ..... $29.95

DVD 4, "MAKING FIBERGLASS MOLDS" - This DVD chronicles development of a beautiful six piece, modled fiberglass aircraft cargo pod to show the simple design and fabrication techniques used to produce low cost, professional quality, production molds. From first sketches, through master patterns, to finished parts. Over an hour. P/N 13-15125 ..... $29.95

AR-5 HOW TO DVD SET - This four-part DVD set includes the following: Making Fiberglass Molds, How It's Made, Why It Goes So Fast, Moldless, Low-Drag Wheelpants. P/N 13-09990 ..... $108.95

MAKING A MOLDED FUSELAGE SHAPING THE AR - 6 - Goes from pencil drawing, to foam model, to the carving, glassing, and finishing of the plug, and, finally, to the assembly of the carbon-fiber and honeycomb fuselage.
P/N 13-12669 ..... $29.95

STEWART SYSTEMS 6 DVD SET

FABRIC COVERING, METAL AND OTHER SUBSTRATE PREP, MIXING PAINT AND PAINTING - 6 Disc Stewart Systems Combination Package Covering & Painting Videos. Most everything you need to know about our covering system, including complete information using the Stewart Systems Covering Process. It includes product application, painting instructions, STC and more. Well over 2 hours of video.
P/N 13-09411 ..... $19.95

"TIN MAN" METAL WORKING VIDEOS

These videos provide excellent instruction for the aircraft builder. Ken White, The Tin Man, is a master craftsman and instructor for the Experimental Aircraft Associations metal working workshops at Oshkosh.

BASIC DAMAGE REPAIR ON ALUMINUM – Take an axe and drive it through the nose of an RSK Porsche. now we're ready to begin by bumping, smoothing, gas welding, planishing, and metal finishing. All work completed on camera. Complete and very detailed. Color, 63 min.
DVD ..... P/N 13-04377 ..... $29.50

EDGE THOSE PANELS – Learn to make flanges, hems wired edges, and flares. With just a hammer, dolly, and some simple tools you can make, you'll be able to easily edge lots of panels. Wing rib construction is also shown. Then a rotary machine (bead roller) is used to do really fancy artwork! Color, 126 min.....
DVD P/N 13-04378 ..... $39.95

AN AMERICAN'S VIEW OF THE ENGLISH WHEEL – Shrink on the wheel? You bet! Analyze frame design, tracking patterns, layering, pressure measurement, rapid high crown development, nearly flat panels, and much more. Last segment shows air hammer shaping and shrinking on the Pullmax. Color, 126 minutes. DVD ..... P/N 13-40302 ..... $39.95

SHRINKING MAGIC – The art of shrinking (crimping or compression) is demonstrated using both the Lancaster machine and the torch and hammer method. Hot work demonstrations include steel, aluminum, copper, stainless, titanium, and magnesium. An excellent segment on form block work is shown as well. Color, 84 minutes. DVD ..... P/N 13-04381 ..... $39.95

SHAPING ALUMINUM WHEELPANTS-WITH 7 SIMPLE HAND TOOLS – Using a torch, mallet, stump, forming bag, slapper, dolly, and clamp you can make a really nice pair of pants (fenders or tank). This video includes buck development, pattern work, and hot shrinking. Air hammer shaping and Pullmax shrinking segment at the end. Color, 125 minutes.
DVD ..... P/N 13-04380 ..... $39.95

HOW TO GAS WELD ALUMINUM – Learn the professional methods of setting the torch, regulator pressures, and secrets of the flux. Filmed with two cameras through the finest eyewear available to show tacking, distortion control, flat and vertical welds. Many 30-year veteran welders have benefited from this video. Color, 105 minutes.
DVD ..... P/N 13-04379 ..... $34.95

4130 CHROMOLY AIRFRAME CONSTRUCTION – This video is highly recommended for anyone considering a steel tube fuselage aircraft. It covers the whole process: Workflow, welding rod selection, jigging, fitting, and welding. (Note: The discussions and advice are almost exclusively about oxyacetylene welding. TIG, GTAW, is mentioned only in passing.)
DVD ..... P/N 13-04375 ..... $54.95

BASIC AIRCRAFT WOODWORKING – Woodworking knowledge is essential to any homebuilding project. Power tool safety is also discussed. A great starter tape (30 min.).
P/N 13-23355 ..... $19.95

WEST SYSTEM EPOXY GELCOAT BLISTER REPAIRS - Dry rot repair & replacement, Fuel tank removal, Inspection & installation, Fiberglass procedures for strength, rigidity & surfacing. P/N 13-12703 ..... $18.75

WEST SYSTEM EPOXY BASIC APPLICATION TACHNIQUES - Covers repairing and preventing gelcoat blisters plus an analysis of the factors contributing to blister formation. P/N 13-12704 ..... $18.75

WEST SYSTEM EPOXY FIBERGLASS REPAIRS - Step-by-step program takes you through all the procedures you need to know to make professional, longlasting fiberglass repairs with epoxy.
P/N 13-12702 ..... $23.75

WEST SYSTEM EPOXY REPAIRS DVD SET - Includes: DVD Fiberglass Repair with West System Epoxy, DVD Gelcoat Blister Repair with West System Epoxy, and DVD Basic Application Techniques West Epoxy.
P/N 13-12705 ..... $52.95

COSMETIC GELCOAT / FIBERGLASS REPAIR BASIC DAMAGE AND FINISHING DVD - This program takes you step-by-step through every type of cosmetic repair. You'll learn the proper techniques, materials, tools and tricks of the trade from one of the best fiberglass repairman in the country. P/N 13-04810 ..... $26.95

FIBERGLASS REPAIRS MADE EASY DVD SET - Learn how to make fiberglass repairs as you look over the shoulder of a professional fiberglass repairman. P/N 13-12701 ..... $32.75

FIBERGLASS REPAIRS MADE EASY VOL I FIBERGLASS REPAIR AND GELCOAT DAMAGE - Learn how to make fiberglass repairs as you look over the shoulder of a professional. Covers grinding out damaged material, applying new fiberglass laminate, shaping to original lines and finishing. 54 mins P/N 13-12697 ..... $29.95

COSMETIC GELCOAT/FIBERGLASS REPAIR COLOR MATCHING AND FINISHING - This program takes you step-by-step through every type of cosmetic repair. You'll learn the proper techniques, materials, tools and tricks of the trade from one of the best fiberglass repairman in the country. P/N 13-12698 ..... $26.75

COSMETIC GELCOAT / FIBERGLASS REPAIR STESS CRACKS / AIR VOIDS AND FRACTURES - This program takes you step-by-step through every type of cosmetic repair. You'll learn the proper techniques, materials, tools and tricks of the trade from one of the best fiberglass repairman in the country. P/N 13-12699 ..... $26.75

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AVIATION VIDEOS & DVDS

FROM THE GROUND UP VOL 1-13

EAA, in conjunction with Discovery Channel International, presents all 13 episodes of the television series From the Ground Up on 3 DVDs. TV's first how - to aviation program. Enter the exciting world of airplane homebuilding and restoration. P/N 13-07442 ..... $59.99

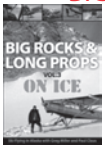
BIG ROCKS AND LONG PROPS VOLUME I

50 thrilling minutes of water assisted landings, big rocks, big tires, and great flying in a Super Cub and Experimental Maule (A.K.A. Bushwacker) Alaska and Northwest bush pilot Loni Habersetzer and Northwest bush pilot Greg Miller take you into their incredible playground of rock bars and water landings - on tires! P/N 13-04018 ..... $33.95

BIG ROCKS & LONG PROPS - VOLUME II

You will go from Greg's training ground to the desert and on to the mountains. The main movie is 40+ minutes long and includes a commentary track. There is a section on field repair and a section on the STOL competition for the bush class in Valdez Alaska for 2006. In all, almost 90 minutes of playing time. It has Greg Miller flying "Bushwacker" and also the 5 place Sherpa, which is basically a Super Cub on steroids. It also features Doug Keller and his amazing. Husky Cub P/N 13-04384 ..... $33.95

BIG ROCKS AND LONG PROPS VOLUME III



See the culmination of 30 years of bush flying experience as Paul flies his Turbine Otter and Super Cub in the rugged wilderness of the Wrangell-St. Elias National Park. Watch Greg as he learns the ins and outs of ski-flying in one of the most challenging places in Alaska, where the margin between life and death can be extremely thin.

P/N 13-05728 ..... $33.95

BIG ROCKS & LONG PROPS VOL. 4

Join Greg Miller on his Alaskan Adventure. Greg flies his experimental Maule a.k.a. Bushwacker to Alaska in the winter of 2008. The setting for this adventure is the Wrangell-St. Elias National Park. You'll see Greg landing his ski-equipped airplane on snow, ice, rock, and water. Come along as he climbs an ice fall, skins up mountain peaks, and skis down virgin snow-covered mountains. Running Time: 121 minutes

P/N 13-06275 ..... $33.95

BIG ROCKS & LONG PROPS - HIGH COUNTRY VOLUME 5

Big Rocks & Long Props Volume 5 - High Country DVD. Greg Miller, tired of the rain in the Pacific Northwest, heads for some dryer high-country with the founder of Nflightcam, Patrick Carter. Greg is interested in exploring and Patrick will provide the shots using a Canon 1080p HD camera and multiple Contour Plus cameras mounted to various parts of Bushwacker. Join them for this adventure as they explore the breathtaking scenery of the desert high-county.

P/N 13-11977 ..... $33.95

HOODRIVER BASIN COZY

In this DVD they'll fly you around the luscious green Hood River Basin in Oregon. During this scenic flight, you'll fly so close to Mt Hood, Mt Rainier, Mt St Helens and Mt Jefferson, it'll seem like you can reach out and just touch the snow covered peaks. Along the way, they will pass through the majestic Columbia River Gorge. The DVD length is 25 minutes..... P/N 13-08044..... $19.95

THINGS MY FLIGHT INSTRUCTOR NEVER TOLD ME

Topics like fuel management, flight planning, reluctant passengers, dealing with weather, the FAA, buying and owning an aircraft, as well as moving up to bigger and faster aircraft, are all discussed with humor and whit. He also discusses the people in aviation he has met that have had an influence on his flying career.

Book..... P/N 13-03381 ..... $19.95
E-Book..... P/N 13-09969 ..... $16.85

THE 100 HOUR INSPECTION POWERPLANT

Step by step demonstration of a 100 hour inspection of the powerplant section of a Lycoming 0-360 powered Piper Arrow. Explains every segment of the inspection process from an initial AD search to the final log entries. It details each procedure along with the techniques, tool and material usage, and plenty of professional hints and tips. Covers safety wiring techniques. ..... P/N 13-03883 ..... $24.95

PROFICIENT FLYING 3 DVD BOX SET

Disc 1 examines takeoff techniques, spins, engine failure after takeoff, control surface failures, weight & balance and measuring airspeed. Disc 2 covers rejected take off & landings, slips, power off glides, pitot static pitfalls, how to fly a taildragger and accident investigations utilization through computer generation. Disc 3 features aircraft ditching, how to swing one's compass, engine operating hints, unusual approaches, how to fly a seaplane, & how it all works. P/N 13-03647 ..... $36.50

RUDDER FUNDAMENTALS

Most pilots admire the skills of a good stick: an aerobatic pilot rolling on top of a loop; the pilot who lands a float plane on a tiny mountain lake or the local tailwheel pilot making a perfect touchdown in a strong cross wind? Have you wondered what you can you do to become a confident and skillful flyer? Actually there are only two fundamentals to master: Don't cause the airplane to stall Recognize and control yaw. My Key Points video Stall, Upset and Spin Recovery explores the first fundamental. Using ground school and film clips from the air, Rudder Fundamentals offers a unique and valuable presentation of the second fundamental; the recognition and control of yaw. You will: Learn to control adverse, P-factor and gyroscopic yaw. Master the Dutch roll, the definitive stick and rudder skill. Learn to use the technique of cross controlled rudder and aileron to perform a plethora, of aerial maneuvers.

P/N 13-12925 ..... $19.95

"121.5" EMERGENCY

Real life emergencies, actual ATC recordings! Hosted by TV personality and flight instructor MayCay Beeler, this unforgettable DVD features the actual ATC recordings of pilot and ground communications in real emergencies, brought to life with stunning animation and graphics. Listen, learn, and live. "121.5" DVD..... P/N 13-02854..... $21.95

CHASING LEWIS & CLARK ACROSS AMERICA

Climb into the cockpit to get a different, low-altitude perspective on America. Set to stirring music, selected photographs from the Chasing Lewis & Clark Across America book provide a view of our country that will nourish one's patriotic soul. From the virgin wilderness that Lewis and Clark discovered, to cities with the creations of man, this collection of photographs is like a tightly woven tapestry of America. The other half of the DVD provides a behind the scenes look at the trip including plane construction. DVD total 45 min., Wide screen, Stereo. Book (P/N 13-04562) and Book/DVD Combo (P/N 13-04564) available.

DVD..... P/N 13-04563..... $19.95
Book..... P/N 13-04562..... $37.95
Book/DVD Combo..... P/N 13-04564..... $57.50

CUBDRIVER 749ER ALASKA

Join Cubdriver749er and friends as we travel across the Alaskan frontier showcasing the off-runway capabilities of the Piper Supercub. Whether an expert aviator or novice pilot, Cubdriver: Alaska™ will certainly entertain with over 2 1/2 hours of Supercub action! P/N 13-05736 ..... $35.00

CUBDRIVER: NO SECOND CHANCES

Cubdriver is back....and better then ever. Join professional bush-pilot, Loni Habersetzer, and Alaskan guide, Donald C. Martin, on a real-life adventure as they challenge the rugged Alaskan Range in their newest installment to the popular "Cubdriver" series. Focusing specifically on One-way landings, this is their most challenging adventure yet. Once committed to land, there's no going around, and "No Second Chances." Filmed in 16.9 HD DVD Stereo Run time is: 2 hours 1 min.

P/N 13-09883 ..... $35.00

BUILDING YOUR OWN ZENAIR FLOAT

Zenair now offers their popular experimental aircraft floats as a kit which can be built with relatively simple construction techniques. This provides a substantial reduction in the cost of ownership making floats now affordable for many aircraft owners. (See www.ZenairFloats.com for product information and prices) While this video demonstrates the construction of a Zenair float, it does not show: the rigging of floats to an aircraft, spreader bars, mounting tires, nor other repetitive tasks such as painting, priming, riveting, etc. The effort was to keep the content of the video restricted to the unique tasks of float construction. P/N 13-09049..... $42.95

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AVIATION VIDEOS & DVDS

FLYING SINGLE PILOT IFR

If you fly single pilot IFR, this video is for you. Explains risks involved and how to minimize them. Explores equipment requirement, organization, getting real time weather, staying ahead of the airplane, copilot selection and situational awareness. (60 min)

P/N 13-23850 ..... $29.95

HOW TO GET A FLIGHT REVIEW

Recommended for anyone preparing for a flight review. Covers the relevant areas of FAR 61.56. and what you need to know for the flight review. Includes the new airspace & weather reporting changes. (50 min)

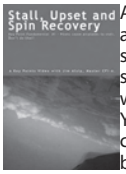
P/N 13-23860 ..... $29.95

BOB HOOVER AERIAL SUITE

Now on DVD and in stock! With over a half century of flying in every type of aircraft, Bob Hoover is most recognizable for thrilling and beautiful performances in his Shrike Aero Commander and yellow P-51 Mustang. With Hoover's retirement from the air show circuit, this is one of the few sources to see why he has earned the undisputed title of "the pilot's pilot."

P/N 13-08676 ..... $17.95

STALL, UPSET, AND SPIN RECOVERY



Are you anxious during slow flight and stalls because you are apprehensive about spins? Do not fear the spin; understand it. Spins are just another thing airplanes do, and you should train for spin recovery. Proper spin training begins with an introduction to stall and unusual attitude recovery. You need to understand that a heavy hand or misuse of the controls, during an unusual attitude, can stall the wing and begin a spin event. P/N 13-11864 ..... $19.95

BREAKING THROUGH THE CLOUDS

Breaking Through the Clouds is nearly 2 hours long and includes actual footage of the 1929 air race. In addition, there are aerial recreations in the film, using planes like the women flew in the derby including: Travel Air, Waco, Monocoupe and Fleet.

Over 13 years of research went into the making of this film. There are images of the women in the race that have rarely been seen before. In addition, there are interviews with Elinor Smith Sullivan, legendary pilot, Patty Wagstaff, national aerobatic champion, Julie Clark, aerobatic pilot, family members of the pilots in the derby, aviation historians and people who knew the women racers personally.

P/N 13-08619 ..... $29.95

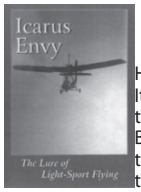
THE AVIATORS SERIES

This wildly popular DVD set of all 13 episodes of the complete first season of the hit PBS television series The Aviators. New and exciting magazine-style series featuring interesting people, the latest aircraft, the coolest technology and the best fly-in destinations of North American aviation. The Aviators is truly for everyone who has ever gazed skywards. Each episode is comprised of 3 or 4 segments. This format ensures that the show remains fast-paced, capturing and holding the viewer's interest from beginning to end.

Season One DVD ..... P/N 13-08262 ..... $34.95
Season Two DVD ..... P/N 13-11306 ..... $29.95
Season Three DVD ..... P/N 13-12393 ..... $49.95

CREW RESOURCE MANAGEMENT: EXPLORING THE HUMAN ELEMENT

Become an expert on important aviation topics when you explore them in depth with CRM - Exploring the Human Element (DVD) by Jeppesen. This video explores United Airline's human factors training program. Whether you are operating in a Part 121, 135, or 91 environment, you can benefit. P/N 13-07840 ..... $13.50



ICARUS ENVY THE LURE OF LIGHT SPORT FLYING

Hour-long documentary film about light sport aviation. It is shot almost entirely in Wisconsin, and provides a thrilling introduction to the world of low and slow flying. Breathtaking flying scenes from both the ground and in the air, even on skis and floats, are all beautifully orchestrated to an evocative music soundtrack.

P/N 13-12898 ..... $19.95

FLYABOUT

Flyabout tells the autobiographical story of Monika Petrillo's journey piloting a small single-engine airplane around the continent of Australia. Her father, a pilot with limited experience himself, is riding shot As the only women pilot in a group of eleven people, Monika sets out to experience the true freedom of flight above one of the most untouched places on earth. But what impacts her most is the unexpected conflict that arises between her father and herself. P/N 13-06638 ..... $19.95

THE GREAT CIRCLE AIR SAFARI

FLYING THE OUTBACK - Experience an exhilarating flight through the vast Australian Outback with nine vintage aircraft. In the fall of 2005, two Americans, Doug DeVries and Rob Richey, shipped their 1942 Stearman biplane all the way to Australia, joining up with their Aussie mates for a 4,000 mile flight through some of the most remote areas in the country. Stunning high definition footage by Oscar winning director of photography Eric Thiermann coupled with the story of two pilots on a quest of discovery yields a compelling film.

P/N 13-05079 ..... $24.95

THE COMPLETE AIRLINE PILOT INTERVIEW COURSE

This DVD from Flightdeck Consulting has been produced and developed by airline pilots for airline pilots. This DVD includes: Eight Virtual Interviews to help you perfect your interview technique. Access to the "Airline Pilot Interview Work Booklet", an essential tool covering all aspects of your interview including psychometric testing, simulator check ride and panel interview. Simulator Assessment Guide. Psychometric Testing Information. Complimentary Email Support from professional airline interview consultants. Make an investment in your future and be "The Standout Candidate" at your interview.

P/N 13-08754 ..... $69.00

WONDERFUL WORLD OF WARBIRDS SET

Hosted by Jeff Ethell, these DVDs explore the ins and outs of some of World War II's most loved (and feared) military aircraft. From the P-51 Mustang to the A-26 Invader, fighter planes to bombers, this set makes a great gift! Over 3.5 hours (216 min). 4 DVD set.

Includes: Volume I: P-51 Mustang , Volume II: P-40 Warhawk, Volume III: A-26 Invader, Volume IV: Spotlights Grumman Wildcat. P/N 13-04713 ..... $55.00

GETTING STARTED IN AEROBATICS

Produced in co - operation with the International Aerobatic Club, Getting Started in Aerobatics is a valuable introduction to the dynamic world of aerobatics. During the course of this program, you'll hear six legendary aerobatics pilots relate their years of experience and address topics that include the benefits of aerobatics, its history and background, training options, selecting the right instructor and equipment, and more. You'll also experience the thrill of an aerobatics flight lesson at the renowned Pompano Air Center. Getting Started in Aerobatics contains information to consider before you begin - or continue - your aerobatics training. (55 minutes) P/N 13-40505 ..... $14.95

WELDING AND CORROSION

Take the mystery out of aircraft welding! Join Host Gregg Ewert and instructor Bill Roerig as they take you step-by-step through the process of oxyacetylene welding. Whether you've never held a torch before or if you haven't welded in years and want to brush up on your skills, this video will provide you with the background to get you started. Corrosion is not just a problem unique to floatplanes. Corrosion is a threat to any aircraft exposed to humid conditions, including acid rain. Join corrosion expert Geo Hindall in an hour-long examination of the problem. Learn to recognize, prevent and protect your airplane against the effects of corrosion!

P/N 13-10013 ..... $19.99

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ROD MACHADO FLIGHT TRAINING

FAA PRIVATE PILOT eKIT

The FAA Private Pilot eKit is a private pilot groundschool training kit based on the official FAA Curiculla. eBooks in this kit are compatible with Windows, Macintosh, iPad, iPhone, Kindle Fire, and all Android type eReaders. Each eBook in this kit is provided as an open file. They may be transfered between your various computers and reading devices, printed, and used with all Adobe .pdf functions including search, copy/paste, bookmarking, note taking, voice transcription, etc... Kit Includes: • Pilots Handbook of Aeronautical Knowledge, eBook • Airplane Flying Handbook, eBook • Risk Management Handbook, eBook • Private Pilot Flight Maneuvers, eBook • PTS - Private - Airplane, eBook • FAR/AIM, eBook, by FAA • ASA-SP-57: Pilot Log Book, Book, by ASA • ASA-SP-57: Plotter - Lexan 13-inch, by Aircraft Technical Book Co. • ASA-E6B: ASA METAL E6B, by ASA • ASA-TW-PVT-12 Private Pilot PrepWare, CD, by ASA. P/N 13-11709 ..... $159.95

PRIVATE PILOT eKITS

Very thorough, very detailed, very complete, highly illustrated - but taught in a way that makes you remember what you're supposed to be learning. Many major flight schools, including Embry Riddle, have switched to this book from those of the major publishers. Since doing so, they have reported their student pass rate up 15-20%. Matching workbook contains questions and answers from the FAA private pilot written test along with additional student study aides and for instructors, an FAA approved Part 141 ground school syllabus. Note: eKits are a packaged product containing pre-paid download codes for eBooks plus additional physical training tools. eBooks are in .pdf format and are compatible with all Windows, Mac, iPad, iPhone, and Android type devices.

Basic Kit ..... P/N 13-11633 ..... $119.95
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INSTRUMENT RATING eKIT

A combination of convenient eBooks and physical training tools make up this deluxe Instrument Rating training package. Centered around the Rod Machado Instrument Handbook, this kit offers a unique and effective teaching style with proven results to instrument students of all levels. In addition, this complete kit includes an Instrument Manuevers Manual detailing required flight skills; The Instrument Procedures Guide, giving established and current guidelines for in-cockpit procedures; the latest edition of the FAA Chart Users Guide detailing all symbols and terminology of FAA/NACO type VFR and IFR publications; IFR Principles and Practices, providing practical exersizes and a human factors perspective to instrument flight; the official Instrument Pilot Practical Test Standards; a fresh and current copy of the FAR/AIM; and physical items including an IFR enroute chart plotter, a Foggles type view limiting device, and the ASA Instrument test Prepware CD.

P/N 13-11682 ..... $218.95

FAA INSTRUMENT RATING eKIT

A combination of convenient eBooks and physical training tools make up this deluxe Instrument Rating training package. Centered around FAA textbooks and publications, this kit offers the actual and "official" curricula prescribed by FAA and from which all knowledge and practical test questions are derived. In addition, this complete kit includes a fresh and current copy of the FAR/AIM, and physical items including an IFR enroute chart plotter, a Foggles type view limiting device, and the ASA instrument test Prepware CD. P/N 13-11683 ..... $145.95

RON MACHADO'S HOW TO FLY AN AIRPLANE HANDBOOK

This valuable one-stop handbook contains the information necessary to: Learn the basic fundamentals of flying any airplane. Make flight training easier, less expensive and more enjoyable. Master all the private and commercial checkride maneuvers. Learn the "stick and rudder" philosophy of flying an airplane. Prevent an airplane from accidentally stalling and spinning. Allow you to learn to land an airplane quickly and enjoyably. Make you a better instructor by providing unique teaching strategies and explanations for student training.

P/N 13-15937 ..... $42.95

ROD MACHADO'S SPORT PILOT HANDBOOK

A serious text written in a fun and witty style. More than 1,000 original illustrations and photos in a softbound, full color, 582 page book. Written in the first person, it's as if Rod is sitting next to you, personally explaining all the necessary aspects of flying to make you an informed, confident and competent sport pilot. It is the first book of its kind completely written and illustrated by one instructor. P/N 17-00017 ..... $65.00

RODMACHADO'SPRIVATEPILOTHANDBOOK2NDEDITION -

A serious text written in a fun and witty style. More than 1,200 original illustrations & photos with 50 pgs in full color, ensures this to be a one-of-a-kind manual. You can learn or review by just looking at the pictures. However, the text is laced with Machado's humor, so you will want to read every last word of the 572 pages. Written in the first person, it's as if Rod is sitting next to you, personally explaining all the necessary aspects of flying to make you an informed, confident and competent pilot. Flight instructors will love using the great illustrations with their students. It will also be a favorite for its readability. A book only has value if it's read and understood. For years pilots at Oshkosh, Sun n' Fun and seminars across the country have asked Rod to write a fun and easy to understand book for pilots. Well, here it is folks, perfect to refresh for a flight review, catch up on new rules or for student pilots to pass their FAA knowledge and oral exams.

Description	Part No.	Price
2nd Edition Rod Machado's Private Pilot Handbook	13-05698	$48.95
Private Pilot Handbook in Audio MP3 Format	13-08658	$89.95

ROD MACHADO'S PRIVATE PILOT WORKBOOK -

As a programmed learning guide, this book will help prepare you for the FAA Private Pilot Knowledge Exam. The questions are organized to follow the presentation of material, section, as found in the Handbook. It will help you understand and absorb the knowledge necessary for you to fly safely. You can test your knowledge and comprehension in each subject area with numerous weight and balance, performance, and flight planning problems. P/N 13-01502 ..... $19.95

RODMACHADO'SINSTRUMENTPILOT'SHANDBOOK-

624 pages in full color! This book allows you to learn everything you need for: * The FAA instrument knowledge exam * Your instrument proficiency check * Updating and refreshing your knowledge This valuable one-stop handbook contains the information necessary to: * Fly instruments as a knowledgeable and competent pilot. * Prepare for the FAA instrument pilot knowledge exam * Prepare for the instrument pilot practical oral exam. * Refresh for your instrument proficiency check. * Remain an up-to-date confident instrument pilot.

Book ..... P/N 13-05699 ..... $48.50

ROD MACHADO'S PLANE TALK -

A collection of Rod Machado's most popular aviation articles and stories from the last 15 years. 456 page book.

P/N 13-03155 ..... $23.95

ROD MACHADO'S AVIATION VIDEOS & DVD'S

DEFENSIVE FLYING - Rod Machado discusses how pilots can learn to think defensively. Learn about acknowledging your own limitations and a pilot's psychological predators as well as never underestimating aerial enemies. Listen to an actual, hair-raising, in-flight emergency as two professional pilots exercise one of the most important skills in Defensive Flying. This presentation contains many new stories and humor not previously heard on Rod's audio tapes.DVD P/N 13-04567 ..... $23.95

AVIATION HUMOR - Laugh along with over 2,000 pilots as Rod Machado entertains his audience with some of the best of his aviation stories. After so many requests for a video version of his very popular audio tapes, this video of Rod's is sure to be a popular addition to your library.

DVD ..... P/N 13-04568 ..... $23.95

IFR FLYING - Rod has incorporated six of his most popular IFR segments into this educational video. And, for comic relief, Rod has interspersed live, humorous clips from one of his popular seminars between each story segment. This is a valuable tape for beginners as well as seasoned pros. You're sure to laugh and learn as Rod shows you: A unique, multi-step instrument scan, Single pilot IFR cockpit management, How to really use the approach lighting system, techniques to make safe IFR departures, & more. P/N 13-40315 $22.50

RODMACHADO'SINSTRUMENTPILOTSURVIVALMANUAL -

This book is unlike any other book on instrument flying that you have encountered. 232 pages, Illustrated with humorous drawings. Excellent for IFR students or as IFR refresher.

Book ..... P/N 13-40330 ..... $28.95
E-Book ..... P/N 13-09976 ..... $28.50

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A-65, A-75 Overhaul, Maintenance & Parts Manual	A-A40	13-03751	$14.50
E-165, E-185, E-225 Overhaul Manual	X30016	13-03999	$69.00
E-165, E-185, E-225 Parts Catalog	X30017	13-04000	$65.85
GO-300 Overhaul Manual	X30019	13-04001	$57.85
IO-360 Overhaul Manual	X30594A	13-03943	$92.75
O-470 Overhaul Manual	X30586A	13-04002	$94.00
IO-470 Overhaul Manual	X30588A	13-04003	$93.50
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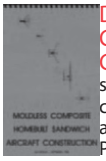

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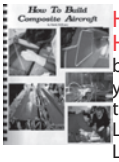

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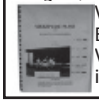

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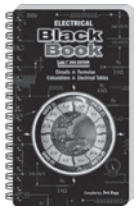

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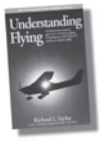

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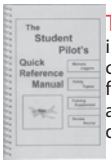

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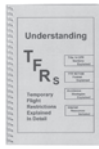

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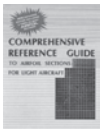

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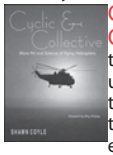

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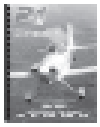

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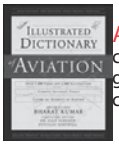

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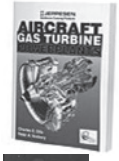

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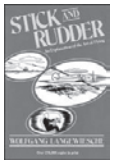

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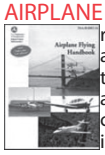

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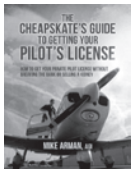

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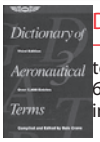

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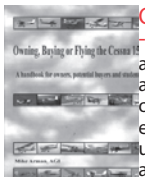

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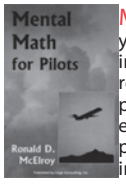

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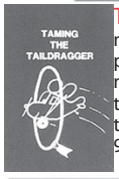

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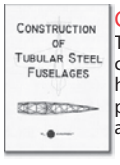

CONSTRUCTION OF TUBULAR STEEL FUSELAGES BOOK– This book provides step by step instructions on how to construct a perfect tubular steel fuselage. It is the result of hundreds of hours of development in the shop doing rapid protoyping of perfectly symmectrical and dimensionally accurate fuselages and assemblies, without special jigs.
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YOU WANT TO BUILD AND FLY A WHAT? (DICK STARKS) – This is the boisterous, very funny, wildly exaggerated true story of Dick Starks, a math teacher who goes through the agonies and delights of learning to fly, buys an old Cessna, and then goes on to build a replica of a WWI Nieuport fighter plane. This is a book about the fun of flying and the joy of sharing that fun with family and friends. P/N 13-15170 ..... $15.95

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MODERN PROPELLER AND DUCT DESIGN – This book tells you the theory of propeller aerodynamics and how to size a propeller. The program allows you to optimize a propeller for a given horsepower and airspeed. Variables such as number of blades, pitch, airfoil, thickness, air density, thrust coefficient, prop efficiency, and airspeed are all explained. Discussion of various prop materials and duct theory is also included. (Martin Hollman) P/N 13-15175.....$61.75

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P/N 13-02082 .....$16.95

THE ORIGINAL GRAND CANYON AIRPORT - Every chapter is illustrated with images of Ford Trimotors, Travelairs, and more Golden Age aircraft. Koontz's original research at the airport during 2005 resulted in a listing on the National Register of Historic Places. Naval Aviator, Rear Admiral Ernest Eugene "Gene" Tissot, Jr. (USN Ret.), shared personal memoires and family photographs from his childhood years living at the airport and near Boulder Dam (now Hoover Dam). These stories and most of the photographs have never before been published. P/N 13-12352.....$27.95

INTERNATIONAL AIRCRAFT DIRECTORY AP – Whether you're a pilot or an aviation enthusiast, the International Aircraft Directory from the editors of Plane & Pilot magazine is sure to have all you're looking for in an easy-to-use reference tool for checking facts about a particular model, identifying unusual aircraft, and recognizing trends in airplane design. Now in its third edition, the book features detailed descriptions and photographs of more than 500 airplanes from around the world, including single-engine, multi-engine, jet, classic antique, homebuilts, kit-builts, sailplanes, motorgliders, warbirds, and military aircraft flown by civilian pilots. The directory lists airframe and powerpalnt information and historical facts as well as standard data and performance specifications such as a horsephower thrust, weight, speed, and range. The 304-page softcover book. P/N 13-04144 .....$14.95

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Book..... P/N 13-03454 .....$36.50
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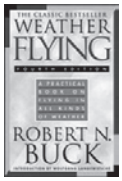

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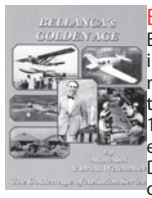

BELLANCA'S GOLDEN AGE BOOK – Traces G.M. Bellanca coming from Sicily to America as a teenager in 1911 through his 42 years of continuous airplane manufacturing operations. He did more for aviation than any other single individual during aviation's first 100 years, bar none! This is the ONLY BOOK that has ever captured Bellanca's complete and lengthy story. Details the beginnings of the air transportation system over great distances. Details the first ten flights over the Atlantic and the first flight over the Pacific. Tells never-before-told stories of Charles Lindbergh, Clarence Chamberlin and many other Golden Age personalities. Tells the complete story of the greatest airplane of the 1920s — Bellanca's Columbia (the plane Lindbergh wanted but didn't get). In the 1930s the government tested 209 different airplanes and found that Bellanca's was the best regarding "efficiency." 148 pages and 175 plus photos. P/N 13-03337 .....$24.95

STINSON'S GOLDEN AGE - By: John C. Swick. This is the history of the Stinson 108 series airplane (the Voyager), although the 105, 10 and 10A, as well as the L-5, are also covered in great detail. It begins in Volume 1 with the three-place 105 in 1938 and concludes in Volume 2 with the sale of the last Stinson 108-3 from Willow Run in 1950. Production figures, the disposal of surplus military aircraft, the all-Piper Apache and the chronicle of two Stinson dealers are included to give the reader a better sense of the era. 173 pgs, SB, 8.5 x 11, over 200 B&W photos, tables, illustrations & technical drawings.

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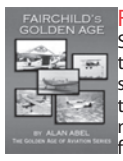

FAIRCHILD'S GOLDEN AGE - BY ALAN ABEL A young Sherman Fairchild quit college in 1917 to start a company to build aerial cameras. After 3 years, Fairchild built the first successful large, high-speed between-the-shutter camera that was a major breakthrough in aerial photographic technology. Fairchild found airplanes of the day not suitable for the photographic mission. Sherman decided to build one himself. During the design of the plane, Fairchild decided to build a multi-purpose plane suitable for other piloting needs and to market these airplanes to the public. P/N 13-06177..... $24.95

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LUSCOMBE'S GOLDEN AGE - BY JOHN SWICK. Luscombe's Golden Age is the fifth book in The Golden Age of Aviation Series. John Swick, the author, has completely revised and updated the original The Luscombe Story published in 1987, including approximately 100 new pages of text, dozens of never-before published photographs and Luscombe magazine ads from that era. Included in this book are detailed accounts and descriptive 3-view scale drawings of each Luscombe model manufactured, including the early models: Phantom, Ghost, Spectre, Harpie, Small Transport and Sprite.
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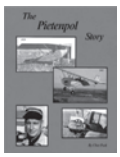
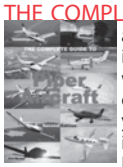
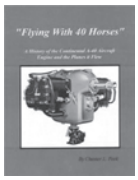


THE PIETENPOL STORY BY CHET PEEK - During the Great Depression Bernard Pietenpol wanted desperately to fly, but could not afford to buy a plane. So he built his own, a simple wood and fabric monoplane powered by a Model A Ford engine. When the "Experts" in the Modern Mechanics magazine declared such a plane could not fly, he piloted his home-made masterpiece to their Minneapolis headquarters and proved them wrong. Impressed by the plane's clever design and gentle flying characteristics, they subsequently published his plans in their Flying and Glider Manual. Over the next years thousands of copies were built, and they are still being crafted worldwide today. P/N 13-06187..... $21.95

THE COMPLETE GUIDE TO CESSNA AIRCRAFT BY TOM MURPHY - Ready to buy a new or pre-owned Cessna? This updated second edition includes (1) original in-depth info about older Cessna models (2) updated info on Cessnas being offered today and (3) buying advice on AD's, inspection of aircraft and its logbooks and how to choose the right model for your needs. P/N 13-06179..... $19.95



THE COMPLETE GUIDE TO PIPER AIRCRAFT - Are you ready to buy a new or pre-owned Piper? This updated second edition includes the original in-depth info about Piper models along with purchasing advice on ADs, inspections, the importance of logbooks, and how to choose the right Piper aircraft for your wants and needs. This informative narrative includes information on models from the Piper Cub, to the various Piper Indians such as the Cherokee, the Cheyenne, the Comanche, and the agricultural Pawnee. P/N 13-06181..... $19.95



FLYING WITH 40 HORSES - THE CONTINENTAL A-40 ENGINE - The Continental A-40 Engine was the answer to the continuing problem of finding suitable and inexpensive powerplants for lightplane manufacture during the Golden Age. The Aeronca E-113 of 36-hp was close, but the next generation, the Continental A-40 filled the bill. It was light, could power a 2-place airplane, and cost less than $500.
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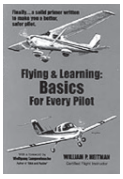

FLYING & LEARNING: BASICS FOR EVERY PILOT (WILLIAM HEITMAN) - Heitman uses simple terms and personal experiences to lay basics which students can use to get their feet wet. By keeping things simple, he also keeps the new student interested, which can be difficult when teaching something as complicated as flying. This is an excellent primer for students who are just beginning their flight training or pilots who have been away from flying for a while. P/N 13-15129 .....$14.95

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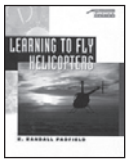

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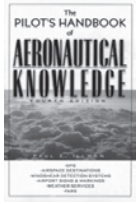

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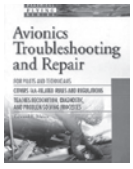

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1/64	.015625	0.39688	17/64	.265625	6.74689	33/64	.515625	13.09690	49/64	.765625	19.44691
1/32	.03125	0.79375	9/32	.28125	7.14376	17/32	.53125	13.49378	25/32	.78125	19.84379
3/64	.046875	1.19063	19/64	.296875	7.54064	35/64	.546875	13.89065	51/64	.796875	20.24067
1/16	.0625	1.58750	5/16	.3125	7.93752	9/16	.5625	14.28753	13/16	.8125	20.63754
3/64	.078125	1.98438	21/64	.328125	8.33439	37/64	.578125	14.68440	53/64	.828125	21.03442
3/32	.09375	2.38125	11/32	.34375	8.73127	19/32	.59375	15.08128	27/32	.84375	21.43129
7/64	.109375	2.77813	23/64	.359375	9.12814	39/64	.609375	15.47816	55/64	.859375	21.82817
1/8	.125	3.17501	3/8	.375	9.52502	5/8	.625	15.87503	7/8	.875	22.22504
9/64	.140625	3.57188	25/64	.390625	9.92189	41/64	.640625	16.27191	57/64	.890625	22.62192
5/32	.15625	3.96876	13/32	.40625	10.31877	21/32	.65625	16.66878	29/32	.90625	23.01880
11/64	.171875	4.36563	27/64	.421875	10.71565	43/64	.671875	17.06566	59/64	.921875	23.41567
3/16	.1875	4.76251	7/16	.4375	11.11252	11/16	.6875	17.46253	15/16	.9375	23.81255
13/64	.203125	5.15939	29/64	.453125	11.50940	45/64	.703125	17.85941	61/64	.953125	24.20942
7/32	.21875	5.55626	15/32	.46875	11.90627	23/32	.71875	18.25629	31/32	.96875	24.60630
15/64	.234375	5.95314	31/64	.484375	12.30315	47/64	.734375	18.65316	63/64	.984375	25.00318
1/4	.25	6.35001	1/2	.5	12.70003	3/4	.75	19.05004	1	1.	25.40005

LENGTH EQUIVALENTS

Unit	Millimeters	Centimeters	Inches	Feet	Yards	Meters
1 Millimeter=	1	.1	.03937	.003281	.001094	.001
1 Centimeter=	10	1	.3937	.032808	.010936	.01
1 Inch=	25.4001	2.54001	1	.083333	.027778	.025400
1 Foot=	304.801	30.4801	12	1	.333333	.304801
1 Yard=	914,402	91.4402	36	3	1	.914402
1 Meter=	1000	100	39.37	3.28083	1.09361	1

Unit	Feet	Yards	Meters	Rods	Furlongs	Miles (Statute)
1 Rod=	16.5	5.5	5.02921	1	.025 (1/40)	.003125 (1/320)
1 Furlong=	660	220	201.168	40	1	.125(1/8)
1 Mile (Statute)=	5280	1760	1609.35	320	8	1

1 Nautical Mile = 6080.2 feet = 1.15155 statute miles = 1/3 league.
1 Light Year = 5.879 trillion miles = 9.46 trillion kilometers.

WEIGHT EQUIVALENTS

Unit	Grains	Grams	Ounces (Troy)	Ounces (Avoir.)	Pounds (Troy)	Pounds (Avoir.)	Kilo-grams
1 Grain=	1	.064799	.002083	.002286	.000174	.000143	.000065
1 Gram=	15.4324	1	.032151	.035274	.002679	.002205	.001
1 Ounce (Troy) =	480	31.1035	1	1.09714	.083333	.068571	.031104
1 Ounce (Avoir.) =	437.5	28.3495	.911458	1	.075955	.0625	.028350
1 Pound (Troy) =	5760	373.242	12	13.1657	1	.822857	.373242
1 Pound(Avoir.) =	7000	453.592	14.5833	16	1.21528	1	.453592
1 Kilogram =	15432.4	1000	32.1507	35.2740	2.67923	2.20462	1

Unit	Kilograms	Pounds (Troy)	Pounds (Avoir.)	Metric Tons	Net (Short)	Gross (Long Tons
1 Metric Ton =	1000	2679.23	2204.62	1	1.10231	.984206
1 Net (Short) Ton=	907.185	2430.56	2000	.907185	1	.892857
1 Gross (Long) Ton=	1016.05	2722.22	2240	1.01605	1.12	1

AN/MS O-RING EQUIVALENTS

The AN6227B, AN6230B and MS28775 O-Rings have the same composition. For use in aircraft hydraulic systems using MIL-H-5606 petroleum base hydraulic fluid.

AN6227B/MS28775 Equivalents

AN6227B Dash No.	MS28775 Dash No.	Nominal Size Width	I.D.	O.D.
1	6	1/16	1/8	1/4
2	7	1/16	5/32	9/32
3	8	1/16	3/16	5/16
4	9	1/16	7/32	11/32
5	10	1/16	1/4	3/8
6	11	1/16	5/16	7/16
7	12	1/16	3/8	1/2
8	110	3/32	3/8	9/16
9	111	3/32	7/16	5/8
10	112	3/32	1/2	11/16
11	113	3/32	9/16	3/4
12	114	3/32	5/8	13/16
13	115	3/32	11/16	7/8
14	116	3/32	3/4	15/16
15	210	1/8	3/4	1
16	211	1/8	13/16	1-1/16
17	212	1/8	7/8	1-1/8
18	213	1/8	15/16	1-3/16
19	214	1/8	1	1-1/4
20	215	1/8	1-1/16	1-5/16
21	216	1/8	1-1/8	1-3/8
22	217	1/8	1-3/16	1-7/16
23	218	1/8	1-1/4	1-1/2
24	219	1/8	1-5/16	1-9/16
25	220	1/8	1-3/8	1-5/8
26	221	1/8	1-7/16	1-11/16
27	222	1/8	1-1/2	1-3/4
28	325	3/16	1-1/2	1-7/8
29	326	3/16	1-5/8	2
30	327	3/16	1-3/4	2-1/8

AN6230B/MS28775 Equivalents

AN6230B Dash No.	MS28775 Dash No.	Nominal Size Width	I.D.	O.D.
1	223	1/8	1-5/8	1-7/8
2	224	1/8	1-3/4	2
3	225	1/8	1-7/8	2-1/8
4	226	1/8	2	2-1/4
5	227	1/8	2-1/8	2-3/8
6	228	1/8	2-1/4	2-1/2
7	229	1/8	2-3/8	2-5/8
8	230	1/8	2-1/2	2-3/4
9	231	1/8	2-5/8	2-7/8
10	232	1/8	2-3/4	3
11	233	1/8	2-7/8	3-1/8
12	234	1/8	3	3-1/4
13	235	1/8	3-1/8	3-3/8
14	236	1/8	3-1/4	3-1/2
15	237	1/8	3-3/8	3-5/8
16	238	1/8	3-1/2	3-3/4
17	239	1/8	3-5/8	3-7/8
18	240	1/8	3-3/4	4
19	241	1/8	3-7/8	4-1/8
20	242	1/8	4	4-1/4
21	243	1/8	4-1/8	4-3/8
22	244	1/8	4-1/4	4-1/2
23	245	1/8	4-3/8	4-5/8
24	246	1/8	4-1/2	4-3/4
25	247	1/8	4-5/8	4-7/8

No MS28775 Equivalent for AN6230B-31 and Larger

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